

Implication of Cost Structure on Financial Sustainability in Light of Corporate Governance of Listed Manufacturing Companies in Kenya

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doi: <https://doi.org/10.37745/ejaifr.2013/vol13n24376>

Published March 09, 2025

Citation: Opanyi R.O. (2025) Implication of Cost Structure on Financial Sustainability in Light of Corporate Governance of Listed Manufacturing Companies in Kenya, *European Journal of Accounting, Auditing and Finance Research*, Vol.13, No. 2, pp.,43-76

Abstract: *Kenya's manufacturing sector has made strides; however, it continues to grapple with a range of financial difficulties issues to enhance the sector's competitiveness and sustainability in the long run. Understanding optimal cost structures and their variability is vital for financial sustainability. This study explores the significance of cost structure in light of corporate governance and its impact on the financial sustainability of manufacturing companies in Kenya. The study used quantitative research design and panel data analysis to examine the relationships between cost structure and financial sustainability in light of corporate governance. The targeted population included manufacturing, construction and allied publicly listed companies at Nairobi Securities Exchange. Out of the 13 listed companies 11 were analyzed that were actively trading at the NSE for the period of the study. The results suggest that production cost and operation cost was 71.70% and 39.38% to sales respectively which is higher than the average in Africa region. Not to mention than Africa region has the highest cost structure in the world. On average, production costs contribute more to the cost structure compared to operational costs, highlighting their importance in managing total expenses. The results on financial sustainability showed an average O-Score of 2.8025 suggests that manufacturing industry demonstrate moderate financial sustainability, but a subset of firms' faces financial risk. The findings shows that Cost structure (both production and operation cost) is statistically significant and negatively affects financial sustainability. In addition, the results indicates that Corporate Governance does not appear to have a statistically significant relationship with financial sustainability. The results also suggests that corporate governance moderates the relationship between cost structure and the financial sustainability. Further, the finding indicates that the joint significance of the independent variables (Cost Structure and corporate governance) is not statistically significant. The high production and operational costs in Kenya pose a significant challenge to the growth and competitiveness of its manufacturing sector. However, by adopting a combination of strategic initiatives-ranging from technology adoption and local sourcing to infrastructure development and policy support-Kenyan*

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manufacturers can reduce costs and enhance their position in both regional and global markets. Collaborative efforts between the government, private sector, and development partners will be critical in addressing systemic inefficiencies and unlocking the potential of the manufacturing sector. This will not only improve competitiveness but also drive industrialization, economic growth, and job creation in Kenya.

Keywords: cost structure, corporate governance, financial sustainability

INTRODUCTION

Financial sustainability is vital for long-term success and competitive advantage for any industry (Gicharu, Cheluget, & Issa, 2023). Cost structure and corporate governance play crucial roles in ensuring that companies not only survive but thrive amidst economic challenges. A well-defined cost structure, supported by strong governance practices, is essential for the financial sustainability of manufacturing companies. By promoting efficient cost management, risk mitigation, and stakeholder confidence, organizations can navigate economic challenges and achieve long-term success in a competitive landscape. As such, manufacturing companies must prioritize the alignment of their cost structures with effective corporate governance to enhance their financial resilience and sustainability.

Many countries that are now economic powerhouses utilized manufacturing as a cornerstone for their growth (Naudé & Szirmai, 2012). Manufacturing industries are pivotal to a nation's economic development, serving as drivers for other sectors, especially in developing economies (Adebawojo, 2023) Onodje & Farayibi (2020). The sector is viewed as fundamental to national economic growth and development. In countries like Kenya, financial sustainability in manufacturing is critical for making substantial contributions to national economic progress.

Sustainable manufacturing is essential for advancing industrialization, which is a prerequisite for meaningful economic growth. This sentiment is echoed in studies that emphasize the importance of manufacturing policies in leveraging available resources to enhance living standards (Uma et al. 2019). Many African nations are striving for industrialization, as noted in various policy statements (Naudé & Szirmai, 2012). However, African manufacturing remains in its infancy, hindered by infrastructural challenges, low productivity, a shortage of skilled labor, and insufficient capital investments (Gelb, Meyer, Ramachandran, & Wadhwa, 2017)

Despite these challenges, there have been notable successes in African manufacturing. According to KPMG Africa Limited (2014) Sector Report: Manufacturing in Africa. Countries like South Africa, Mauritius, and Morocco have made strides in sectors such as automobile production and textiles. For instance, Mauritius has transitioned from plantation agriculture to an export-oriented manufacturing sector, primarily focused on textiles and garments. In North Africa, Morocco and

Tunisia have attracted European manufacturers due to their established manufacturing bases and skilled workforces. West Africa's Nigeria is expected to see rapid expansion in its manufacturing sector, particularly in government-supported industries like cement and automobiles.

In East Africa, countries like Ethiopia, Rwanda, and Tanzania are making significant progress in manufacturing. Ethiopia, for example, has the potential to meet domestic demand while also being well-positioned for exports to European markets, supported by favorable labor conditions and climate (Gelb, et.al. 2017).

Overall, manufacturing production is increasing across Africa, though experiences vary by country (Ansu et al., 2016). Positive factors contributing to this growth include rising wages in Asia, improved policies, and reduced transport costs, which create opportunities for African nations to become labor-intensive manufacturing hubs (Balchin et al. 2016). Additionally, intra-African trade in manufactured goods is expanding, along with a gradual shift towards more technologically advanced manufacturing exports.

Despite these advancements, Africa's manufacturing activity remains low compared to other regions, and the share of manufacturing value added to GDP has been declining (Balchin et al. 2016). However, manufacturing production has nearly doubled in value over the past two decades. To seize the opportunities presented by global economic shifts, African countries must adopt consistent strategies to promote manufacturing, leveraging their natural advantages and the growth of regional markets (UNCTAD 2016). Without such strategies, many nations risk missing out on significant economic opportunities (Naudé & Szirmai , 2012).

Manufacturing Industry in Kenya

According to Republic of Kenya (1965) and Swainson, N. (1980), the growth and development of Kenya's manufacturing sector have been shaped by various policy interventions since independence in 1965, transitioning from early import substitution industrialization (ISI) to the current Kenya Vision 2030, which emphasizes regional and global manufacturing exports (Ngui D, Chege J., and Kimuyu P., 2016). This evolution reflects both achievements and challenges faced by the sector over the decades.

In the post-independence era (1960s-1970s), Kenya implemented ISI policies aimed at reducing reliance on imports. The government played a significant role in establishing parastatals and developing infrastructure. However, issues like inefficiencies and corruption in state-run enterprises began to emerge (O'Brien, D. C. 1975; Nyangito, H. O., & Okelo, J. 1998). The 1980s brought economic challenges due to external shocks such as the global oil crisis and droughts, prompting the adoption of Structural Adjustment Programs (SAPs) from the IMF and World Bank. While these aimed to liberalize trade and privatize state-owned firms, they exposed local industries to international competition prematurely, leading to many closures (Maxon & Ndege, 1995).

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The 1990s saw continued liberalization and privatization, which resulted in further strain on local manufacturers due to an influx of cheaper imports. The privatization process often suffered from corruption, limiting its effectiveness in improving manufacturing efficiency. In 2008, the launch of Vision 2030 aimed to position Kenya as a newly industrializing, middle-income country by 2030, highlighting the role of manufacturing in economic growth. Despite this focus, challenges like inadequate infrastructure, high energy costs, and political instability persisted (AMCHAM Kenya, 2022)

In 2017, the Big Four Agenda was introduced, prioritizing manufacturing among other sectors to enhance its contribution to GDP. However, ongoing issues such as access to finance, outdated technology, and competition from imports have hindered progress. The COVID-19 pandemic further complicated the sector's financial landscape, exacerbating existing challenges (UNIDO 2022).

Kenya's manufacturing sector faces several key challenges that hinder its growth and development (KPMG Africa Limited 2014). Access to finance is a major issue, with difficulty in obtaining affordable credit limiting expansion opportunities (Onjala, J. 2018). In addition, poor energy and transport infrastructure significantly increase production costs (Ateka, M., 2020). The Kenya Association of Manufacturers (KAM, 2018) has called on the government to take measures to reduce these burdens, particularly in the areas of utility and logistics costs. The regulatory environment is also a challenge, as a complex and frequently changing framework stifles innovation and creates uncertainty, discouraging long-term investment (Ikiara & Ndirangu, 2003). Although efforts to streamline the tax system are ongoing, high taxation levels have led to business closures, reduced consumer purchasing power, and increased unemployment.

