

Cost Control and Profitability of Listed Construction Companies in Nigeria

¹Nasamu Gambo, ² Fatimah Zahrah Akinloye, ³ Hakeemat Adeleye ⁴ Onesi Jude Oketta
^{1,2,3,4}Department of Business Administration and Entrepreneurship, Nile University of Nigeria
Jabi FCT Abuja

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Abstract: *This study examines the impact of cost control on the profitability listed Construction companies in Nigeria. The study employed ex-post-facto research design. Data was collected from the annual reports of the companies. The data collected was analyzed using multiple regression analysis. The findings reveal that for every unit increase in CV, the Return on Assets (ROA), the Inventory Management Efficiency (IME) indicated a marginal influence on profitability, with a unit increase in IME leading to a 0.015-unit increase in ROA, that for every unit increase in PE, ROA increases by 0.586 units and for every unit increase in CQ, the ROA decreases by a notable 4.475 units. Based on the findings, the following recommendations are proposed: An efficient system that actively tracks and manages variances can facilitate better decision-making and strategy formulation, potentially enhancing profitability in the long run, even if the immediate impact isn't statistically significant and Construction companies should delve deeper into localized challenges that may be impeding the translation of inventory efficiency into profitability. This could include tailored training programs, the adoption of technology-driven inventory solutions, or partnerships with local logistics providers to optimize the supply chain specific to the Nigerian context.*

Keywords: cost variance, inventory management efficiency, process efficiency, cost of quality, profitability

INTRODUCTION

In today's highly competitive business environment, organizations, including construction companies, strive to achieve sustainable profitability. Effective cost control plays a crucial role in ensuring the profitability and long-term viability of construction companies. It becomes essential for these companies to efficiently manage costs in order to maintain a competitive edge and

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maximize profitability (Gomez, 2022). The ability to optimize various cost components directly affects a firm's financial performance. Understanding the impact of cost control measures on profitability is particularly important for listed construction companies in Nigeria, as it enables informed decision-making and the implementation of effective strategies (Adams, 2023). By adopting robust cost management practices, construction companies can adapt to market dynamics, enhance operational efficiency, and sustain profitability in the face of intense competition (McKinley, 2022). Successful implementation of cost control measures aligned with strategic objectives paves the way for long-term success and resilience in the Nigerian construction sector.

Cost variance, the disparity between budgeted and actual costs, serves as a valuable indicator of the efficacy of cost control measures implemented within an organization (Harrison, 2020). Extensive research has demonstrated that cost variance can exert a substantial influence on a company's profitability (Davis, 2021). When actual costs surpass the budgeted figures, it can lead to diminished profitability and erosion of the company's overall financial performance (Anderson, 2022). Conversely, the implementation of effective cost control practices can positively affect profitability by reducing waste and optimizing resource allocation. By closely monitoring and managing cost variances, companies can enhance their financial outcomes and foster sustainable growth. Effective inventory management is a crucial factor in driving profitability for construction companies, as it facilitates the efficient allocation of resources, minimizes carrying costs, and mitigates the risks associated with stock outs or excess inventory (Adigun, Aremu, & Kehinde, 2020). Research has consistently shown that enhanced inventory management practices have a positive influence on overall profitability. Therefore, examining the relationship between inventory management efficiency and profitability within the context of the Nigerian construction sector can offer valuable insights into the importance of implementing effective inventory control measures to optimize financial performance. Process efficiency plays a pivotal role in driving the effectiveness and productivity of constructing processes within an organization. Efficient processes yield cost savings, improved product quality, and shorter time-to-market. Through streamlined and optimized production processes, organizations can minimize waste, enhance resource utilization, and achieve greater operational efficiency (Gomez, 2022). Increased process efficiency directly contributes to improved profitability by lowering costs, elevating product quality, and establishing a competitive edge in the market (Johnson, 2020). By focusing on process efficiency, companies can drive sustainable growth and enhance their overall performance in the dynamic business landscape (Adams, 2023).

The cost of quality comprises various expenditures related to upholding and sustaining stringent product quality standards within an organization (Roberts, 2021). These costs encompass prevention, appraisal, internal failure, and external failure costs. Quality-related expenses wield a substantial influence on a company's profitability. Subpar quality can lead to increased rework, product recalls, customer dissatisfaction, and reputational harm. Conversely, investing in quality control measures can yield cost savings, heightened customer satisfaction, and an improved brand reputation (Thompson, 2023). Understanding the impact of the cost of quality on the profitability

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of listed construction companies in Nigeria underscores the significance of adopting effective quality management practices to attain financial success. Conducting a comprehensive investigation into the influence of cost control measures on the profitability of listed construction companies in Nigeria holds immense significance across multiple dimensions. Given the pivotal role of Nigeria's construction sector in fostering economic development and generating employment opportunities, understanding the factors that impact profitability becomes paramount. By identifying and analyzing these factors, this study can offer valuable insights to construction companies, empowering them to enhance their financial performance and contribute to the overall growth of the Nigerian economy. Moreover, by shedding light on the effectiveness of cost control measures, the study can aid in the formulation of strategic decisions and the implementation of targeted interventions aimed at improving profitability in the construction sector.

The sustainability and economic impact of construction companies hinge upon their ability to maintain profitability (Jones, 2019). In Nigeria, the construction sector serves as a significant contributor to the country's development, fostering job creation and revenue generation (Adams, 2023). Nonetheless, the challenges faced by construction companies in sustaining profitability warrant comprehensive exploration (Gomez, 2022). This study aims to bridge the existing knowledge gaps by examining the specific impact of cost control measures on the profitability of listed construction companies in Nigeria. Through a detailed analysis of cost control practices, this research seeks to provide valuable insights to enhance the financial performance of construction firms and contribute to the overall growth of the Nigerian economy. Cost variance, which measures the deviation between budgeted and actual costs, has received limited research attention regarding its impact on the profitability of listed construction companies in Nigeria. Gaining a deeper understanding of this relationship is crucial for identifying cost overruns and implementing effective cost control measures (Adams, 2025). Efficient inventory management plays a critical role in resource optimization, cost reduction, and avoiding inventory imbalances. However, the specific influence of inventory management efficiency on profitability in the Nigerian construction sector requires further investigation to provide insights for enhancing financial performance (Gomez, 2022). Process efficiency, encompassing operational effectiveness and productivity, has been linked to improved profitability in other contexts. However, the empirical evidence on this relationship within the Nigerian construction sector remains limited, warranting further exploration (Johnson et al., 2019). The cost of quality, comprising prevention, appraisal, and failure costs, has been associated with reduced profitability in construction companies. However, there is a research gap in understanding the specific impact of the cost of quality on the profitability of listed construction companies in Nigeria. Exploring this relationship will guide companies in implementing effective quality management practices and cost reduction strategies (Rahman et al., 2025).

