Innovative Management Practices on the Growth of Building Construction Firms in Machakos County, Kenya

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Abstract

Building construction firms in Kenya contribute immensely to the country's economic growth. Despite their importance to the economy, the firms have been facing a myriad of challenges, including inadequate adoption of innovation management practices, resulting in a decline in firm growth. This study sought to interrogate the role of Innovation practices that influence the growth of building construction firms in Machakos County, Kenya. The Focus of the study was to examine how technological, product, and process innovation management practices influence the growth of building construction firms in Machakos County. The importance of this study is that the findings will assist building construction firms in Machakos County and Kenya in general in identifying, acknowledging, and implementing appropriate innovation management practices to spur firm growth. Findings from the study will also enrich the body of knowledge in strategic management for use by other scholars in reviewing similar research in Kenya and elsewhere. The study was premised on Schumpeter's theory of Innovation and the resource-based view Theory. A descriptive study design was employed, and a cluster sampling method was used to achieve a sample size of 237 firms. From each cluster, a sample size to represent all the members in the specific clusters was selected using the formula $n = N / 1 + N (\alpha)^2$. A closed-ended structured questionnaire was used. The questionnaire response rate was 81% which was an acceptable threshold. Findings showed that innovative management practices have a significant positive correlation with the firm growth of building construction firms in Machakos County. In conclusion, the study affirmed that innovative management practices had a strong and significant role in the Firm Growth of building construction firms in Machakos County.

Keywords: **Innovative Management Practices, Firm Growth, Technological Innovation, Product Innovation, Process Innovation, Resource-Based View Theory**

Introduction

This section highlights the underpinnings and the context of the study. The section further introduces the basic concepts of the statement of the problem, the objective of the study, study design, analysis, results and conclusion of the study.

The building and construction sector in Kenya contributes significantly to Kenya's GDP (Nduati et al. 2021). Firm growth in the building and construction firms has been attributed

to the consistent use of innovative management practices,a requisite to help these firms align their goals with the overall socioeconomic and political environment(Jean, 2024).Innovative management practice lowers the likelihood of uncertainties and helps firms leverage strategies with their resource endowments to facilitate firm growth (Mandrita, 2023). Scholars in strategic management have empirically affirmed that firm growth is a result of sound implementation of innovative management practices,as this enables firms to predict and prepare to harness existing business opportunities, for firm growth viably (Gioko & Njuguna, 2019). According to a study by Otieno et al. (2019), Kenya's domestic industry would expand by 8.7 percent in 2017, and it will continue to expand at a stable rate until 2026, with an annual growth rate of 6.2 percent as a result of the role of the building construction sector. This will result in Kenya surpassing other nations in Sub-Saharan Africa. Building construction firms are responsible for the construction of new establishments such as homes, flats, industries, offices, and schools (Otieno et al. 2019).

Innovative management guarantees firms the preparedness to respond proactively to the constantly evolving business environment instead of reacting to the same (Ngwangwama *et al*., 2019). In effect, the practice helps firms set clear organization objectives, efficient allocation and utilization , adapting to changing market conditions, expand into new markets and identify new opportunities for firm growth (Gioko & Njuguna, 2019). Therefore, a firm’s adoption of innovation management practice provides the premise for the attainment of a competitive edge above competitors in the industry and hence firm growth(Taka, 2021). Globally, innovation management practices have been increasingly used in the building and construction sector in China to spur firm growth (Kim and Pham, 2019). Empirical evidence suggests that the growth of Chinese building and construction firms has benefited greatly from the adoption of renewed innovation efforts across the country's industrial establishments (Kim & Pham, 2019). Furthermore, empirical data affirms that firm growth of building construction firms in Australia has been spurred by the application of appropriate tailored industrial innovative practices(Langston & Zhang, 2021). Scholarly evidence posits that directed Innovative practices have significantly contributed to the Jordanian building construction industry practices (Musa *et al*., 2022).