Furthermore, fluctuations in the Kenyan shilling raise import costs, further straining manufacturers. Political and economic instability also undermine investor confidence, while security concerns often necessitate additional expenditures. Market dynamics, including high entry costs and competitive pressures, affect pricing and marketing strategies. Lastly, compliance with environmental regulations and corporate social responsibility initiatives adds to the financial burden faced by manufacturers. Kenya's inflationary environment, marked by a significant rise in commodity prices, compounds these challenges. The Kenya National Bureau of Statistics reported an inflation rate of 9.6% in October 2022, further squeezing manufacturers' margins.

Kenya's manufacturing sector has made strides; however, it continues to grapple with a range of financial difficulties rooted in economic policies, global trends, and internal challenges (World Bank, 2020). Comprehensive efforts are needed to address access to finance, infrastructure inadequacies, regulatory burdens, and taxation issues to enhance the sector's competitiveness and sustainability in the long run. Reducing operational costs is critical for manufacturers to thrive in a highly competitive market.

Problem Statement

Financial sustainability is paramount for any organization and cannot be overemphasized. It goes beyond short-term financial viability and emphasizes long-term stability, adaptability, and responsible financial practices. Cost structure in light of corporate governance are crucial determinants of the manufacturing industry's overall profitability and long-term viability. Companies that prioritize strategic cost management and financial discipline are better positioned to achieve sustained success and weather economic fluctuations. Kenya's manufacturing sector has made strides; however, it continues to grapple with a range of financial difficulties rooted in economic policies, global trends, and internal challenges. Efficient cost management is critical for manufacturers to thrive in a highly competitive market. Despite the significance of cost structure in determining the financial health of manufacturing firms, there is a gap in understanding how different cost structure impact long-term financial sustainability. Many firms struggle to strike a balance between costs structure that can optimize profitability while providing the flexibility needed to survive in uncertain market conditions. Furthermore, there have been inadequate studies on the effect of cost structure on financial sustainability of manufacturing companies in Kenya. Previous studies have not extensively covered the effects of these specific cost components on financial sustainability. The central questions explored in the research are: What constitutes the cost structure, and how does each component influence the financial sustainability of manufacturing companies in Kenya? Given the prominence that the manufacturing sector has been accorded in Kenya's development effort, its sluggish growth in the last few years is a matter of concern. This paper aims to ascertain the impact of the cost structure on the financial sustainability indicators in light of the corporate governance systems. The study targeted listed manufacturing companies in Kenya.

The general objective of this study is:

To ascertain the relationship between cost structure and financial sustainability in light of corporate governance in manufacturing sector.

The specific objectives of this study are:

- 1 To determine the impact of Cost component on financial sustainability of manufacturing companies.
- 2 To assess the impact of corporate governance on financial sustainability of manufacturing companies.
- 3 To evaluate the moderating effect of corporate governance on relationship between cost structure and financial sustainability of manufacturing companies.
- 4 To ascertain the joint effect of Cost structure and corporate governance on financial sustainability of manufacturing companies.

Significance of the Study

This study contributes to the literature by providing insights into how manufacturing firms can strategically manage their cost structures to ensure financial sustainability. This study provides valuable insights into how the cost of sales method, as a financial reporting tool, shapes the cost structure and financial sustainability of manufacturing firms. Understanding this relationship is crucial for managers, investors, and policymakers, as it directly impacts financial analysis, investment decisions, and strategic planning. By focusing on the interplay between costs structure, corporate governance, and market dynamics, the research offers practical recommendations for firms seeking to enhance profitability and financial resilience. Additionally, the findings is valuable for policymakers and industry stakeholders aiming to support the manufacturing sector's growth and stability in an increasingly complex economic environment.

Hypotheses

Ho₁: Cost structure has no significant effect on financial sustainability of manufacturing companies.

Ho₂: Corporate governance has no significant effect on financial sustainability of manufacturing companies.

Ho₃: Corporate governance has no significant moderating effect on relationship between cost structure and financial sustainability of manufacturing companies.

Ho₄: Cost structure and corporate governance has no significant joint effect on financial sustainability of manufacturing companies.

Theoretical Review

This section describes the theories that help businesses analyze and manage their costs more effectively, enabling them to make strategic decisions to enhance efficiency and competitiveness. The cost structures encompass various expenses that companies incur in the process of conducting their operations. Several theories and concepts help explain and analyze the factors influencing the cost structures. Each theory addresses different aspects of the cost structure of business, providing insights into cost structures, optimization strategies, and the overall economic rationale behind business operations.

Efficiency theory

Efficiency Theory has evolved to focus on resource optimization across both economic and business management fields. Vilfredo Pareto (1896) emphasizing operational efficiency for gaining competitive advantage. Efficiency Theory focuses on maximizing outputs while minimizing inputs, emphasizing operational efficiency to achieve long-term success. Efficiency Theory highlights how a firm's ability to optimize its cost structure directly affects its financial sustainability. Efficient cost management (e.g., lowering production costs, optimizing resource allocation) leads to better financial outcomes, such as profitability and liquidity.

Effective corporate governance is essential for ensuring efficient resource utilization. Strong governance frameworks ensure that the cost structure aligns with the firm's strategic goals, promoting transparency, accountability, and informed decision-making, all contributing to long-term financial sustainability.

The Theory suggests that companies with strong governance mechanisms are more likely to implement cost-saving strategies that enhance financial performance. For listed manufacturing companies in Kenya, corporate governance plays a critical role in ensuring efficient resource allocation, optimizing cost structures, and sustaining financial health over time. This theory ties into the study's objective of understanding how cost structures and governance practices influence financial sustainability in Kenya's manufacturing sector.

The efficiency theory highlights the importance of effective resource management in achieving optimal financial performance. It suggests that organizations should minimize costs while maximizing output or value, linking cost structure to financial sustainability. By optimizing cost structures, organizations can improve cost efficiency, resulting in higher profits or better financial health for non-profits. Efficient operational processes reduce costs and increase productivity, contributing to financial sustainability by minimizing waste and maximizing value.

A flexible and adaptable cost structure allows organizations to adjust to changes in the business environment, which is crucial for long-term sustainability. In contrast, rigid or inefficient cost structures make it difficult for organizations to cope with economic fluctuations or market changes. Efficient cost structures also ensure better resource allocation, directing funds toward value-generating activities and preventing wastage.

Investors assess cost structures to gauge a company's ability to generate sustainable returns. A lean and efficient cost structure boosts investor confidence, linking cost-effectiveness to long-term profitability. According to the efficiency theory, organizations that prioritize cost efficiency, operational flexibility, and prudent resource allocation are better positioned for financial sustainability. Adaptability and value delivery, while managing costs, are central to this theory.

Resource-Based View Theory

The Resource-Based View (RBV) theory highlights the strategic role of a firm's unique resources and capabilities in gaining a competitive advantage, leading to cost efficiencies and differentiation. Wernerfelt B. (1984) argued that a firm's internal resources are as important as external market conditions in determining its competitive advantage. According to RBV, competitive advantage stems from resources that are valuable, rare, and difficult for competitors to imitate. A cost structure built around these resources supports long-term financial sustainability by maintaining this advantage. This includes proprietary technologies, exclusive contracts, or unique processes that competitors find challenging to replicate without high costs.

RBV also stresses dynamic capabilities—the organization's ability to adapt and change its resource base in response to market conditions. Aligning the cost structure with dynamic capabilities ensures continued investment in innovation, enabling long-term financial sustainability. This adaptableness is essential in maintaining competitiveness.

Moreover, RBV suggests that cost structures should align with an organization's strategic objectives, directing resources toward activities that strengthen competitive advantage. A well-managed resource base minimizes risks related to resource disruptions, ensuring financial sustainability even in uncertain environments. Finally, RBV emphasizes continuous learning and innovation as key to sustaining competitive advantage, with cost structures supporting investments in these areas for long-term success.