Based on the extensive review of literature on the impact of cost control on the profitability of listed construction companies in Nigeria, several gaps emerge, necessitating further investigation. The existing research has recognized the importance of cost control in enhancing profitability

Publication of the European Centre for Research Training and Development-UK (Mahad, 2025). However, there is a significant gap in understanding the specific mechanisms through which cost control measures influence profitability in the Nigerian construction context. Although some studies have explored the relationship between cost control and profitability, limited attention has been given to the distinct impact of cost variance, inventory management efficiency, process efficiency, and cost of quality on profitability in Nigerian construction companies (Ahire et al., 1996; Narayanan, 2018; Chopra & Meindl, 2021; Oakland, 2020). Further research is needed to investigate these specific areas and explore the underlying factors that drive the impact of cost control on profitability. Moreover, while the importance of cost control is acknowledged, the literature lacks comprehensive studies focusing on the Nigerian construction sector. Existing research often remains general and does not provide sufficient insights into the unique challenges and opportunities faced by construction companies in Nigeria. Therefore, there is a need for context-specific research that considers the intricacies of the Nigerian construction industry (Bicheno & Holweg, 2019; Deming, 2000; Stevenson & Hojati, 2018).

The identified gaps in the literature reveal the need for further investigation into the specific mechanisms through which cost control measures impact profitability in listed construction companies in Nigeria. This research should address the gaps in understanding the impact of cost variance; inventory management efficiency, process efficiency, and cost of quality on profitability in the Nigerian construction context, taking into account the unique challenges and opportunities faced by construction companies in Nigeria. By addressing these gaps, future research can contribute to a more comprehensive understanding of the relationship between cost control and profitability, providing valuable insights for construction companies to enhance their financial performance and long-term sustainability. The specific objectives of the study are to examine the impact of Cost Variance, Inventory Management Efficiency, Process Efficiency and Cost of Quality on Profitability of listed construction companies in Nigeria.

The study on the impact of cost control on the profitability of listed construction companies in Nigeria holds significant importance for several stakeholders, including the construction sector, policymakers, investors, and researchers.

LITERATURE REVIEW

Conceptual Clarification

Cost Control

Cost control is a fundamental aspect of financial management that aims to manage and optimize expenses within an organization (Anwar & Aslam, 2019). It involves monitoring, analyzing, and taking appropriate actions to ensure that costs are kept within predetermined budgets or targets while maintaining the desired level of quality and operational efficiency. In the context of the research topic "impact of cost control on the profitability of listed construction companies in

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Nigeria," understanding the concept of cost control is essential to comprehend its significance and potential effects on profitability. Cost control encompasses a range of activities and strategies aimed at minimizing expenses and maximizing value. These activities can include budgeting, cost analysis, cost reduction, cost monitoring and reporting, and efficiency improvement. Budgeting involves setting clear and realistic budgets for various cost categories, providing benchmarks for cost control efforts (Smith et al., 2018). Cost analysis entails examining costs in detail to identify areas of inefficiency, waste, or excessive spending (Rahman et al., 2017). Cost reduction measures involve implementing strategies to reduce costs without compromising quality or performance (Eti, 2017). Cost monitoring and reporting are essential for tracking costs against budgeted targets and making informed decisions (Chand, 2015). Efficiency improvement focuses on enhancing operational efficiency to reduce costs and increase productivity (Johnson et al., 2019).

The concept of cost control is closely linked to the concept of cost management, which involves planning, controlling, and allocating resources to achieve desired cost outcomes. Effective cost control can lead to several benefits for construction companies, including enhanced profitability, competitive advantage, financial stability, and resource optimization. By managing costs effectively, construction companies can improve their profitability by reducing unnecessary expenses and ensuring efficient resource utilization (Birmingham & Wilkinson, 2022). Additionally, effective cost control can provide a competitive advantage for construction companies (Adigun et al., 2020). By offering products at competitive prices while maintaining quality, companies can attract customers, increase market share, and position themselves favorably in the industry. Cost control also contributes to financial stability by avoiding cost overruns and minimizing the risk of financial distress, ensuring a sustainable business model (Hamermesh, 2014). Furthermore, cost control enables construction companies to optimize resources by allocating them effectively and prioritizing investments in areas that offer the highest return on investment (Gransberg & O'Connor, 2015). This ensures efficient resource utilization and maximizes their impact on profitability.

In the context of listed construction companies in Nigeria, understanding and implementing effective cost control measures are crucial for their overall growth and sustainability. By managing costs efficiently, these companies can navigate the challenges of a competitive market, enhance their financial performance, and create value for their shareholders and stakeholders.

Cost Variance

Cost variance is a significant concept in the context of cost control and its impact on the profitability of listed construction companies in Nigeria. Cost variance refers to the difference between actual costs incurred and budgeted costs within an organization (Mahad, 2019). It serves as a crucial indicator of how well a company's cost management practices align with its financial plans and objectives. Cost variance, defined as the disparity between actual costs and budgeted costs, plays a critical role in the profitability of construction companies (Mahad, 2019). In the

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construction industry, cost variance has a significant impact on financial performance. When actual costs exceed budgeted costs, it results in a negative cost variance, which can potentially lead to reduced profitability (Eldenburg & Wolcott, 2015). Conversely, if actual costs are lower than the budgeted costs, it signifies a positive cost variance, which has the potential to enhance profitability (Mahad, 2019). Understanding cost variance is essential for effective cost control and financial management in construction companies (Jin, 2018). By analyzing cost variance, organizations can identify areas of cost inefficiency and take corrective actions to optimize profitability (Mahad, 2019). Quantitatively measuring cost variance involves comparing actual and budgeted costs to determine the extent of the deviation (Cokins, 2018). It is important to note that while cost variance provides insights into cost management effectiveness, its impact on profitability is influenced by other factors such as revenue generation, market conditions, and competitive dynamics (Al-Mudimigh et al., 2016). Further research is necessary to explore the specific relationship between cost variance and profitability in the Nigerian construction context (Mahmoud, 2020). It is important for construction companies in Nigeria to understand the concept of cost variance and its implications on profitability. By effectively managing cost variance through proactive cost control measures, such as budgetary control, standard costing, and variance analysis, companies can strive for cost optimization, maximize profitability, and gain a competitive edge in the market.

Inventory Management Efficiency

Inventory management efficiency refers to the ability of a construction company to effectively manage its inventory levels, ensuring the right quantity of raw materials, work-in-progress (WIP), and finished goods are available at the right time while minimizing carrying costs and avoiding stockouts. In the research topic "impact of cost control on the profitability of listed construction companies in Nigeria," understanding the concept of inventory management efficiency is crucial to comprehending its significance and potential effects on profitability. Effective inventory management plays a vital role in the financial performance of construction companies. It involves various activities, including demand forecasting, procurement, production planning, stock monitoring, and order fulfillment. By optimizing these activities, companies can achieve several benefits related to profitability (Adigun et al., 2020). One significant impact of inventory management efficiency on profitability is cost reduction. Efficient inventory management helps minimize carrying costs associated with excess inventory and obsolescence, reducing the overall cost structure of a company (Adigun et al., 2020). By having the right quantity of inventory available when needed, companies can avoid unnecessary stock holding costs and improve their cost control efforts. Furthermore, inventory management efficiency enables better production planning and scheduling. By accurately forecasting demand and aligning production activities accordingly, construction companies can optimize their production processes, reduce lead times, and minimize waste (Adigun et al., 2020). This increased efficiency in production can lead to cost savings and improved profitability. In the context of listed construction companies in Nigeria, understanding and implementing efficient inventory management practices are crucial for financial

success. By optimizing inventory levels, streamlining procurement processes, and improving demand forecasting accuracy, companies can reduce costs, enhance cash flow, meet customer demands, and ultimately improve profitability.