The slow growth of building construction firms in the African region has been attributed to the inadequate application of innovative management practices that meet the demand of the industry (Ngwangwama *et al*., 2019). The African continent has witnessed a concerted effort to prove innovative management practices within SMEs in South Africa, to enhance firm growth. However, a big percentage of these firms collapse within a few years of their inception because of inappropriate adoption of the much-needed dimensions on the diverse industry. (Rambaruth, *et al*., 2022).Similarly, Firm growth of building construction firms in West Africa has been characterized by an active embrace of innovative management practices to enhance competitiveness and address challenges inhibiting the growth of these firms(Opokuc et al., 2023)Empirical data affirms that the building and construction firms in Kenya contribute significantly to the country's GDP, by facilitating firm growth (Nduati et al., 2021). A current economic survey in Kenya affirms that innovative management practices is evidently to play a pivotal role in controlling the rate of economic growth within the Kenyan economy. According to existing statistical data, in 2023, building construction firms recorded a growth rate of 1.1%, lower than the 4.1% rise recorded in 2022 (Kenya National Bureau of Statistics, 2024). Adoption of Innovative management practices enhances stakeholder trust, reduces risk and ensures responsible resource management, while at the same time contributing to overall firm growth(Taka, 2021).

Innovative Management Practices

An essential component of a company's competitiveness in any business configuration is the adoption of innovation management practices (Taka, 2021). According to Harpreet (2019), it is consequently essential for businesses which want to expand their operations and enter new markets to adopt innovative management practices. According to Naqbi *et al.* (2020), operational processes that are efficient are a crucial factor in the success of most business activities. This paper will explore the influence of innovative management practices on the growth of building and construction firms in Machakos County. Specifically, the paper explores how technological and product/process innovation contribute to the growth of building construction firms in the County. Empirical data suggest that these processes are a panacea for declining investment returns and will result in enhanced firm deliverables and, hence, firm growth (Naqbi *et al.,* 2020).

Firm Growth

Firm growth is an essential indicator of achievement of mandates (Kiveu *et al*., 2019). Otieno *et al*. (2019) observe that firm growth can be measured using varied indicators ranging from sales volume, firm assets, employment capacity, production and productivity ratio, return on equity, market share, market expansion, financial growth and profitability. Firm growth is described by specific characteristics of the firm, ranging from size and age of the firm, strategic orientation of the firm, research and development of the firm and financial capacity of the firm(Nduati *et al*., 2021). Indicators of growth in firms are observable through capabilities of the firm, which include the ability of the firm to acquire resources, the expansionist nature of the firm, incremental capacity to control a bigger market share and the productive capacity of the firm(Jean, 2024). As measures of firm growth, this research will use financial growth, market expansion, and an increase in the number of employees. The indicators of firm growth in this study are financial growth, which implies an increase in the revenue of the firms in question, market expansion, and improved service delivery in the building construction firms being studied.

Statement of the Problem

Building construction firms are crucial to Kenya's economic growth, job creation, and provision of high-quality housing for the country's expanding population (Adero, 2020). Building construction firms are realising the need for Innovative Management practice (Munyao & Ngugi, 2023). Existing empirical data affirms that innovative management practices are critical in enhancing firm growth (Kiveu *et al*., 2019). According to a study by Otieno et al. (2019), Kenya's domestic industry would expand by 8.7 percent in 2017, and it will continue to expand at a stable rate until 2026, with an annual growth rate of 6.2 percent as a result of the role of the building construction sector. However, these firms face poor adoption of innovative management practices, leading to a decline in growth (Otiti, 2019). Furthermore, Nyoike (2019) affirms that there is an increasing necessity for innovation adoption for improved firm growth. Despite concerted efforts to grow, building construction firms continue to face challenges ranging from inadequate application of technological and product innovations to product and process innovations, which, in turn, lead to inferior firm growth (Gitau, 2019). Empirical data indicate that building construction firms have registered steadily declining growth since 2023. The Kenya

National Bureau of Statistics recorded a decrease in growth from 4.1% in 2022 to 3.0% in 2023, which was lower than the 6.7% growth rate in 2021. Studies in innovative management practices have demonstrated conceptual gaps affirmed by Mukuccia and Sasaka, (2019), Asewe (2023). Other studies have demonstrated contextual gaps as affirmed by Afzal & Lim (2022), Simiyu (2021), and Murenga and Njuguna, (2020).Andero, (2020), among others, confirms the existence of methodological gaps. This study, therefore, sought to answer the question, Is there a significant role played by innovative management practices on the growth of building construction firms in Machakos County, Kenya''

Study Objective

Examine whether there is a significant influence of Innovative Management Practices on the growth of building construction firms in Machakos County, with a specific focus on innovative technological, process, and product management practices. The study specifically sought to interrogate the effects of technological, product, and process innovation, and how these levels of innovative management affect the growth of firms in Machakos County.