Agency Theory

According to (Jensen & Meckling, 1976): the agency theory, explains the conflict of interest between principals (owners or shareholders) and agents (managers) in a corporate setting, focusing on how conflicts of interest may arise owing to divergent goals.

It plays a critical role in shaping financial reporting practices, addressing issues like information asymmetry, where managers often possess more knowledge about company operations than shareholders. This imbalance can lead to a lack of transparency and potential for opportunistic behavior by managers. Financial reporting, governed by standards from bodies like the Financial Accounting Standards Board (FASB) and International Financial Reporting Standards (IFRS), mitigates this issue by providing a framework for transparency and reducing information asymmetry.

Agency theory also identifies moral hazard, where agents may engage in risky or unethical behavior, such as manipulating financial statements. Regulatory standards are designed to prevent such practices. Moreover, incentive contracts tied to performance metrics like earnings per share (EPS) and return on equity (ROE) help align the interests of shareholders and management. To ensure the accuracy of financial reports, external mechanisms like audits are essential, providing independent verification and reducing the risk of misstatements. Regulatory bodies enforce transparency through financial reporting standards, ensuring that shareholders have access to accurate data for decision-making. Overall, Agency Theory helps improve corporate governance by addressing these conflicts and ensuring financial sustainability.

Strong corporate governance mechanisms help minimize agency costs by ensuring that management is accountable to shareholders, especially in listed manufacturing companies. This reduces inefficiencies and encourages decision-making that supports financial sustainability. Agency Theory implies that effective corporate governance can reduce the agency problem and ensure that cost structures are optimized, thus contributing to the long-term financial sustainability

Publication of the European Centre for Research Training and Development-UK of listed manufacturing firms in Kenya. This theory helps analyze how governance structures can influence decision-making related to cost control, ultimately impacting the financial health of the company.

Cost Structure

Cost is the measurement of economic resources sacrificed to achieve specific goals, and understanding cost structure is critical for businesses to make informed decisions, set prices, and manage resources efficiently (DeltaCPE, 2017). A cost structure refers to the various costs incurred by a business in its operations and how these costs are distributed across different elements of the business. The ability of analysing company costs becomes one of the most important premises of the effective cost management and understanding cost behavior is an essential element of cost management. Efficient cost management contributes to profitability, operational efficiency, competitive advantage, and long-term financial health. Companies that emphasize strategic cost control and financial discipline are better positioned to succeed and endure economic fluctuations.

The cost structure is essential in determining the financial sustainability of businesses, especially in the manufacturing industry (Adebawojo, 2023). It influences overall profitability and long-term viability. Different industries have unique cost structures, and businesses must tailor their cost analysis to their specific contexts (Norkina V F 2017; Burnashev T D, Vdovina S D 2018). Several authors have presented various views on the significance and classification of cost structure based on factors such as the primary activities of the enterprise, cost centers, technological processes, or profit types (Tuyakova , Sarsembaeva, Dyuzelbaeva , & Kukhar, 2018). Each classification has its own relevance depending on the objectives of the business.

Most essential feature of the cost analysis, is cost classification, where costs are classified into well-defined categories according to the particular characteristics. In manufacturing businesses, cost structure significantly impacts financial statements.

Costs are typically divided into manufacturing and non-manufacturing expenses, both of which influence different parts of the financial accounts. For example, Manufacturing costs affect the cost of goods produced, while non-manufacturing costs are reflected as current period expenses in the income statement (Garrison et al., 2010). This classification categorizes the costs based on the type of the consumed input. Other frequently used cost classification in management accounting is the general cost classification where the costs are classified into direct and indirect. Drury (2007) defines that direct costs are those costs that can be specifically and exclusively assigned identified with the particular cost object, while the indirect (overhead) costs cannot. Understanding these components is crucial for accurate financial reporting and decision-making in manufacturing firms.

Most existing studies have focused on classifying costs by behavior—fixed, variable, or mixed. However, this particular study examines the cost structure classified by function, as presented in the financial reports of manufacturing companies using the cost of sales method. The study classifies costs into prime/material and conversion costs (under cost of sales), distribution and administrative costs, and finance costs. This is in line with (Awotomilusi, Isaiah, & Esther, 2022) study. These classifications are essential in understanding the financial performance of manufacturing companies.

In conclusion, cost structure plays a critical role in determining financial sustainability, particularly for manufacturing companies (Ngugi, P. K., & Bwisa, H. M. 2013). Efficient cost management, tailored to a company's specific operational needs, helps in maintaining profitability, ensuring long-term viability, and gaining a competitive advantage. The study sheds light on how cost classifications according to function, rather than behavior, affect the financial sustainability of companies.

Corporate governance

Cadbury (1992) defined corporate governance as the systems, principles, and processes that guide the direction and control of companies. Defined by the CMA Act Cap 483A as the structure used to manage business affairs for enhancing prosperity and long-term shareholder value while considering stakeholders' interests, corporate governance plays a crucial role in linking cost structure with financial sustainability. By promoting transparency, accountability, and ethical conduct, it helps ensure effective resource management, risk mitigation, and decision-making, all of which are vital for long-term success.

A key aspect of corporate governance is balancing the interests of various stakeholders, including shareholders, management, employees, and customers (Pass, 2004; Lakshan and Wijekoon, 2012). It encourages communication and engagement with stakeholders, helping to explain decisions related to the cost structure, fostering trust and support. This alignment ensures that cost management strategies do not compromise long-term financial sustainability, which is critical for maintaining the confidence of stakeholders and ensuring continued success.

Corporate governance emphasizes accountability and transparency, particularly in financial reporting and decision-making. By making the cost structure visible to stakeholders and holding management accountable for financial decisions, governance frameworks help reduce the risk of financial mismanagement. This transparency reassures stakeholders that resources are being allocated wisely, thereby contributing to the financial sustainability of the organization.

The board of directors plays a central role in corporate governance by overseeing management and ensuring that strategic decisions align with the organization's financial goals (Tsifora & Eleftheriadou, 2007). The board reviews and approves strategic plans, budgets, and major financial

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decisions, preventing inefficiencies and ensuring that cost-related decisions support the organization's long-term viability.

Effective corporate governance is also about managing relationships between shareholders and management, ensuring there is no conflict of interest. A clear distinction between the roles of owners and managers can lead to better checks and balances, reducing the risk of managerial entrenchment. By clearly defining the roles of owners and managers, corporate governance fosters effective stewardship of resources, ensuring that shareholder value is maximized while meeting societal needs.

Good governance also involves risk management and internal controls, as well as ensuring transparency and disclosure. Regular financial reporting and risk management mechanisms help to maintain financial sustainability by preventing inefficiencies, minimizing risks, and ensuring that cost-related decisions are in the best interest of the organization. The oversight provided by the board helps align the cost structure with financial sustainability goals, ensuring prudent resource allocation.

The CMA's Code of Corporate Governance, established in 2015, requires listed firms to disclose governance practices and justify non-compliance, fostering an "Apply or Explain" principle that aligns companies with international standards. The code emphasizes transparency, accountability, shareholder rights, stakeholder engagement, and ethical standards.

In this study, corporate governance is operationalized through board operations and control, shareholder and stakeholder relations, accountability, risk management and internal control, transparency and disclosure and ethical standards. These elements are critical for moderating the relationship between cost structure and financial sustainability. A well-governed organization can manage its cost structure more effectively, ensuring long-term sustainability, minimizing risks, and maintaining ethical standards.

Thus, corporate governance establishes the framework for decision-making, resource allocation, and risk management, ensuring that a company's cost structure supports its long-term financial sustainability. By fostering transparency, accountability, and ethical practices, corporate governance helps organizations balance cost efficiency with the need to maintain stakeholder trust and achieve long-term success.

Financial sustainability

Financial sustainability refers to an organization's ability to generate enough income to cover its total costs while ensuring sufficient profit or surplus for future growth and development. For manufacturing firms, efficiently managing resources is essential to achieve financial sustainability. Osazefua (2020) defines financial sustainability as the capacity of a corporation to meet its

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operational and financial obligations, reduce financial risks, and maintain adequate earnings to finance expansion. Without financial stability, manufacturing firms risk losing profitability, growth, and competitive capacity, potentially leading to distress or failure (Leon & Cock, 2016).