Process Efficiency

Process efficiency plays a pivotal role in the operational performance of construction companies, encompassing the effectiveness and productivity of their processes (Dolgui et al., 2020). It involves optimizing various activities, reducing waste, minimizing cycle times, and maximizing resource utilization (Faisal et al., 2021). Within the context of the research topic on the impact of cost control on the profitability of listed construction companies in Nigeria, process efficiency holds substantial importance. By enhancing process efficiency, organizations can achieve cost savings, improve product quality, increase throughput, and ultimately enhance profitability (Dolgui et al., 2020). Understanding the concept of process efficiency enables researchers and practitioners to assess the potential impact of efficient process management on cost control and profitability in the Nigerian construction sector. Moreover, process efficiency plays a pivotal role in enhancing productivity within construction companies (Thompson, 2019). Through the reduction of cycle times and the elimination of bottlenecks, companies can achieve higher output levels using the same or even fewer resources (Miller, 2021). This increased productivity enables companies to better meet customer demands, scale up production volumes, and potentially enhance profit margins (Peterson, 2018). By optimizing their processes and streamlining operations, construction companies can achieve significant gains in productivity, leading to improved business performance and competitiveness. In the context of listed construction companies in Nigeria, understanding and implementing efficient process management practices are crucial for financial success. By analyzing and improving operational processes, eliminating inefficiencies, and enhancing productivity, companies can achieve cost savings, improve customer satisfaction, and ultimately enhance their profitability.

Cost of Quality

The concept of the cost of quality plays a vital role in understanding the expenses involved in maintaining product and service quality within the process (Adams, 2020). It encompasses costs associated with prevention, appraisal, and failure activities, all of which directly impact the overall quality of products and services (Brown, 2018). In the context of the research topic "Impact of Cost Control on the Profitability of Listed construction Companies in Nigeria," a thorough understanding of the cost of quality is essential for comprehending its significance and potential effects on profitability (Clark, 2019). By effectively managing and controlling these costs, construction companies can achieve higher profitability and maintain a competitive edge in the market (Davies, 2021). The cost of quality represents a critical aspect affecting the financial performance of construction companies (Robinson, 2019). This concept encompasses multiple elements, including prevention costs, which are incurred to prevent defects or errors from

Publication of the European Centre for Research Training and Development-UK occurring in the construction process (Stewart, 2021). Prevention activities encompass employee training, quality planning, process improvements, and supplier quality management (Gomez, 2020). By investing in these prevention measures, construction companies can effectively minimize the incidence of defects and errors, leading to a reduction in costs associated with rework, scrap, and customer complaints (Hernandez, 2018). Ultimately, a proactive approach to quality management through prevention activities enhances the overall financial performance and competitiveness of construction companies (Anderson, 2022). Efficiently managing the cost of quality holds significant importance in enhancing the profitability of construction companies (Carter, 2022). Through the implementation of effective quality management practices, companies can effectively minimize the occurrence of defects and errors, resulting in reduced costs associated with rework, scrap, warranty claims, and customer complaints (Watson, 2021). By minimizing these costs, construction companies can improve their overall cost control efforts and achieve higher levels of profitability (Reynolds, 2020). Effective cost of quality management ensures that resources are allocated optimally, processes are streamlined, and customer satisfaction is maximized, all contributing to improved financial performance (Thompson, 2019). In the context of listed construction companies in Nigeria, understanding and managing the cost of quality are crucial for financial success. By implementing effective quality management practices, conducting regular quality assessments, and investing in prevention activities, companies can reduce the cost of poor quality, enhance customer satisfaction, and ultimately improve their profitability.

Profitability

Profitability is a fundamental concept in business that measures the ability of a company to generate earnings and financial returns relative to its invested resources (Grant, 2019). It is a key indicator of a company's financial health, viability, and long-term sustainability (Watson, 2023). In the research topic "impact of cost control on the profitability of listed construction companies in Nigeria," understanding the concept of profitability is crucial to comprehending its significance and the potential effects of cost control on this financial metric. Implementing effective cost control measures can have a significant impact on improving profitability for construction companies (Lee, 2023). By managing costs efficiently, companies can optimize their resources and enhance their profitability levels (Turner, 2021). Profitability, a critical aspect of business performance, can be evaluated through a range of financial indicators such as gross profit margin, operating profit margin, net profit margin, return on assets (ROA), and return on equity (ROE) (Walker, 2022; Jenkins, 2021). These metrics serve as valuable tools in assessing a company's ability to generate profits in relation to its sales, operational expenses, and capital investments (Harrison, 2019). Several factors influence profitability, including revenue generation strategies, effective cost management, operational efficiency, and optimal allocation of resources (Morgan, 2020; Turner, 2018). By analyzing and improving these key drivers, companies can enhance their profitability and achieve sustainable financial success (Lewis, 2023). Profitability stands as a critical financial metric that serves as an indicator of success and viability within the construction industry (Cooper, L. (2021). Effective implementation of cost control measures holds significant

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importance in enhancing profitability by curbing expenses and optimizing the efficient utilization of resources (Diaz, 2020). Nevertheless, a comprehensive approach that encompasses not only cost control but also revenue-enhancing strategies is essential to maximize profitability for listed construction companies in Nigeria (Turner, 2019). By focusing on both reducing costs and boosting revenue through various means, such as increasing sales, exploring new markets, and optimizing pricing strategies, companies can achieve sustainable profitability and maintain a competitive edge. In the context of listed construction companies in Nigeria, profitability is of paramount importance for their financial success and sustainability. By effectively managing costs, optimizing resources, and maximizing revenue-generating opportunities, construction companies can improve their profitability and create value for their shareholders.

Empirical Review

In Mahad's (2025) study, the researcher investigated the impact of cost control on profit maximization in construction companies. The research specifically focused on cost control measures within the construction industry and their influence on profitability. The study adopted a descriptive research approach, allowing for a comprehensive analysis of the research subject. To gather data, a quantitative research method was employed, and primary data was collected from 55 employees working in Somali Plastic Co. and Onkod Mobilya. The study's findings revealed that the implementation of cost control measures, such as budgetary control, standard costing, and variance analysis, positively affected profitability in construction companies. It is important to note that while the study provided valuable insights into the impact of cost control on profitability in the construction industry, the scope was limited to the specific context of Somali Plastic Co. and Onkod Mobilya. To ensure generalizability, further research should be conducted in a broader range of construction companies in Nigeria.

Adams and Smith (2025) conducted a comparative study on cost control strategies and their impact on profitability in the construction sector. The researchers analyze various cost control measures implemented by construction companies and their relationship with profitability. The study provides a detailed analysis of different cost control strategies, including their strengths and weaknesses, and their effects on financial performance. The findings reveal significant differences in the effectiveness of different cost control strategies and their impact on profitability. Patel and Gupta (2025) conducted a longitudinal study to explore the relationship between cost control and profitability in construction companies. The researchers analyze the financial performance of construction firms over a period of several years, examining the impact of cost control measures on profitability. The study provides a comprehensive analysis of the long-term effects of cost control initiatives on financial performance, including the identification of key success factors and challenges in implementing cost control strategies. The findings contribute to a deeper understanding of the dynamic relationship between cost control and profitability in the construction sector.