Specific Objective

i) To find out the influence of technological innovation on the growth of building construction firms in Machakos County, Kenya.

ii) To establish the effect of product innovation on growth in building construction firms in Machakos County, Kenya.

iii) To determine the influence of process innovation on the growth of building construction firms in Machakos County, Kenya

2. Theoretical Review

2.1 Schumpeter's Theory of Innovation

This study is based on Schumpeter's Theory of Innovation and the Total Quality Improvement Theory as the theoretical foundation for its evaluation. Theory founded by Schumpeter in 1934. Schumpeter (1934) opines that innovation is the structural recreation and making necessary changes of business operationalization in a progressive manner in a

bid to gain more customer appeal through service and product or offering deliverable. Schumpeter identifies five types of innovation in business practice: applying new commercial or manufacturing methods to a product that has not been previously marketed, introducing new products with additional features to an existing product, expanding into new areas without having any kind of industry representation, looking for current inventory sources and the make-up of the industry by building or destroying the dominating position.

Naqbi *et al*. (2020) assert that every profit-driven, growth-oriented company should incorporate innovation into its strategic management practices, manufacturing processes, and new market development to achieve sustained firm growth. Inability or delay in appropriating innovation practices in business firms is likely to render a firm's products and services ineffective and unable to meet the modern customer demands (Otiti, 2019).While agreeing with Schumpeter, Otiti (2019), affirms that innovation in the According to Onguso (2019), innovation in the modern-day business world is entrenched in firm strategy implementation through product, market and technological innovation, and that firms with a viable set of innovation practices realise improved firm growth.

A number of criticisms have been levelled against Schumpeter's theory of innovation. Firstly, the theory ignores the element of uncertainty in the business environment. In the theoretical proposition, Schumpeter ignores the fact that there are other additional factors besides innovation contributing to business profitability. Secondly, Schumpeter's theory holds the view that in modern business practice, it is the entrepreneur who bears the risk, not the owners of capital. Furthermore, the theory does not consider profits as the reward for risk-taking. Schumpeter opines that the entrepreneur is never the risk bearer; rather, it is the one who provides credit for the business, bearing all the risks. Furthermore, the theory is a reflection of the potential effect of innovative strategic management practice application in the current study, by examining the influence of product, process and technological innovations on the growth of building construction firms in Machakos.

2.2 Resource-Based View Theory

The study has employed the Resource-Based View Theory to represent the dependent variable. RBV was founded on Selznick's (1957) work on the premise of distinctive

competencies and Penrose (1959), who defined the firm as a system of productive resources. Later, Wernerfelt (1984), in his initial studies on the Resource-based View of the firm, merged the ideas of Selznick and Penrose to develop the Resource-based perspective of the firm. The concept of the resource-based view was further developed by Barney (1991) in his paper, "From Resources to Sustained Competitive Advantage," whose framework and core definitions and constructs are widespread today. Resource-Based View introduces critical considerations in the field of Strategic Management, with furtherance on Reiteration Company's inbuilt capabilities useful for realizing sustainable advantage, which contribute to the growth of the firm. The RBV is a proposition about the link between firm endowments and the growth needed by firms. RBV highlights the significant interlinkages between resources and firm rents, and between resources and markets, thereby providing a moment for firm growth. The application of the RBV in the current study is that it helps explain sustainable strategic management practices as intangible resource endowments of a building construction firm to growth in the context of financial growth and market expansion.

2.3 Research Gaps

Results from a descriptive study by Murenga and Njuguna (2020) indicate that the success of SMEs, such as Horizon's office limited, is significantly influenced by continuous improvement, the use of technology, and employee engagement. However, conclusions from this research may not be replicated across all SMEs , as it is restricted to continuous improvement, technological adaptation, and employee engagement, leaving out other potentially critical factors. Furthermore, the study under review did not take into account other variables that could potentially influence service delivery in enterprises, especially in the building and construction industry, thereby creating a conceptual gap. Similarly, Kithinji (2022) affirms a positive correlation between innovation strategies and the firm growth of SMEs in Nairobi County. This notwithstanding, the scope of this research was restricted to SMEs, and as a result, the results could not be applicable to other contexts.