Profit plays a crucial role in a firm's ongoing survival, and periodic profitability is critical to sustaining its operations (Umobong, 2015). Financial sustainability, therefore, is vital for the long-term survival and functionality of any organization. It encompasses a dynamic, multifaceted approach to managing financial resources, focusing not only on short-term financial viability but also on long-term stability, adaptability, and responsible financial practices. Achieving this balance between income generation, expenditures, and resource management ensures a firm's resilience and ability to adapt to changing circumstances.

Over the years, financial sustainability has been defined and measured through various lenses, such as asset sustainability, financial independence, and solvency. For instance, Zabolotny & Wasilewski (2019) describe financial sustainability as a firm's ability to create value for its owners and maintain operational continuity over the long term through an optimal mix of investments and financing sources. Financial sustainability for manufacturing companies can be assessed using different metrics, such as the Ohlson O-Score Model.

Essentially, financial sustainability requires a strategic and holistic approach, emphasizing long-term success through stable, adaptable, and responsible financial management. This principle is vital not only for businesses but also for individuals and organizations, ensuring enduring success and resilience amidst evolving challenges.

Cost Structures

Financial Sustainability

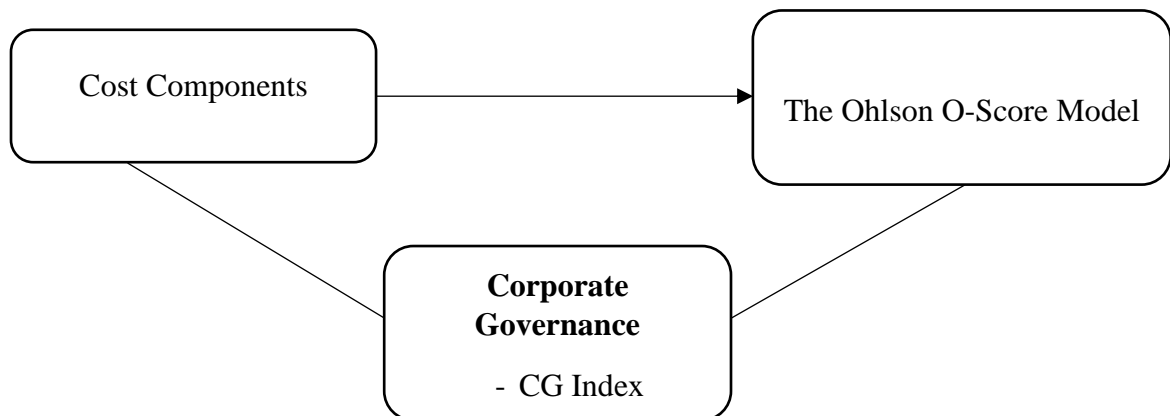


Figure 2.1: Conceptual Framework

Empirical Review

This section highlights the critical relationship between cost structures in achieving financial sustainability for manufacturing companies. In the manufacturing industry, cost management is vital for profitability, efficiency, and strategic flexibility. Technological advancements, global supply chains, and changing demand patterns have made understanding optimal cost structures essential for long-term financial sustainability. Companies must balance cost structures to compete effectively, especially in the globalized market where local firms face competition from overseas manufacturers.

The comparative average Cost component to Sales ratio varies by region due to differences in labor costs, energy prices, raw material availability, technology adoption, and supply chain efficiencies etc. (KPMG, 2020).

Table 2.1 Comparative Average Cost Component to Sales by Region

Region	Average Production Cost to Sales (%)	Key Influencing Factors	Average Operation Cost to Sales (%)	Key Influencing Factors
Africa	60%–70%	Higher raw material costs, limited technology, and higher logistics costs due to infrastructure constraints.	20%–30%	Higher logistical costs due to limited infrastructure. Challenges in economies of scale increase costs.
Asia	50%–60%	Competitive labor costs, advanced manufacturing technologies, and efficient supply chains (e.g., China, India).	10%–20%	Efficient supply chains and economies of scale. Lower wages and competitive service costs reduce operational expenses.
Europe	55%–65%	Higher labor costs but offset by advanced technology and automation; strict regulations can increase some costs.	20%–30%	High administrative and labor costs. Advanced marketing and distribution networks add to expenses.
North America	55%–65%	Balanced by high labor costs and strong efficiency due to automation and economies of scale.	20%–25%	Relatively high marketing and administrative costs.

Region	Average Production Cost to Sales (%)	Key Influencing Factors	Average Operation Cost to Sales (%)	Key Influencing Factors
South America	60%–70%	Dependence on imports for raw materials and machinery, as well as fluctuating currencies, increase costs.	25%–35%	Efficient logistics and economies of scale help contain costs. Limited infrastructure increases logistics costs. Import dependency for goods and services raises operational expenses.
Middle East	50%–60%	Lower energy costs and government subsidies, but higher reliance on imports for skilled labor and technology.	10%–20%	Lower energy and utility costs. Subsidized industries and government support for key sectors reduce expenses.

Ineffective cost control has posed significant challenges to the survival and competitiveness of manufacturing firms worldwide, emphasizing the need for efficient cost management to remain financially sustainable. Effective governance mechanisms ensure robust cost control policies, adherence to budgets, and financial planning, ultimately enhancing profitability. Corporate governance aligns financial objectives with operational capabilities, supporting long-term growth and promoting financial sustainability. Additionally, governance frameworks often include performance evaluation metrics that help identify inefficiencies in cost structures and allow for timely corrective measures.

Prior scholar have emphasize that a balanced cost structure enhances financial sustainability(Gunarathne & Samudrage, 2018). While Johnson (2018) advocates for continuous improvements in planning and operations. In Kenya, the market is saturated with international and domestic products, and manufacturing companies face pressure to control production costs amid high business operation expenses. Proper cost structure control can lead to reduced production costs and higher profitability, positioning firms to remain competitive.

Research by Kumar & Vimala (2016) on manufacturing companies highlighted variations in cost structures, affecting financial performance. High costs in raw materials, power, fuel, employee wages, and administration reduced profitability. The study found that strategic cost management could positively impact sustainable financial performance. Similarly, Oyewo and Ajibolade (2019)

Publication of the European Centre for Research Training and Development-UK focused on Nigerian manufacturing companies and found that cost structure significantly impacts financial performance. They identified challenges in adopting and implementing cost structure management as a competitive strategy.

Research by Adebawojo O. (2023) on manufacturing companies in Nigeria, the study concluded that Cost Management affect Financial Sustainability. The findings showed that manufacturing firms should establish formidable cost management strategies that will identify and control all cost drivers such that operational costs are reduced to ensure profitability and enhance financial sustainability of manufacturing companies.

Aligning cost structure with corporate governance is essential for manufacturing companies to achieve long-term financial sustainability. Efficient cost management, supported by governance practices, can help firms navigate economic challenges and maintain financial resilience in a competitive global market.

Research Design

This study employed a quantitative research design to investigate the relationship between cost structure and financial sustainability. Quantitative research method is systematic investigations that focus on quantifying data and analyzing it statistically to identify patterns, relationships, or trends. A correlational study design was used to identify potential patterns and associations between the variables. A Correlational research design is a method used to examine the relationships between two or more variables. Unlike experimental research, which manipulates variables to establish cause-and-effect relationships, correlational research seeks to identify patterns or associations without intervention. It assess the degree and direction of association between variables using statistical techniques. This study aimed to ascertain the relationship between cost structure and financial sustainability in light of corporate governance in manufacturing sector.

Population and Sampling

The study population included manufacturing, construction and allied publicly listed companies at Nairobi Securities Exchange (NSE) as they disclose cost components and financial sustainability indicators. Out of the 13 listed companies 11 were analysed that were actively trading at the NSE for the period of the study.

Data Collection

Secondary data was collected from companies' financial statements, annual reports, and regulatory filings over five-year period from 2018 to 2022. Key variables collected include measure of cost structure (cost components to net sales), measures of financial sustainability (ohlson O-score), and control variables corporate governance.