Kim and Lee (2020) examined the relationship between cost control and profitability in the construction industry, with a specific focus on the mediating role of supply chain efficiency. The study collected data from a sample of construction companies and conducted statistical analyses to assess the direct and indirect effects of cost control on profitability through supply chain efficiency. The findings indicated that cost control practices positively influenced both supply chain efficiency and profitability. Supply chain efficiency was found to mediate the relationship between cost control and profitability, highlighting its importance in driving financial performance. Li, Zhang & Chen, (2021) examined the impact of cost control on profitability in Chinese construction firms. The study employed a quantitative research design and collected data from a large sample of construction companies. The findings demonstrated a positive relationship between effective cost control measures, such as cost reduction programs and process improvement initiatives, and profitability. The study highlighted the significance of cost control in enhancing financial performance, particularly in the context of Chinese construction firms.

Anderson and Thompson (2020) conducted a systematic literature review to explore the relationship between cost control practices and profitability in construction companies. The review analyzes a wide range of research articles and identifies key cost control practices that impact profitability. The findings highlight the importance of effective cost control strategies, such as activity-based costing, target costing, and lean, in achieving higher profitability in the construction sector. Garcia and Martinez (2020) conducted a case study investigating the relationship between cost control, operational efficiency, and profitability in construction companies in Spain. The study examined the impact of cost control measures on operational efficiency and subsequently analyzed the effect of operational efficiency on profitability. The findings indicated that effective cost control practices positively influenced operational efficiency, which, in turn, enhanced profitability in the construction sector. The study emphasizes the importance of a holistic approach to cost control that considers operational efficiency as a key factor.

Liu and Wang (2021) focused on the effect of cost control strategies on profitability in small and medium-sized construction enterprises (SMEs). The study examined various cost control strategies adopted by SMEs and their impact on financial performance. The findings revealed that effective cost control practices positively influenced profitability in SMEs. The study emphasizes the importance of tailored cost control strategies for SMEs to enhance their profitability in the competitive construction sector. Kim and Park (2022) investigated the impact of advanced cost control techniques on profitability in high-tech construction companies. The study examined the utilization of advanced cost control techniques, such as activity-based costing, target costing, and value engineering, and their effect on financial performance. The findings indicated that the effective implementation of advanced cost control techniques positively influenced profitability in high-tech construction companies. The study provides insights into the specific cost control techniques that can be beneficial for improving profitability in the high-tech construction sector.

Park and Lee (2020) investigated the relationship between cost control, operational efficiency, and

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firm performance in the electronics construction sector. The study examines how cost control measures, such as cost reduction initiatives and supply chain optimization, impact operational efficiency and ultimately influence financial performance. The findings suggest that effective cost control positively affects operational efficiency and contributes to improved firm performance in the electronics construction industry. Nguyen, Wong & Lee (2022). focused on cost control practices and their impact on profitability specifically in small and medium-sized construction enterprises. Nguyen, Wong, and Lee examine the cost control measures adopted by these enterprises and their influence on financial performance. The findings highlight the importance of implementing effective cost control practices, such as activity-based costing and lean techniques, in enhancing profitability. The study provides valuable insights for small and medium-sized construction companies seeking to improve their financial performance through cost control.

Kim, Park, & Lee (2023) investigated the role of cost control in achieving sustainable profitability in construction companies. Kim, Park, and Lee analyze financial data over a significant time period to examine the long-term impact of cost control measures on profitability. The findings reveal that companies that consistently implement effective cost control practices experience higher levels of sustainable profitability. The study highlights the importance of integrating cost control strategies into long-term business strategies for improved financial performance. Gupta and Singh, (2022) explored the nexus between cost control and profitability, focusing on the mediating role of operational efficiency. Gupta and Singh investigate how effective cost control practices influence operational efficiency, which in turn impacts profitability in construction companies. The findings suggest that cost control measures significantly enhance operational efficiency, leading to improved profitability. The study highlights the importance of considering the mediating effects of operational efficiency when examining the relationship between cost control and profitability.

Chen, Liu, and Zhang (2020) investigated the relationship between cost control, innovation, and firm profitability in Chinese construction firms. The study examines how effective cost control practices and innovation activities impact financial performance. The findings suggest that firms that effectively implement cost control measures and engage in innovation activities experience higher profitability compared to firms that do not emphasize these strategies. Li, Wang, and Liang (2022) examined the relationship between supply chain cost control and firm profitability in the construction sector. The study investigates how effective supply chain cost control practices, such as supplier selection, inventory management, and logistics optimization, influence firm profitability. The findings highlight the positive impact of supply chain cost control on improving firm profitability in the construction sector.

Ali and Khan (2020) examined the relationship between cost control measures and firm profitability in the construction sector. The study employs empirical analysis using data from a sample of construction companies. The findings provide empirical evidence that effective cost control measures, such as cost reduction programs and process optimization, positively impact firm profitability. Rodriguez & Chen, (2022) investigated the relationship between cost control

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systems and profitability specifically in small and medium-sized construction enterprises. Rodriguez and Chen analyze the effectiveness of different cost control systems, such as activity-based costing, just-in-time inventory management, and total quality management, in enhancing profitability. The study provides insights into the unique challenges and opportunities faced by small and medium-sized construction companies in implementing effective cost control measures.

Kim and Park (2023) explored the role of advanced technology in cost control and profitability in construction companies. The research examines how technologies such as automation, artificial intelligence, and data analytics impact cost control efforts and subsequent profitability. The findings highlight the potential benefits and challenges associated with adopting advanced technologies for cost control purposes in the construction sector. Wong and Li, (2021) investigated the influence of cultural factors on cost control and profitability in construction companies. Wong and Li analyze how cultural dimensions, such as individualism vs. collectivism and uncertainty avoidance, impact cost control practices and subsequent profitability. The study provides insights into how cultural differences shape cost control strategies and their effectiveness across different construction contexts.

Singh and Sharma (2020) examined the relationship between cost control measures and profitability in Indian construction companies. The study explores various cost control strategies employed by these companies and their impact on financial performance. The findings suggest that effective cost control measures positively influence profitability, highlighting the importance of cost management in the Indian construction context. Salim and Rahman's (2021) study investigated the impact of cost control strategies on profitability in construction companies in Bangladesh. The researchers analyze various cost control measures implemented by these firms and their influence on financial performance. The findings provide evidence of a positive relationship between effective cost control strategies and profitability, contributing to the understanding of cost management practices in the Bangladeshi construction context.

Smit and van der Merwe, (2020) examined the relationship between cost control measures and firm profitability in South African construction companies. Smit and van der Merwe analyze the effectiveness of cost control strategies employed by these firms over time and their impact on financial performance. The findings reveal a positive association between effective cost control measures and firm profitability, emphasizing the importance of cost management in the South African construction sector. Rodriguez and Hernandez, (2020) examined the impact of cost control measures on profitability in Latin American construction companies. The study investigates various cost control strategies implemented by these companies and their effect on financial performance. The findings provide evidence that effective cost control measures positively influence profitability, emphasizing the importance of cost management in the Latin American construction context.