Naqbi *et.al*, (2019), in a systematic review of firms in Jordan, between 2010 and 2020, focused on studying process, market and exploitative orientation on firm performance. Findings revealed the existence of a significant positive correlation between the variables of study and the performance of Jordanian firms (Naqbi *et al.*, 2020). Nevertheless,

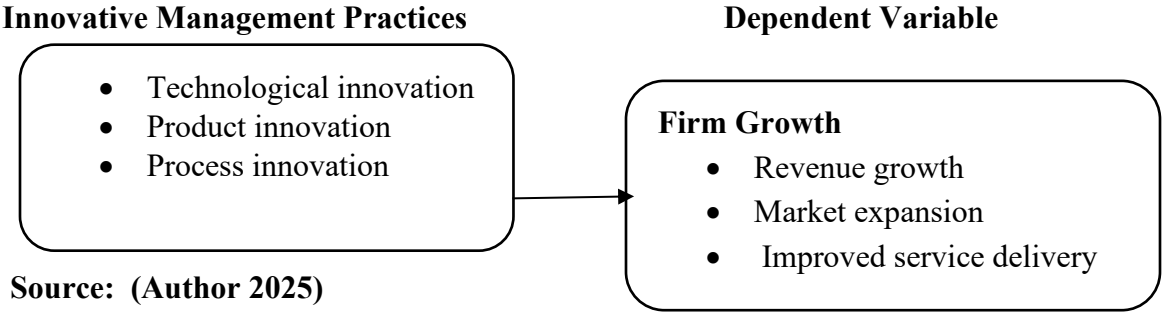
findings from this study could not be generalized due to contextual and conceptual gaps brought by the study context and the choice of variables in the study under review.

Onguso (2022) investigated the impact of innovative practices on the performance of tea enterprises in Kericho County and focused on three types of innovation: market, process, and technology in the tea industry. Findings from the study identified a conceptual gap, necessitating another study. Otiti (2019) undertook a study on the effect of innovative practices on civil construction firms in Kenya. The study examined the interplay between logistical improvements, productivity, and the effectiveness of civil construction companies in Kenya. Despite the finding of a positive correlation between the study's variables, an in-depth analysis revealed conceptual and contextual gaps.

2.4 Conceptual Framework

The conceptual framework in Figure 2.1 demonstrates the relationship between innovative management practices, dependent factors, firm growth and specific objectives, technological innovation, product innovation and process innovation practices. The conceptual framework provides a conceptualization of the study's independent variable, innovation management practice and dependent variable, firm growth.

Figure 2.1: Conceptual Framework
Independent Variable



Source: (Author 2025)

3.0 Research Methodology

A descriptive research design was suitable for this study because it made it possible to get a detailed analysis of the subjects of study, as well as its ability to give room for the study population to be adequately represented through the sample size while emphasizing on a

specific business sector necessitated the use of a descriptive research, thereby making it possible for the researcher to access a profile of the phenomena of interest (Sekaran & Bougie, 2016).

This study focused on building and construction firms in Machakos County that hold valid licenses and are registered with the National Construction Authority. The National Construction Authority (NCA, 2021) reported that, by the time this study was undertaken, 585 companies were operating in Machakos County, dispersed across all eight of the county's sub-counties. In each of the building and construction firms under this study, the subjects were the professionals in the companies, including lead engineers, the managing director's quantity surveyors, and accountants, to whom the questionnaires were administered.

Using cluster sampling, this study determined the optimal sample size from the 585 building construction firms targeted. The study's target subjects were grouped into building class categories according to the National Construction Authority's categories. The categories grouped were then used as the population of study clusters representing each category of building construction firms licensed to operate in Machakos County. From each cluster, a sample size to represent all the members in each specific cluster was selected using the formula $n = N / 1 + N (\alpha)^2$. From the calculation, using the formula, $n = N / 1 + N (\alpha)^2$, 237 respondents within the building construction firms made up the study's sample size. Where n is the sample size, N is the sample frame /population and α is the margin of error of 0.05. The sample size in this study, therefore, was 237 respondents.

3.1 Pilot Study

A pilot study is a critical tool in making sure the questions in the questionnaire tool are adequate and effective when used in the study(Saunders, *et al*., 2007). The questionnaire was subjected to a pilot study to do away with irrelevant items and replace them with relevant items to facilitate the collection of required data, with assurance of validity and reliability of the research instrument. The pilot study conducted in this research provided a clear picture of the actual research and proactively addressed potential problems with the questionnaire. (Sekaran & Bougie, 2016), and Cooper & Schinder (2014) state that a pilot

study should employ 10% of the population that has been sampled is adequate. This study used a pilot study employing 10% of the sample size of 237 study subjects randomly selected in all sub-counties of Machakos County. To ensure that the subjects involved in the pilot were not in the official study, the study ensured that the persons involved in the pilot study were excluded by providing a verbal instruction indicating that individuals who filled out the pilot questionnaire should not fill out the form in the official study.