Data Analysis The collected data was analyzed using regression analysis to determine the relationship between cost structure and financial sustainability. In order to ensure non-violation of the assumptions of the linear regression model, diagnostic tests were conducted to ensure proper specification of equations. The study employed panel data analysis techniques to account for time-series and cross-sectional effects, which helps improve the robustness of the findings. To determine whether a Fixed Effects (FE) or Random Effects (RE) model is appropriate. Hausman Test was carried out. (H_0): Random Effects is appropriate (no correlation between independent variables and unobserved effects). A significant result suggests that unobserved heterogeneity is uncorrelated with the independent variables, making Random Effects more reliable.

$$FS_{it} = \beta_i + \beta_1 CS_{it} + \beta_2 CG_{it} + (\beta_3 CS * \beta_4 CG) + \varepsilon$$

Where:

FS: Financial Sustainability Indicator

CS: Cost structure

CG: Corporate Governance index

Hypotheses Testing

Hypotheses were developed to assess the impact of different components of cost structure (e.g., production cost or cost of sales, operating costs: -marketing & distribution cost and, administration & other costs) on financial sustainability. Statistical significance of the relationships was tested to validate or refute the proposed hypotheses, with findings interpreted within the context of the theories presented.

FINDINGS AND DISCUSSIONS

The empirical results comprise the results of descriptive statistical analysis, correlation analysis and panel data regression analysis.

Descriptive Statistics

Descriptive statistics are used at the beginning of the analysis phase in order to provide preliminary analysis of the data and guide the rest of the data analysis process (Cooper & Schindler, 2008).

Cost Structure**Table 4. 1: Cost Structure**

Variable	Obs	Mean	Std. Dev.	Min	Max
Production Cost	55	0.7169593	0.2404751	0.3641467	1.423311
Operation Cost	55	0.3938104	0.2942884	0.0958411	1.340467
Cost Structure	55	1.11077	0.4461188	0.7426929	2.701785

Production Cost

The average production cost was 0.7169593, indicating production forms a significant part of the overall cost structure. With CARB; EABL; BAT having the lowest scores of 38.07, 54.76, & 55.2% respectively. However, PORT, UNGA, BAMB, ORCH had highest score 128.72, 89.37, 86% & 81.75% respectively. Standard Deviation (Std. Dev.) of 0.2404751, suggesting moderate variability in production costs across the observations. The range (1.423311 - 0.3641467 = 1.0591643) demonstrates that production costs differ significantly between firms. The production cost is a key component of the cost structure, given its high mean.

Operation Cost

Operation cost included; Marketing & Distribution Cost, Administration & Other Costs, Finance Cost and Tax Expense. The average operation cost is 0.3938104, which is smaller than production cost but still a notable component of total costs. With UNGA; BAMB; ORCH, BAT having the lowest scores of 11.91, 12.3, 16.97 & 26.91% respectively. However, PORT, CABL, CARB, BOC had highest score of: 104.51, 74.62, 42.14% & 40.12% respectively. Standard Deviation (Std. Dev.) of: 0.2942884, showing slightly higher variability compared to production costs. The range (1.340467 - 0.0958411 = 1.2446259) reveals a wider disparity in operation costs compared to production costs. Operation costs appear to be more variable across observations, which could indicate differences in efficiency, scale, or management strategies.

Cost Structure

The average total cost structure is 1.11077, summing the major cost components (Production Cost and Operation Cost). With CARB, EABL, BAT having the lowest scores of 80.21, 82.11, 86.93% respectively. However, PORT, CABL, CARB, BOC had highest score of: 104.51, 74.62, 42.14% & 40.12% respectively. Standard Deviation (Std. Dev.) of: 0.4461188, suggesting moderate variability in overall costs among the observations. The range (2.701785 - 0.7426929 = 1.9590921) is substantial, reflecting significant differences in overall cost structures between firms.

The sum of Production Cost (mean: 0.7169593) and Operation Cost (mean: 0.3938104) closely matches the Cost Structure (mean: 1.11077), confirming these are major contributors to total costs. On average, production costs contribute more to the cost structure compared to operational costs, highlighting their importance in managing total expenses. The wide range in total costs suggests heterogeneity in firm size, scale of operations, or cost management strategies. Firms with higher

cost structures may need to optimize production or operational processes to enhance cost efficiency.

Corporate Governance

Table 4. 2: Corporate Governance

	N	Min Statistic	Max Statistic	Sum Statistic	Mean Statistic	Std. Error	Std. Dev. Statistic
Corporate Governance	55	0.1	0.7778	32.02	0.582182	0.0262918	0.194985
Valid N (listwise)	55						

The average governance score across the 55 observations was approximately 0.582. With BAT; EABL & BAMB having the highest scores of: 76.87; 76.22 & 75.11% respectively. However, ORCH, FTGH & BERG having the lowest scores of: 14.71; 30.44 & 55.11% respectively.

This suggests that, on average, the firms in the sample demonstrate an average level of adherence to governance principles. However, there is still considerable room for improvement since the mean is closer to the middle of the range (0.1 to 0.7778) than to the maximum. The standard error is a measure of the precision of the mean estimate. A smaller standard error of 0.026 indicates that the sample mean is a reliable estimate of the population mean.

The standard deviation quantifies the extent to which the governance scores vary from the mean. A standard deviation of 0.195 indicates moderate variability in corporate governance scores among the firms. While most firms have scores near the mean, some deviate significantly. The range (Max - Min = 0.7778 - 0.1 = 0.6778) shows a notable spread in governance scores, reflecting significant disparities in the quality of corporate governance practices across firms in the sample.

BAT and EABL have shown consistency in areas like transparency, stakeholder engagement, and ethical standards, adhering to the Capital Markets Authority's guidelines, which are key criteria in corporate governance assessments. BAMB generally scored well in governance due to its well-structured board practices and transparency in reporting, aspects that positively impact governance ratings. UNGA and BERG have also shown compliance improvements by adhering to guidelines that emphasize accountability and effective internal controls. CARB is noted for maintaining solid compliance with board regulations, aligning its governance practices with CMA standards, and showcasing strong operational transparency.

Financial Sustainability**Table 4. 3: Financial Sustainability**

	N	Mini Statistic	Maxi Statistic	Mean Statistic	Std.Error	Std. Dev. Statistic
Working Capital to Total Asset	55	-0.59	0.53	0.0975	0.03461	0.2567
Retained Earnings to Total Assets	55	-0.18	0.4	0.0775	0.01739	0.129
EBIT to Total Asset	55	-0.31	1.36	0.2738	0.04771	0.35382
Market Value to Total Liabilities	55	0.03	7.68	1.5458	0.23514	1.74387
Sales to Total Assets	55	0.06	2.09	0.8093	0.07201	0.53406
O-Score	55	-0.54	9.66	2.8025	0.3096	2.29609
Valid N (listwise)	55					

Working Capital to Total Assets, EBIT to Total Assets, and Market Value to Total Liabilities show the highest variability, highlighting significant differences in liquidity, profitability, and solvency across firms.

Working Capital to Total Assets

On average, working capital constitutes 9.75% of total assets, which is a modest level. Standard Deviation (Std. Dev.) of: 0.2567. The relatively high standard deviation compared to the mean indicates significant variability in liquidity management across firms. While some firms manage liquidity well (positive ratios), others struggle with potential liquidity constraints (negative ratios).

Retained Earnings to Total Assets

On average, retained earnings make up 7.75% of total assets, reflecting moderate internal funding across the sample. Standard Deviation of: 0.129. Low variability suggests most firms have relatively similar levels of retained earnings relative to total assets. Firms generally rely on modest internal funding, but a subset of firms faces challenges with accumulated deficits.

EBIT to Total Assets

On average, firms generate EBIT equal to 27.38% of their total assets, suggesting moderate profitability. Standard Deviation of: 0.35382. High variability suggests significant differences in operational efficiency and profitability among firms. A wide range highlights a disparity in firms' ability to generate returns from assets.

Market Value to Total Liabilities

On average, firms' market value is about 1.55 times their total liabilities, suggesting moderate investor confidence and solvency.

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Standard Deviation of: 1.74387. High variability indicates significant disparities in market perception and financial health. Some firms have strong market positions, while others face financial stress or lack investor confidence.

Sales to Total Assets

On average, firms achieve asset turnover of 80.93%, suggesting a moderate level of efficiency in asset utilization. Standard Deviation of: 0.53406. The high standard deviation reflects diverse levels of asset utilization efficiency. A subset of firms underutilizes assets, while others maximize asset turnover effectively.