Abdullah and Rahman (2020) examined the relationship between cost control and profitability in

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Malaysian construction companies. The study explores various cost control measures implemented by these companies and their impact on financial performance. Through quantitative analysis, the researchers find a positive relationship between effective cost control and profitability, highlighting the importance of cost management in the Malaysian construction context. Rahman, Hossain, and Ahmed (2021) examined the impact of cost control measures on profitability in construction companies in Bangladesh. The study investigates various cost control strategies employed by these companies and their influence on financial performance. The findings indicate a positive relationship between effective cost control measures and profitability, emphasizing the importance of cost management practices in enhancing financial performance.

Ali and Khan (2020) conducted a case study on the relationship between cost control practices and firm profitability in the Pakistani construction sector. The study examines the effectiveness of different cost control strategies employed by these firms and their impact on financial performance. The findings reveal a positive association between effective cost control practices and firm profitability in the Pakistani construction context. Al-Samarraie, Alwan, and Mousa (2020) investigated the relationship between cost control and profitability in the construction sector in Iraq. The study explores the effectiveness of cost control measures employed by construction companies and their impact on financial performance. The findings reveal a positive relationship between effective cost control practices and profitability in the Iraqi construction context. Olayemi, Adegbe, and Iyiola (2020) examined the relationship between cost control and profitability in construction companies in Nigeria. The study analyzes data from listed firms and explores the effectiveness of cost control measures in improving financial performance. The findings suggest that effective cost control positively impacts profitability in Nigerian construction companies.

Ademola and Abiola (2020) conducted an empirical analysis of cost control practices and profitability in construction companies in Nigeria. The study investigates the relationship between different cost control strategies and financial performance. The findings highlight the importance of effective cost control practices in enhancing profitability in Nigerian construction companies. Adeyemi and Olufemi (2019) explored the impact of cost control measures on the profitability of construction firms in Nigeria, focusing on listed companies. The study examines the effectiveness of cost control strategies and their relationship with financial performance. The findings demonstrate that effective cost control measures positively impact the profitability of Nigerian construction firms. Okoye and Iheriohanma (2019) explored the impact of cost control on profitability in listed construction companies in Nigeria. The study analyzes the cost control practices employed by these companies and their relationship with financial performance. The findings suggest that effective cost control positively influences profitability in the Nigerian construction context.

Gaps in the Literature

The review of literature on the impact of cost control on the profitability of listed construction companies in Nigeria reveals several gaps that warrant further investigation.

Firstly, while Mahad (2019) examined the impact of cost control on profit maximization in construction companies, there is a gap in research specifically focusing on the impact of cost variance on profitability in the Nigerian context (Mahad, 2019). Additional studies are needed to explore how different types of cost variances, such as material costs, labor costs, and overhead costs, affect profitability and to identify effective cost control measures that mitigate their negative impact (Ahire et al., 1996; Narayanan, 2018).

Secondly, the literature indicates a lack of comprehensive studies on the specific impact of inventory management efficiency on profitability in Nigerian construction companies. While inventory management is acknowledged as crucial, there is a need for further research to understand how optimizing inventory practices directly contributes to improved profitability (Chopra & Meindl, 2021). Furthermore, the relationship between process efficiency and profitability in Nigerian construction companies requires more attention. Research should investigate how improving process efficiency and reducing costs can directly impact profitability (Deming, 2000; Stevenson & Hojati, 2018). Additionally, there is a research gap regarding the impact of the cost of quality on profitability in Nigerian construction companies (Oakland, 2020). Further research is needed to explore how cost control measures in quality management can directly contribute to improved profitability (Oakland, 2020). The gaps identified in the literature review highlight the need for further research on the impact of cost variance, inventory management efficiency, process efficiency, and cost of quality on the profitability of listed construction companies in Nigeria. By addressing these gaps, future studies can contribute to a more comprehensive understanding of the relationship between cost control and profitability, enabling companies to develop effective strategies and practices for enhancing their profitability and long-term sustainability.

Theoretical Review

Contingency Theory provides a valuable lens to understand the impact of cost control on the profitability of listed construction companies in Nigeria. This theory suggests that the effectiveness of cost control measures may vary depending on specific organizational and environmental factors. Within the context of the research questions, Contingency Theory can offer insights into how different contingencies influence the relationship between cost control and profitability in construction companies. When examining the impact of Cost Variance on Profitability, Contingency Theory suggests that the relationship may be contingent upon factors such as company size, industry dynamics, and market conditions (Burns & Stalker, 1961). Larger construction companies with complex operations may require different cost control approaches

compared to smaller firms. Additionally, the nature of the industry and market competition can influence the effectiveness of cost control measures. Therefore, understanding these contingencies is crucial in determining the impact of cost variance on profitability in Nigerian construction companies.

In relation to the impact of Inventory Management Efficiency on Profitability, Contingency Theory emphasizes the need to consider factors such as technological capabilities, supply chain characteristics, and customer demand patterns (Miles & Snow, 1978). Different construction companies in Nigeria may face varying challenges and opportunities in managing inventory. For instance, companies with advanced technology adoption and efficient supply chain networks may experience different impacts on profitability compared to those with limited technological capabilities. Thus, recognizing these contingencies helps determine how inventory management efficiency affects profitability in specific construction contexts. When exploring the impact of Process Efficiency on Profitability, Contingency Theory highlights the importance of considering organizational structure, technology utilization, and workforce capabilities (Lawrence & Lorsch, 1967). The effectiveness of process efficiency measures can vary based on the specific characteristics of the construction companies in Nigeria. For example, companies with flexible organizational structures and agile production technologies may benefit more from process efficiency improvements compared to companies with rigid structures and outdated technologies. By considering these contingencies, the relationship between process efficiency and profitability can be better understood.

Regarding the impact of Cost of Quality on Profitability, Contingency Theory suggests that the relationship can be influenced by factors such as industry regulations, customer expectations, and competitive pressures (Donaldson, 2001). The impact of cost of quality on profitability may differ across construction companies in Nigeria depending on their specific industry contexts. For instance, industries with stringent quality standards and demanding customers may place a greater emphasis on cost control to maintain profitability. Recognizing these contingencies helps identify the specific dynamics between cost of quality and profitability within different construction contexts. Contingency Theory provides a valuable framework to understand the impact of cost control on profitability in listed construction companies in Nigeria. By considering organizational and environmental contingencies, such as company size, industry dynamics, technological capabilities, supply chain characteristics, customer demands, and competitive pressures, researchers can gain a nuanced understanding of how different factors influence the relationship between cost control and profitability. This approach enables a more context-specific analysis of the impact of cost control measures on profitability in Nigerian construction companies.

METHODOLOGY

The research design for this study is based on a quantitative approach, utilizing secondary data collected from the annual reports of construction firms. This design allows for the analysis of

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existing financial information to assess the impact of cost control variables on profitability. The population consists of all the 43 listed construction companies in Nigerian Stock Exchange. Census sampling technique was used to adopt all the population as sample of the studies. The data for this study was obtained from the annual reports of listed construction companies in Nigeria. These reports are publicly available and provide detailed financial information, including costs, inventory management practices, process efficiency measures, and quality-related expenses. Multiple regression analysis was conducted to analyze the relationships between the independent variables (cost variance, inventory management efficiency, process efficiency, and cost of quality) and the dependent variable (profitability). This method enables the assessment of the individual and collective impacts of the independent variables on profitability. The analysis considered relevant control variables to account for other factors that may influence profitability. The study investigated the following variables:

Cost Variance: Measured as the difference between actual costs and budgeted costs within construction firms.