4.0 Data Collection and Analysis

4.1 Demographics of the target population

Table 4.1 Analysis results on the response rate of the respondents

Category	Frequency	Percentage (%)
Responded	192	81.0
Not Responded	45	19.0
Total	237	100

Source: (Field data 2025)

Table 4.1.1 analysis results indicate that 81.0% of the questionnaires were filled and returned. This return rate exceeds the 50% threshold recommended by Babbie (2012) for an acceptable questionnaire return rate in scientific research. This affirms that the data collected in this study were sufficient and trustworthy for the study.

A guided closed-ended questionnaire was used because the respondents' literacy level was adequate for self-administration, time saving, and the tool would minimize bias by the respondents due to the fact that the questionnaire tool was uniform and it was filled independently without any influence or duress on the respondents. A five-point Likert scale was employed to guide respondents in answering the questionnaire.

The questions were measured using a five-point scale, where 1 meant strongly agree, 2 meant agree, 3 meant Neutral, 4 meant disagree, and 5 meant strongly disagree. The questionnaire underwent a pilot study, administered to 10% of respondents randomly selected. This was necessary so as to do away with irrelevant items and replace them with

relevant items to facilitate the collection of required data with assurance of validity and reliability of the research instrument.

The study selected 237 of the total 585 building construction firms. Questionnaires were administered individually using the drop-and-pick approach. Tests of validity and reliability were administered to justify the suitability of the research instruments. Face, content, and construct validity were tested, after which corrections were administered on the questionnaire.

A reliability test indicated that innovative management practice exhibited a satisfactory internal consistency reliability, with Cronbach's Alpha coefficients ranging from 0.7010 and therefore accepted. The analysis indicates that 81.0% of the questionnaires were filled out and returned, translating to 192 out of the optimal 237. Several questions were asked to gain the respondents' opinions on innovation management practices on the growth of building construction firms. Results from the analysis were presented in the form of inferential and descriptive statistics.

4.2 Findings and Discussions

Table 4.8 Analysis Results on influence of Innovation practice on growth of building construction firms in Machakos County.

Statement	1	2	3	4	5	Mean	Standard Deviation
Technological practices in service provision have influenced the growth of our construction firm	80 33.8%	90 38.0%	22 9.3%	0 0.0%	0 0.0%	4.30	0.67
Product innovation in service provision has led to the growth of our construction firm	53 22.4%	125 52.8%	10 4.2%	4 1.7%	0 0.0%	4.18	0.62

Statement	1	2	3	4	5	Mean	Standard Deviation
Adoption of process innovation in service provision influences the growth of our construction firm	92 47.91%	76 39.56%	18 9.38%	5 2.65%	1 0.5%	4.38	0.91
Aggregate						**12.86**	**2.2**

Source: (Field data 2025).

Regarding whether technological innovation in service provision has influenced the growth of building construction firms, 80 respondents (33.8% strongly agreed, 90 at 38.0% agreed, and 22 9.3% neutral). There were no respondents who disagreed or strongly disagreed. The mean and standard deviation of these indicators ranged from 4.18 to 4.38 and from 0.62 to 0.91, respectively. This suggests that innovative management practices play a significant positive role in driving the growth of building construction firms in Machakos County. These findings support the findings of Jean (2024), who posits that innovation practices enable firms to adapt to changing environments and help scale up growth opportunities.

Concerning the adoption of process innovation in service provision and its influence on the growth of building construction firms, 92 respondents (47.91% strongly agreed, 76 respondents (39.56% agreed, 18 respondents (9.38% were neutral, 5 respondents (2.65 % disagreed while 1 respondent (0.5% strongly disagreed. The mean and standard deviation were 4.38, 0.91respectively, the highest mean among the three indicators, but also the highest variability in responses. This indicates that process innovation is widely recognized as important for growth, although opinions vary more on its impact compared to product innovation. This finding is in alignment with the findings of Otiti (2019), who established that process innovations improve efficiency and sustainability in construction firms, thereby supporting firm growth.