O-Score

O-Score measures firm's likelihood of experiencing financial distress. O-Score > 0.38 indicate possibility of financial distress and O-Score < 0.38 indicate possibility of financial distress. The average O-Score of 2.8025 suggests that manufacturing industry are generally in a safe zone, but a subset of firms faces financial risk. With BERG; BAT; CARB having highest O-Score of 6.94; 5.86 & 4.83 respectively. However, PORT, CABL, FTGH having lowest O-Score of -0.23; 0.12; & 1.59 respectively. Standard Deviation of: 2.29609. High variability reflects a wide disparity in financial health across firms. Firms with low scores are at a high risk of financial distress, while others exhibit robust financial health. The manufacturing industry demonstrate moderate financial sustainability, with some facing liquidity issues (negative working capital), profitability challenges (negative EBIT), and solvency concerns (low market value relative to liabilities).

Correlation Analysis

Table 4.5: Spearman Rank Correlation Matrix

Particular	Cost Structure	Corporate Governance	O-Score
Cost Structure	1.0000		
CG Index	-0.2854*	1.0000	
O-Score	-0.6980*	0.2026	1.0000

Table 4.4 reveals that there is not much higher degree of correlation between the dependent variable (O-Score) and independent variables (Cost Structure and Corporate Governance). The dependent variables (O-Score) showed a negative correction of 0.6980 with cost structure and positive correlation with corporate governance with values of 0.2026.

The independent variables were also tested for correlation amongst them and the study reveals that Cost structure are negatively related with corporate governance with the score of 0.2854. The correlation between the variables was not a matter of concern and the data was subjected to regression analysis.

Bivariate Analysis

Bivariate analysis is concerned with the association between two variables. In this study, bivariate analysis was used to test whether there is significant differences among pairs of independent variables on the financial sustainability. The adjusted R was used to determine the extent of the relationship between the variables.

Production Cost and Financial Sustainability

Table 4.6: Relationship between Production cost and O-Score

				Number of obs =	55	
Source	SS	df	MS	Prob > F	=	0.0000
Model	105.068494	1	105.068494	R-squared	=	0.3693
Residual	179.448523	53	3.38582119	Adj. R-squared=		0.3574
Total	284.517017	54	5.26883365	Root MSE	=	1.8401
O-Score	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Production Cost-	5.800551	1.041274	-5.57	0.000	-7.889082	-3.71202
cons	6.961816	0.7867013	8.85	0.000	5.383893	8.539739

The coefficient Coef. = -5.800551 represents the estimated change in the dependent variable (O-Score) for a one-unit increase in the independent variable (Production Cost). The negative sign indicates an inverse relationship—as Production Cost increases, O-Score is expected to decrease. The p-value of 0.000 (less than the typical significance level of 0.05) indicates that the null hypothesis is rejected. This means that Production Cost is statistically significant in explaining the variation in O-Score. The confidence interval for the coefficient suggests that, with 95% confidence, the true value of the coefficient lies between -7.889082 and -3.71202. Since the entire confidence interval is negative, this further supports the interpretation of a negative relationship between Production Cost and O-Score.

The F-statistic tests the overall significance of the model. The p-value of 0.0000 indicates that the model is statistically significant, meaning at least one of the independent variables (in this case, Production Cost) is significantly related to the dependent variable (presumably O-Score). The R-squared = 0.3693 indicates that approximately 36.93% of the variability in the dependent variable (O-Score) is explained by the independent variable (Production Cost). This suggests that the model explains a moderate portion of the variation, but there may be other factors not included in the model that explain the remaining variation.

Operation Cost and Financial Sustainability**Table 4.7: Relationship between Operation cost and O-Score**

Source	SS	df	MS	Number of obs =	55	Prob > F =	0.0075
Model	36.1690226	1	36.1690226	R-squared =	0.1271	Adj R-squared =	0.1107
Residual	248.347994	53	4.68581121	Root MSE =	2.1647		
Total	284.517017	54	5.26883365				
O-Score	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]		
Operation Cost	-2.780983	1.000973	-2.78	0.0080	-4.788681 - .7732856		
_cons	3.898237	0.4904949	7.95	0.0000	2.914429 4.882045		

This coefficient Coef. = -2.780983 represents the estimated change in the dependent variable (O-Score) for a one-unit increase in the independent variable (Operation Cost). The negative sign indicates an inverse relationship—as Operation Cost increases, O-Score is expected to decrease. The p-value of 0.000 (less than the typical significance level of 0.05) indicates that the null hypothesis is rejected. This means that Operation Cost is statistically significant in explaining the variation in O-Score. The confidence interval for the coefficient suggests that, with 95% confidence, the true value of the coefficient lies between -4.788681, -7732856. Since the entire confidence interval is negative, this further supports the interpretation of a negative relationship between Production Cost and O-Score.

The F-statistic tests the overall significance of the model. The p-value of 0.0075 indicates that the model is statistically significant, meaning at least one of the independent variables (in this case, Operation Cost) is significantly related to the dependent variable (presumably O-Score). The R-squared = 0.1271 indicates that approximately 12.71% of the variability in the dependent variable (O-Score) is explained by the independent variable (Operation Cost). This suggests that the model explains a moderate portion of the variation, but there may be other factors not included in the model that explain the remaining variation.

Corporate Governance and Financial Sustainability**Table 4.8: Relationship between Corporate Governance and O-Score**

Source	SS	df	MS	Number of obs =	55	Prob > F =	0.1948
Model	8.9652396	1	8.9652396	R-squared =	0.0315	Adj R-squared =	0.0132
Residual	275.551777	53	5.19909014	Root MSE =	2.2802		
Total	284.517017	54	5.26883365				
O-Score	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]		
Corp Governance	2.089695	1.591349	1.31	0.1950	-1.102148 5.281537		
_cons	1.586475	0.9761389	1.63	0.11	-0.371412 3.544362		

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The coefficient Coef. = 2.089695 for Corporate Governance suggests that for each one-unit increase in Corporate Governance, the dependent variable O-Score is expected to increase by approximately 2.09 units. However, this is the unadjusted effect, and we need to consider the significance of the coefficient to determine if it is a meaningful relationship. The p-value of 0.1950 is greater than the typical significance threshold of 0.05, meaning that we fail to reject the null hypothesis that Corporate Governance has no effect on O-Score. This suggests that Corporate Governance is not statistically significant in explaining the variation in O-Score. The 95% confidence interval for the coefficient of Corporate Governance is [-1.102148, 5.281537], which includes 0. This further reinforces the lack of significance because if the true coefficient were zero, this interval would include zero as a plausible value. Thus, the relationship between Corporate Governance and O-Score is highly uncertain.

The F-statistic tests whether the model as a whole is statistically significant. A p-value of 0.1948 suggests that the overall model is not statistically significant at the usual significance level of 0.05. This means that Corporate Governance does not significantly explain the variability in O-Score at the 5% significance level.

The R-squared = 0.0315 value indicates the proportion of the variance in the dependent variable (O-Score) explained by the independent variable (Corporate Governance). An R-squared of 0.0315 implies that the model explains only about 3.15% of the variation in O-Score. This is a very low value, indicating that Corporate Governance alone is not a strong predictor of O-Score.

Multivariate Statistical Analysis

To determine whether a Fixed Effects (FE) or Random Effects (RE) model is appropriate. Hausman Test was carried out. (H_0): Random Effects is appropriate (no correlation between independent variables and unobserved effects). A significant result suggests that unobserved heterogeneity was uncorrelated with the independent variables, making Random Effects more reliable.