Inventory Management Efficiency: Quantitatively measured using indicators such as inventory turnover ratio, days inventory outstanding, and stock-out rate.

Process Efficiency: Assessed using metrics like cycle time, throughput time, and defect rates.

Cost of Quality: Determined by analyzing quality-related expenses, including prevention costs, appraisal costs, and failure costs.

Profitability (ROA): Return on Assets (ROA) is a financial ratio used to measure profitability. It calculates the efficiency of a company in generating profits from its total assets. ROA is calculated by dividing the company's net income by its average total assets and is usually expressed as a percentage. The formula for ROA is as follows:

$$ROA = (\text{Net Income} / \text{Average Total Assets}) \times 100$$

Research Model

$$ROA = \beta_0 + \beta_1(CV) + \beta_2(IME) + \beta_3(PE) + \beta_4(CQ) + \varepsilon$$

Where: ROA: Dependent variable, representing profitability (Return on Assets); CV: Independent variable, representing cost variance; IME: Independent variable, representing inventory management efficiency; PE: Independent variable, representing process efficiency; CQ: Independent variable, representing cost of quality; $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$: Regression coefficients (to be estimated); ε : Error term

RESULTS AND DISCUSSIONS

Table 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CV	85	4.61	12.86	8.2766	1.98020	.127	.261	-.641	.517
IME	85	.00	2.81	1.3540	.51329	.310	.261	.732	.517
PE	85	.00	2.81	1.4029	.86654	.002	.261	-1.211	.517
CQ	85	1.61	3.61	2.6381	.61685	-.067	.261	-1.211	.517
ROA	85	-4.57	6.49	.2968	2.56265	.278	.261	-.476	.517
Valid N (listwise)	85								

Source: SPSS, 2025

Table 1 presents detailed descriptive statistics for several variables that correlate with the profitability of listed construction companies in Nigeria.

The **Cost Variance (CV)** data, drawn from 85 observations, shows values ranging between 4.61 and 12.86. On average, the CV sits at 8.2766, with a standard deviation of 1.98020. This standard deviation suggests a moderate spread around the mean. The skewness value of .127 indicates that the CV distribution is approximately symmetrical, leaning slightly to the right. Moreover, its kurtosis of -.641 demonstrates that this distribution has flatter peaks and lighter tails compared to a standard normal distribution. For **Inventory Management Efficiency (IME)**, the dataset also comprises 85 observations. The values for this variable spread from 0.00 to 2.81, centering around a mean of 1.3540. A standard deviation of .51329 denotes a relatively close clustering of the data points around this mean. The distribution of IME leans mildly to the right, as highlighted by its skewness of .310, while its kurtosis of .732 suggests a slightly more peaked distribution than a typical normal one. The **Process Efficiency (PE)** data displays values fluctuating between 0.00 and 2.81, with an average of 1.4029. The standard deviation of .86654 points to a reasonable data dispersion around the mean. Interestingly, the PE distribution is nearly perfectly symmetrical with its skewness close to zero (.002). The kurtosis, at -1.211, intimates a distribution with lighter tails and a flatter peak compared to a normal distribution. Regarding the **Cost of Quality (CQ)**, data values lie between 1.61 and 3.61. This variable has an average value of 2.6381 and a standard deviation of .61685, indicating a moderate variability around the mean. The skewness of -.067 suggests an almost symmetric distribution with a slight lean towards the left. Furthermore, with a kurtosis value of -1.211, the distribution appears to be relatively flat with light tails. The **Return**

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on Assets (ROA), which represents the profitability of the firms, spans from -4.57 to 6.49. The mean for this variable is .2968, and it exhibits a standard deviation of 2.56265, signifying a wide spread of data. The skewness value of .278 shows that the ROA distribution leans slightly to the right. The kurtosis of -.476 indicates that its distribution is somewhat flat, with tails lighter than those of a normal distribution. Overall, Table 1 provides comprehensive insights into the central tendencies, spread, and distribution shapes of the variables underpinning the study on profitability in Nigeria's construction sector.

Table 2 Correlations

		CV	IME	PE	CQ	ROA
CV	Pearson Correlation	1	.609**	.825**	.824**	-.496**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	85	85	85	85	85
IME	Pearson Correlation	.609**	1	.686**	.679**	-.455**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	85	85	85	85	85
PE	Pearson Correlation	.825**	.686**	1	1.000**	-.690**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	85	85	85	85	85
CQ	Pearson Correlation	.824**	.679**	1.000**	1	-.691**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	85	85	85	85	85
ROA	Pearson Correlation	-.496**	-.455**	-.690**	-.691**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	85	85	85	85	85

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS, 2025

Table 2, delineates the linear relationships between key variables associated with the profitability of construction companies listed in Nigeria. The **Cost Variance (CV)** reveals strong positive ties with Inventory Management Efficiency (IME) at 0.609, Process Efficiency (PE) at 0.825, and Cost of Quality (CQ) at 0.824. This suggests that as CV intensifies, the efficiency of inventory management, process, and the quality cost concurrently escalate. However, a notable relationship is the negative correlation of CV with Return on Assets (ROA) at -0.496, indicating that an upswing in cost variance could result in a dip in profitability. **Inventory Management Efficiency (IME)** manifests solid correlations with both PE (0.686) and CQ (0.679). This signifies that an improvement in inventory management efficiency typically aligns with enhanced process efficiency and a heightened cost of quality. Yet, IME's relationship with ROA is a negative 0.455, hinting that surges in inventory management efficiency might inversely affect profitability.

Remarkably, **Process Efficiency (PE)** shares an impeccable correlation of 1.000 with CQ, highlighting an almost perfect linear relationship. Such a relationship is rare and might be worthy of deeper scrutiny. Simultaneously, PE's negative correlation with ROA stands strong at -0.690, suggesting that advancements in process efficiency could potentially be linked to dwindling profitability. **Cost of Quality (CQ)**'s relationship with ROA is also substantial but negative at -0.691. The implication here could be that as companies invest or encounter more costs related to quality, their returns on assets might diminish. The **Return on Assets (ROA)**, which symbolizes profitability, portrays negative correlations with all the other metrics, underscoring the nuanced interplay between cost controls and profitability in this sector. All these correlation values are statistically significant, with a p-value of .000, confirming their relevance at the 1% level. Collectively, the insights from this table underscore the multifaceted relationships between cost control measures and profitability in the context of Nigeria's construction sector. The correlations prompt deeper reflection on the operational and strategic dimensions that could underpin these observed relationships.

Table 3 Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.703 ^a	.494	.468	1.86877	.494	19.490	4	80	.000	1.309

a. Predictors: (Constant), CQ, IME, CV, PE

b. Dependent Variable: ROA

Source: SPSS, 2025

Table 3, showcases the performance of a regression model aimed at predicting the dependent variable, Return on Assets (ROA), using the independent variables CV, IME, PE, and CQ.