Regarding whether product innovation in service provision has led to the growth of building construction firms, 53 respondents, representing 22.4%, strongly agreed. Additionally, 125 respondents, or 52.8%, agreed. A smaller group of 10 respondents, accounting for 4.2%, were neutral, while a few, 4 respondents or 1.7%, disagreed. The mean and standard deviation of this statement were 4.18 and 0.62, respectively. This suggests that product innovation is a significant factor contributing to the growth of building construction firms in Machakos County, aligning with Schumpeter's (1934) theory of innovation, which emphasises product innovation as essential for competitive advantage.

Findings on the influence of Innovation management practice on the growth of building construction firms in Machakos County were presented in the form of mean and standard deviation, respectively. The aggregate mean of 12.86 and the Standard deviation of 2.2, respectively, demonstrate that innovative management practices, particularly process innovation followed by technological innovation, are perceived to significantly influence the growth of building construction firms in Machakos County. These findings are in alignment with existing literature emphasizing innovation as a driver for firm growth and competitiveness (Naqbi et al., 2020; Onguso, 2022).

Table 4.11 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.789	0.622	0.616	0.446

Source: (Field data, 2025).

The correlation coefficient (R) of 0.789 indicates a significant interplay between the observed and predicted values of firm growth. Findings from the analysis suggest that the model fits the data well. The R-square value of 0.622 indicates that 62.2% of the variance in firm growth is explained by the predictor: Innovation management practice.

4.3 ANOVA

Table 4.12 ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	43.562	3	14.520	**48.24**	0.000

Model	Sum of Squares	Df	Mean Square	F	Sig.
Residual	56.582	188	0.301		
Total	100.144	191			

Source: (Field data, 2025).

Table 4.13 assesses the overall significance of the regression model predicting firm growth from the independent variables, including Innovation management practice, among other variables. The ANOVA results indicated that the regression model predicting firm growth from innovation management is statistically significant and therefore a meaningful predictor of firm growth in building construction firms in Machakos County.

Table 4.13 Coefficients for the regression

Predictor Variable	Unstandardized Coefficients (B)	Standard Error	Standardized Coefficients (Beta)	T	Sig.
(Constant)	0.832	0.210		3.962	0.000
Innovation Management	0.287	0.070	0.275	4.100	0.000

The regression results were used to predict firm growth based on Innovation Management. The unstandardized coefficients show that for every unit increment in Innovation Management practice (B = 0.287), firm growth obtained the same equivalent unit increment in equal measure. The contribution of innovative management practice relative to the model can be seen in the so-called standardized coefficients (Beta). Innovation Management has a coefficient of 0.287 (p = 0.000), indicating that a one-unit increase in innovation management practices leads to a 0.287-unit increase in firm growth, holding the other predictors constant. The equation represents innovation management practice variables;

$Y= 0.832+0.287+ \varepsilon$

The t value of all the innovative management practice predictors is well beyond the critical value of 2, with Innovation Management at (t = 4.100), which is statistically significant.

The p-value of 0.000 also indicates a significant correlation, affirming the conclusion that Innovative Management Practice contributes immensely towards the growth of building construction firms in Machakos County. These findings clearly indicate that innovation management practices, particularly in terms of technological adoption, product innovation and process innovation practices, significantly contribute to firm growth. The analysis showed that innovation management practices have a statistically significant impact on firm growth ($P < 0.05$), indicating that building construction firms in Machakos County are better positioned for growth.

5.0 Conclusion and Recommendation

The study sought to determine the role of innovative management on firm growth. On whether innovation management Practices influence firm growth, the study found that innovation management practices contributed positively to the firm growth of building construction firms in Machakos County. A majority of respondents agreed that innovative practices in service provision, product innovation, and process innovation positively influence firm growth.

Based on the affirmations by this study, it is recommended that building construction firms should adopt innovative management practices ranging from technological innovation, product innovation and process innovation to enhance product and process aspects of their product lines to spur firm growth. Policy makers and managers in government departments should make use of these findings to improve county or national government departmental planning. Specifically, the county and national governments should begin to appreciate the role of specific issues in innovative management practices to spur service and product delivery at their respective levels. Furthermore, scholars in the field of strategic management are advised to use these findings as part of an empirical data review to carry out more research on building and construction firms using different concepts. Scholars will use this piece of empirical literature to conduct further research on innovative management across a range of sectors in Kenya.

Further studies are recommended to examine other factors that may influence the growth of building construction firms, such as financial management practices, which may enhance operational efficiency and, in turn, firm growth in Machakos or Kenya in general.

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