Hypothesis to test moderating role of Corporate Governance on relations among cost structure and financial sustainability**Table 4.9: moderating role of Corporate Governance on relations among cost structure and financial sustainability**

Random-effects GLS regression	Number of obs =	5
Group variable: ID	Number of groups =	11
R-sq:	Obs per group:	
within = 0.0073	min =	5
between = 0.3702	avg =	5.0
overall = 0.3010	max =	5
	Wald chi2(2) =	2.41
corr(u_i, X) = 0 (assumed)	Prob > chi2 =	0.4927

O-Score	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Cost Structure	-1.757298	2.73636	-0.64	0.521	-7.120464	3.605869
Corp Gov Index	-1.258861	5.303642	-0.24	0.812	-11.65381	9.136086
CSCG	0.374525	1.574332	0.24	0.812	-2.711108	3.460158
cons	4.806942	3.331195	1.44	0.149	-1.722081	11.33596
sigma_u	1.9072604					
sigma_e	0.88548606					
rho	0.8226744	(fraction of variance due to u_i)				

$$FS_{it} = 4.806942_i - 1.757298CS_{it} - 1.258861CG_{it} + 0.374525CSCG + 1.9072604u + 0.88548606\varepsilon$$

Cost Structure

The coefficient Coef.: -1.757298 for Cost Structure suggests that for every one-unit increase in Cost Structure, O-Score is expected to decrease by approximately 1.76 units, assuming all other variables remain constant. This implies a negative relationship, where higher costs in the structure of the firm are associated with lower financial health or higher distress. The p-value for Cost Structure is 0.521, which is above the typical 0.05 threshold for significance. Therefore, Cost Structure is not statistically significant in predicting O-Score. The confidence interval is wide, ranging from -7.12 to 3.61, and includes zero, further indicating that the relationship between Cost Structure and O-Score is not statistically significant.

Corporate Governance

The coefficient Coef. -1.258861 for the Corp Gov Index suggests that for every one-unit increase in the Corporate Governance Index, O-Score is expected to decrease by approximately 1.26 units. This implies a negative relationship, where higher governance quality is associated with lower financial distress. The p-value for Corp Gov Index is 0.812, which is far above 0.05, indicating that the effect of Corp Gov Index on O-Score is not statistically significant.

95% Confidence Interval: [-11.65381, 9.136086] the confidence interval for Corp Gov Index is very wide, and since it includes zero, it suggests that the relationship between Corp Gov Index and O-Score is not statistically significant.

Moderating Effect of Corporate Governance

The coefficient Coef. 0.374525 for moderating effect of corporate governance suggests that for every one-unit increase in corporate governance, O-Score is expected to increase by approximately 0.37 units, assuming all other variables remain constant. Since CSCG is a moderating variable, this suggests that the effect of CSCG on O-Score may alter or moderate the relationship between other predictors and the outcome variable. The p-value for CSCG is 0.812, which is far above the typical significance threshold of 0.05. This suggests that CSCG does not have a statistically significant moderating effect on O-Score. 95% Confidence Interval: [-2.711108, 3.460158] the confidence interval for CSCG includes zero, reinforcing the finding that CSCG does not significantly moderate the relationship between Cost Structure and O-Score.

Constant term has Coef. 4.806942. It represents the expected value of O-Score when all independent variables (Cost Structure, Corp Gov Index, and CSCG) are zero. The constant is 4.81, which suggests that in the absence of these factors, the baseline O-Score is around 4.81. The p-value for the constant is 0.149, which is above the 0.05 threshold for significance. This indicates that the intercept is not statistically significant. The confidence interval for the constant is wide, ranging from -1.72 to 11.34, indicating a high degree of uncertainty about its value.

Overall R-squared= 0.3010. The model explains 30.1% of the overall variation in O-Score, suggesting that the model fits the data with a modest level of explanatory power. Wald Chi-Square (chi2): 2.41, with p-value = 0.4927 The Wald chi-squared test assesses the joint significance of the model's independent variables. The p-value of 0.4927 is greater than 0.05, indicating that the independent variables (Cost Structure, Corp Gov Index, and CSCG) do not jointly explain O-Score significantly. Thus, the null hypothesis that the independent variables have no effect cannot be rejected.

Hypothesis to Test Relationship between joint cost structure and corporate governance on financial sustainability

Table 4.10: Joint relationship between cost structure and corporate governance on financial sustainability

Random-effects GLS regression	Number of obs	=	55
Group variable: ID	Number of groups	=	11
R-sq:	Obs per group:		
within = 0.0050	min	=	5
between = 0.3832	avg	=	5.0
overall = 0.3130	max	=	5
	Wald chi2(2)	=	2.50
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.2861

O-Score	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
Cost Structure	-1.153637	0.7310713	-1.58	0.115	-2.586511 0.279236
CG Index	-0.0481099	1.861734	-0.03	0.979	-3.697041 3.600821
cons	4.112491	1.524774	2.7	0.007	1.123988 7.100993

sigma_u	1.8515596
sigma_e	0.87947257
rho	0.81591648 (fraction of variance due to u_i)

$$FS_{it} = 4.112491_i - 1.153637CS_{it} - 0.0481099CG_{it} + 1.8515596 u + 0.87947257\varepsilon$$

Cost Structure

The Coef. -1.153637 indicates that for every one-unit increase in Cost Structure, O-Score is expected to decrease by approximately 1.15 units, assuming all other variables remain constant. The negative coefficient suggests that higher Cost Structure is associated with lower financial health or higher financial distress (if O-Score represents distress). The p-value for Cost Structure is 0.115, which is above the typical significance threshold of 0.05. This indicates that the effect of Cost Structure on O-Score is not statistically significant at the 5% level. The confidence interval suggests that the true coefficient for Cost Structure could range from -2.59 to 0.28. Since the interval includes zero, this reinforces the idea that the effect is not statistically significant.

Corporate Governance

The coefficient Coef. -0.0481099 for CG Index indicates that for every one-unit increase in CG Index (Corporate Governance Index), O-Score is expected to decrease by approximately 0.048 units. This suggests a negative relationship between CG Index and O-Score, implying that better governance may be associated with lower financial distress.

The p-value for CG Index is 0.979, which is far greater than 0.05, indicating that CG Index is not a statistically significant predictor of O-Score.

The confidence interval suggests that the true coefficient for Cost Structure could range from -3.70 to 3.6 which is very wide, which further suggests a high degree of uncertainty in the estimate. Since zero is within this interval, the effect of CG Index on O-Score is not statistically significant. Constant is the intercept of the model. With a Coef. 4.112491 It suggests that when both Cost Structure and CG Index are zero, the expected value of O-Score is 4.112491. The p-value for the constant term is 0.007, which is less than 0.05, indicating that the intercept is statistically significant at the 5% level. The confidence interval for the constant indicates that the true intercept is likely to fall between 1.12 and 7.10, and the estimate is statistically significant.

The overall R-squared of 31.3% suggests that the model explains about 31.3% of the total variation in O-Score, combining both within-group and between-group variations. Wald Chi-Square (chi2): 2.50, with p-value = 0.2861 This indicates that the joint significance of the independent variables (Cost Structure and CG Index) is not statistically significant. The p-value (0.2861) is greater than the common threshold of 0.05, suggesting that the null hypothesis (that both independent variables have no effect) cannot be rejected. In other words, these predictors do not have a strong statistical impact on O-Score.

CONCLUSIONS AND RECOMMENDATIONS

Understanding optimal cost structures is vital for financial sustainability. Theoretic research supports the assertion that Cost structure significantly influence the profitability and long-term viability of manufacturing firms. Many firms struggle to strike a balance between costs structure that can optimize profitability while providing the flexibility needed to survive in uncertain market conditions. This study explores the significance of cost structure in light of corporate governance and its impact on the financial sustainability of listed manufacturing companies. This study presented an examination of how listed manufacturing companies aligning cost structure with corporate governance to achieve long-term financial sustainability.

The average production cost and average operation cost was 0.7169593 and 0.3938104 respectively, indicating production forms a significant part of the overall cost structure. The average operation cost is smaller than production cost but still a notable component of total costs. Therefore, the average total cost structure is 1.11077 to sales. On average, production costs contribute more to the cost structure compared to operational costs, highlighting their importance in managing total expenses. The wide range in total costs suggests heterogeneity in firm size, scale of operations, or cost management strategies. Firms with higher cost structures may need to optimize production or operational processes to enhance cost efficiency.

The mean score of 0.582 reflects a moderate level of corporate governance in the manufacturing industry. It suggests an average level of adherence to governance principles. With a maximum

score of 0.7778, none of the firms achieve a perfect governance score, suggesting room for improvement across the board. The moderate standard deviation (0.195) indicates some level of diversity in governance practices, with a subset of firms performing better or worse than the mean.