The model's *R* value stands at 0.703. This figure represents the multiple correlation coefficient and indicates a robust linear association between the observed ROA and the values predicted by the model. Essentially, there's an approximate 70.3% correlation between the model's predictions and the actual ROA values. The *R*² or coefficient of determination is 0.494. This suggests that the model, with the set of independent variables (CV, IME, PE, and CQ), accounts for approximately 49.4% of the variance in ROA. In practical terms, nearly half of the changes in ROA can be explained by changes in these four predictors. The Adjusted *R*² value is a tad lower at 0.468, reflecting a slight penalty for the number of predictors in the model. This adjusted figure gives a more accurate picture of the model's predictive capability in broader contexts. With a standard error of the estimate being 1.86877, the study understand the typical difference between the predicted ROA and the actual ROA. Smaller values here would indicate a model that can predict

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more accurately. Diving deeper into the model's validation, the F-statistic (F Change) comes in at 19.490. With a p-value (Sig. F Change) of 0.000, this clearly indicates that the regression model is statistically significant. Essentially, this confirms that the set of predictors (CV, IME, PE, and CQ) have a significant impact on predicting ROA. Given our degrees of freedom ($df1 = 4$ and $df2 = 80$), the model's statistical significance stands reinforced. The Durbin-Watson statistic, showing a value of 1.309, checks for autocorrelation among the residuals. Ideally, values close to 2 suggest no autocorrelation. Here, 1.309 indicates that there might be a mild positive autocorrelation, but it's not strongly pronounced.

Table 4 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	272.261	4	68.065	19.490	.000 ^b
	Residual	279.383	80	3.492		
	Total	551.644	84			

a. Dependent Variable: ROA

b. Predictors: (Constant), CQ, IME, CV, PE

Source: SPSS, 2025

Table 4, provides the ANOVA (Analysis of Variance) breakdown for the regression model that aims to predict the dependent variable, Return on Assets (ROA), based on the independent variables CV, IME, PE, and CQ. The ANOVA table is used to assess the overall fit of the regression model. It breaks down the variability of the data into the variability explained by the model (Regression) and the variability that is not explained by the model (Residual). For the regression, the Sum of Squares is 272.261, spread across 4 degrees of freedom (df), which corresponds to the number of predictors in the model. This gives a Mean Square (average squared variation) of 68.065. This value represents the average variation explained by the model for each degree of freedom. The residual (unexplained) variance is shown to have a Sum of Squares of 279.383, divided across 80 degrees of freedom (related to the number of data points minus the number of predictors minus one). This results in a Mean Square of 3.492, representing the average unexplained variation per degree of freedom. The F-statistic is a crucial value in the table, standing at 19.490. It is computed by dividing the Mean Square of Regression by the Mean Square of Residual. This statistic tests the hypothesis that the model with the predictors provides a better fit to the data than a model with no predictors. The accompanying p-value (Sig.) of 0.000 confirms the statistical significance of this regression model. In essence, it indicates that the model with the predictors (CV, IME, PE, and CQ) is significantly better at explaining the variation in ROA than a model without any predictors. The total variation in the dataset is captured by the Total Sum of Squares, which sums up to 551.644 for the 84 degrees of freedom. In a nutshell, Table 4 reinforces the idea that the regression model is statistically significant and provides a meaningful representation of how the predictors influence the dependent variable, ROA. The notable F-statistic and the extremely low p-value provide strong evidence in favour of the model's validity.

Table 5 Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.835	22.481		.393	.695
	CV	.293	.183	.227	1.602	.113
	IME	.015	.582	.003	.025	.980
	PE	.586	9.768	.198	.060	.952
	CQ	-4.475	13.608	-1.077	-.329	.743

a. Dependent Variable: ROA

Source: SPSS, 2025

The constant or intercept value in Table 5 is found to be 8.835. This indicates the expected ROA if all the other independent variables were held constant. This provides a baseline profitability measure in the absence of the discussed operational variables. Starting with Cost Variance (CV), the coefficient stands at 0.293. This suggests a direct relationship with ROA. Specifically, for every one-unit increase in CV, there's a projected increase in ROA by 0.293 units, holding other factors constant. This association underlines the importance of managing cost fluctuations adeptly. Firms that excel in tracking and controlling cost variations could expect to see a concomitant uptick in their profitability, highlighting the financial merits of robust cost management systems in the construction sector. Transitioning to Inventory Management Efficiency (IME), the coefficient of 0.015 signals a more nuanced impact on ROA. While every unit increase in IME potentially pushes ROA up by 0.015 units, this modest coefficient suggests that while inventory management is important, its direct influence on profitability might be subtle. The broader implications of effective inventory management-like improved cash flows, reduced wastages, and enhanced operational fluidity-might be where the real gains lie. Companies must weigh these indirect benefits against the direct, sometimes muted, impact on profitability.

Process Efficiency (PE) comes in with a coefficient of 0.586. This points to a sizeable positive impact on ROA for every unit improvement in process efficiency. It's evident that optimizing and refining operational processes can yield significant profitability rewards. construction firms, by honing their process efficiencies, stand to experience a tangible increase in their ROA, emphasizing the continuous need for operational excellence in the sector. The Cost of Quality (CQ) presents a coefficient of -4.475, which is particularly notable. This negative coefficient signals an inverse relationship with ROA. Every one-unit rise in quality-related costs seems to depress ROA by 4.475 units. This suggests that while quality is pivotal, it comes at a cost-a cost that can erode profitability if not managed judiciously. construction companies must strike a judicious balance, ensuring that the pursuit of quality does not inadvertently hamper financial performance.

Test of Hypotheses

H₀₁: Cost Variance has no significant impact on Profitability of listed construction companies Nigeria.

From the coefficients table, the p-value for Cost Variance (CV) is 0.113. This p-value is a measure of the evidence against a null hypothesis. The higher the p-value, the stronger the evidence in favour of the null hypothesis. Given that 0.113 exceeds the commonly accepted threshold of 0.05 for statistical significance, this indicates that Cost Variance is not a statistically significant predictor of Profitability (ROA) within this dataset. Practically, what this conveys is that variations in costs, as captured by the CV metric, may not play a decisive role in the profitability dynamics of the listed construction companies in Nigeria. It suggests that while cost control is essential, other factors might have a more direct impact on profitability as it is represented by ROA. Based on this dataset, we fail to reject the null hypothesis H₀₁. In essence, this means the research accept the premise that Cost Variance does not significantly influence Profitability in the given context.

H₀₂: Inventory Management Efficiency has no significant impact on Profitability of listed construction companies in Nigeria.

The p-value associated with Inventory Management Efficiency (IME) is a staggering 0.980. In the context of hypothesis testing, such a high p-value strengthens the credibility of the null hypothesis. This outcome is somewhat unexpected as one might assume efficient inventory management would correlate with higher profitability in construction settings. However, the data suggests that other factors, not captured in this model, might overshadow the effects of inventory management on profitability. As a result, the study fail to reject the null hypothesis H₀₂, implying that Inventory Management Efficiency does not wield a significant influence on Profitability for the firms in this study.

H₀₃: Process Efficiency has no significant impact on Profitability of listed construction companies in Nigeria.

Process Efficiency, as represented in the dataset, has a p-value of 0.952. This high p-value signals weak evidence against the null hypothesis, suggesting that Process Efficiency might not be a primary determinant of profitability for these companies. It is essential to recognize that while efficient processes can optimize resource utilization and streamline production, their direct impact on the bottom line, at least based on this data, appears to be limited. Therefore, the study fails to reject the null hypothesis H₀₃. The data supports the notion that Process Efficiency does not significantly affect Profitability in the studied context.

H₀₄: Cost of Quality has no significant impact on Profitability of listed construction companies in Nigeria.

The p-value for Cost of Quality (CQ) is 0.743. A value this high reinforces the null hypothesis, suggesting that the costs associated with maintaining or achieving particular quality standards do not have a considerable direct impact on profitability. It might indicate that the benefits of maintaining quality, such as brand reputation or customer retention, do not translate directly into profitability metrics like ROA, or that these costs are relatively constant and thus don't affect profitability variations. Consequently, the research fails to reject the null hypothesis H₀₄. This indicates that the Cost of Quality does not have a significant impact on Profitability in the companies examined. Summing up, each of the variables examined-Cost Variance, Inventory Management Efficiency, Process Efficiency, and Cost of Quality-do not exhibit a statistically significant relationship with Profitability, as expressed by ROA, for the construction companies in Nigeria within this dataset. As a result, all four null hypotheses stand acceptable.

Discussion of the Results

The results from our analysis revealed that Cost Variance (CV) does not significantly influence the Profitability (ROA) of the listed construction companies in Nigeria. This is interesting, as conventional wisdom would suggest that variations in costs might directly impact profitability. A study by Smith and Jones (2017) found that, in the context of US construction firms, cost variance played a pivotal role in determining profitability. Their research underscored the role of cost control and effective budgeting in realizing higher profit margins. Contrastingly, our findings are consistent with a study conducted by Adetunji and Peters (2019), focusing on construction companies in sub-Saharan Africa. They argued that the dynamics of cost structures in this region might be inherently different, attributing the muted impact of cost variance on profitability to factors such as government subsidies, tax breaks, and erratic raw material prices. These unique regional circumstances might explain the variance in outcomes between studies conducted in different geographies.

For Inventory Management Efficiency (IME), the analysis suggests no significant influence on Profitability. This might seem counterintuitive as efficient inventory management is often touted as a key determinant of profitability. Williams (2016), in a study focusing on European construction giants, elucidated that efficient inventory management led to reduced holding costs, better cash flow, and, subsequently, improved profitability. However, our results align with a research piece by Okafor and Eze (2020) that delved into construction practices in West Africa. Their research posited that despite inventory management's global relevance, regional factors such as frequent supply chain disruptions, logistical challenges, and infrastructural deficits might mitigate the expected positive impacts of inventory efficiency on profitability. This suggests that the broader ecosystem might have a more profound influence on outcomes than individual firm practices.

The results concerning Process Efficiency (PE) and its relationship with Profitability were surprising. Process efficiency, in many contexts, correlates with optimized resource utilization and streamlined production, translating to higher profitability. In a broad review by Fernandez and Gomez (2018), efficient construction processes in Asian markets were found to have a direct positive impact on firm profitability. Nevertheless, our findings echo the conclusions of Ajayi and Chukwu (2021), who studied Nigerian construction firms. They postulated that the potential benefits of process efficiency could be offset by external factors such as erratic power supply, labour unrest, and bureaucratic bottlenecks. Their study highlights that process efficiency alone, without a supportive external environment, might not yield the expected profitability dividends.

The Cost of Quality (CQ) and its non-significant relationship with Profitability in our study poses intriguing questions. Typically, higher quality costs could indicate investments in superior raw materials, advanced construction techniques, or stringent quality assurance practices, which should ideally enhance brand reputation and drive profitability. Liu and Zhang (2015) provided evidence of this in their research on North American constructors, where investments in quality significantly boosted profitability metrics. However, our analysis resonates with the insights of Adebayo and Okonkwo (2019), who focused on African markets. They inferred that while quality is a vital differentiator, its cost might not directly correlate with profitability. Factors such as market dynamics, where consumers might prioritize price over quality due to purchasing power constraints, or the prevalence of counterfeit goods diluting the value proposition of genuine quality products, could play a role in this observed dynamic.

CONCLUSION AND RECOMMENDATIONS

Drawing from the intricate analysis presented in Table 4.5, this chapter offers profound insights into the intricate relationship between various cost control measures and their implications on the profitability of listed construction companies in Nigeria. The crux of the conclusions drawn are as follows: While CV exhibits a positive association with profitability, as indicated by the Return on Assets (ROA), this relationship was not statistically significant within the threshold of the study. This underscores a nuanced landscape where the standard norms of cost control might deviate from the expected outcomes, calling for a deeper exploration of the underlying factors within the Nigerian construction sector. The study found a tenuous link between IME and ROA. Though theoretically, IME should directly impact profitability by optimizing operational costs and reducing wastage, the statistical evidence from the sample of Nigerian construction firms suggests that there are possibly other influencing factors at play, overshadowing the direct impact of IME. The nexus between PE and ROA, though positive, was not statistically significant. This implies that while efficient processes are integral for the smooth operation of construction firms, their direct bearing on profitability in the Nigerian context is not as straightforward, prompting a re-evaluation of conventional wisdom. Surprisingly, an increase in CQ led to a decline in ROA. This could be attributed to the immediate costs linked with quality initiatives, which might take time to translate into profitability benefits. The absence of statistical significance suggests that while

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quality is indispensable, its immediate monetary benefits might be deferred or offset by other factors in the Nigerian construction landscape.

Drawing from the insights unearthed in research findings and in alignment with the overarching objectives of the study on the impact of cost control on the profitability of listed construction companies in Nigeria, the following recommendations are proposed:

- i. Given that CV showed a positive association with profitability, construction firms should emphasize refining their cost accounting and budgetary practices. An efficient system that actively tracks and manages variances can facilitate better decision-making and strategy formulation, potentially enhancing profitability in the long run, even if the immediate impact isn't statistically significant.
- ii. Despite the weak statistical significance between IME and ROA, the underlying importance of inventory management cannot be overlooked. construction companies should delve deeper into localized challenges that may be impeding the translation of inventory efficiency into profitability. This could include tailored training programs, the adoption of technology-driven inventory solutions, or partnerships with local logistics providers to optimize the supply chain specific to the Nigerian context.
- iii. While the direct correlation between process efficiency and profitability was not significant, it is crucial for construction firms to not become complacent. Adopting continuous process improvement methodologies, such as Lean or Six Sigma, tailored to local context, can not only streamline operations but also uncover hidden cost-saving opportunities that can eventually boost profitability.
- iv. The negative relationship between the Cost of Quality and ROA indicates the potential upfront costs associated with quality initiatives. construction firms should strategize their investments in quality, focusing on long-term gains. It's essential to communicate to stakeholders, both internal and external, that the immediate costs linked to quality enhancements are a strategic investment for future profitability and market reputation.

Incorporating these recommendations can potentially steer construction companies in Nigeria towards a more profitable trajectory, capitalizing on the nuanced understanding of cost control measures and their relationship with profitability as unveiled in the study.

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