The manufacturing industry demonstrate moderate financial sustainability, with some facing liquidity issues (negative working capital), profitability challenges (negative EBIT), and solvency concerns (low market value relative to liabilities).

The first objective to determine the impact of Cost component on financial sustainability of manufacturing companies. The results indicates that: Production Cost is statistically significant and negatively affects O-Score. Specifically, for every 1 unit increase in Production Cost, O-Score is expected to decrease by approximately 5.80 units. The model explains around 36.93% of the variation in O-Score, and the relationship between Production Cost and O-Score is statistically significant, with a very low p-value. These results suggest that Production Cost is a key factor influencing O-Score, and its effect is both statistically significant and substantial. The results is consistent with Wulandari, Abror, And Inggita (2016) study of the effect of production cost to net Profit; a case study of pt. Indorama Synthetics TBK.

Considering the comparative cost review of production across the regions, Kenya manufacturing industry production cost is above the highest ratios Africa and South America region. With the Lowest Ratios (50%–60%): Asia and the Middle East benefit from cheaper energy and labor costs or government subsidies. Highest Ratios (60%–70%): Africa and South America experience higher production costs due to weaker infrastructure and reliance on imports. Moderate Ratios (55%–65%): Europe and North America balance higher input costs with efficiencies and advanced technology.

Operation Cost is statistically significant and negatively affects O-Score. Specifically, for every 1 unit increase in Production Cost, O-Score is expected to decrease by approximately 2.78 units. The model explains around 12.71% of the variation in O-Score, and the relationship between Production Cost and O-Score is statistically significant, with a very low p-value. These results suggest that operation cost is a key factor influencing O-Score, and its effect is both statistically significant and substantial. However, the R-squared value for both cost components suggests that other factors may also play a role in determining O-Score, which could be explored further.

In relation to operation costs across the regions, Kenya manufacturing industry operation cost is above the highest ratios (Africa and South America region). With the Lowest OC/S Ratios (10%–20%): Asia and Middle East, supported by low labor, energy, and infrastructure costs. Highest OC/S Ratios (25%–35%): South America and Africa, due to logistical inefficiencies and higher costs for imports and services. Moderate OC/S Ratios (20%–30%): Europe and North America, driven by higher labor and administrative expenses but balanced by advanced infrastructure.

Manufacturing industry may need to optimize production (optimal cost of approximately 50% to 60%) or operational processes (optimal cost of approximately 10% to 20 %) to enhance cost efficiency to compete effectively. Optimal cost structure is critical for manufacturers to thrive in a highly competitive market. Otherwise, Kenya's manufacturing industry risk missing out on significant economic opportunities. Companies must balance cost structures to compete effectively, especially in the globalized market where local firms face competition from overseas manufacturers with lower cost structures. Kenyan manufacturing sector has no option by to reduce cost to endure dynamic globalized market competition.

The second objective to assess the impact of corporate governance on financial sustainability of manufacturing companies. The results indicates that: Corporate Governance is not statistically significant in explaining O-Score. The coefficient for Corporate Governance is positive, but the p-value (0.1950) is too large to conclude that Corporate Governance has a meaningful effect on O-Score. The R-squared value of 0.0315 indicates that the model explains only about 3.15% of the variation in O-Score, suggesting a poor fit. Based on this analysis, Corporate Governance does not appear to have a statistically significant relationship with O-Score in the model. The low R-squared and high p-values suggest that there may be other factors influencing O-Score that are not captured by this model.

The third objective to evaluate the moderating effect of corporate governance on relationship between cost structure and financial sustainability of manufacturing companies. The results indicates that: Overall R-squared= 0.3010 indicates that the model explains a higher proportion 30.1% of the overall variation in O-Score, suggesting that the model fits the data with a modest level of explanatory power. Wald Chi-Square (chi2): 2.41, with p-value = 0.4927 The Wald chi-squared test assesses the joint significance of the model's independent variables. The p-value of 0.4927 is greater than 0.05, indicating that the independent variables (Cost Structure, Corp Gov Index, and CSCG) do not jointly explain O-Score significantly. Thus, the null hypothesis that the independent variables have no effect cannot be rejected. The high p-values suggest that the relationships between these variables and O-Score are weak.

In understanding the moderating effect of corporate governance, the coefficient Coef. 0.374525 for corporate governance suggests that for every one-unit increase in corporate governance, O-Score is expected to increase by approximately 0.37 units, assuming all other variables remain constant. This suggests that the effect of corporate governance on O-Score may alter or moderate the relationship between other predictors and the outcome variable. The p-value for CSCG is 0.812, which is far above the typical significance threshold of 0.05. This suggests that CSCG does not have a statistically significant moderating effect on O-Score. The corporate governance variable, which is assumed to be a moderating factor, does not appear to significantly moderate the relationship

The fourth objective to ascertain the joint effect of Cost structure and corporate governance on financial sustainability of manufacturing companies. The results indicates that: The overall R-

squared of 31.3% suggests that the model explains about 31.3% of the total variation in O-Score, combining both within-group and between-group variations. Wald Chi-Square (chi2): 2.50, with p-value = 0.2861. This indicates that the joint significance of the independent variables (Cost Structure and CG Index) is not statistically significant. The p-value (0.2861) is greater than the common threshold of 0.05, suggesting that the null hypothesis (that both independent variables have no effect) cannot be rejected. In other words, these predictors do not have a strong statistical impact on O-Score.

The study recommends that practitioners in manufacturing industry may need to optimize production (optimal cost of approximately 50% to 60%) or operational processes (optimal cost of approximately 10% to 20 %) to enhance cost efficiency to compete effectively, especially in the globalized market where local firms face competition from overseas manufacturers with lower cost structures.

Financial sustainability encompasses a dynamic, multifaceted approach to managing financial resources, focusing not only on short-term financial viability but also on long-term stability, adaptability, and responsible financial practices. As results, financial sustainability has been defined and measured through various lenses. This study measured financial sustainability using the Ohlson O-Score Model. Future study may extend this literature by exploring other different metrics measures of financial sustainability. They can also explore different research methodology to further understand the cost components and measures the industry is putting in place to face dynamic competitive global market.

Implications of the study for Kenyan Manufacturers

Kenyan manufacturers face high production (72%) and operational (39%) costs, limiting global competitiveness and profitability. These costs hinder reinvestment in technology, expansion, and innovation, making it difficult to attract investors and create jobs, ultimately slowing economic growth. To address this, strategic initiatives are essential.

Manufacturers should invest in advanced technologies and automation to boost efficiency and reduce manual labor. Local sourcing and optimizing supply chains can lower input costs and mitigate reliance on expensive imports. Infrastructure improvements through public-private partnerships can cut logistical expenses. Leveraging regional trade agreements like African Continental Free Trade Area (AfCFTA) can expand market access and drive economies of scale.

Adopting lean manufacturing practices and renewable energy solutions can further reduce costs and enhance sustainability. Workforce development through targeted training will improve productivity, while collaboration in manufacturing clusters can lower shared costs. Government policies, such as tax incentives and duty exemptions, can encourage growth. By diversifying markets and improving product quality, Kenyan manufacturers can compete internationally,

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fostering sector growth and contributing to the country's industrialization goals under Kenya
Vision 2030.

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APPENDIX

PART I: MANUFACTURING, CONSTRUCTION AND ALIENED

BOC	B.O.C Kenya Ltd Ord 5.00
BAT	British American Tobacco Kenya Ltd Ord 10.00
CARB	Carbacid Investments Ltd Ord 5.00
EABL	East African Breweries Ltd Ord 2.00
MSC	Mumias Sugar Co. Ltd Ord 2.00
UNGA	Unga Group Ltd Ord 5.00
EVRD	Eveready East Africa Ltd Ord.1.00
ORCH	Kenya Orchards Ltd Ord 5.00
FTGH	Flame Tree Group Holdings Ltd Ord 0.825
ARM	Athi River Mining Ord 5.00
BAMB	Bamburi Cement Ltd Ord 5.00
BERG	Crown Paints Kenya PLC. Ord 5.00
CABL	E.A.Cables Ltd Ord 0.50
PORT	E.A.Portland Cement Ltd Ord 5.00