CORPORATE SUSTAINABILITY, MANAGERIAL EFFICIENCY AND FINANCIAL PERFORMANCE OF LISTED NON-FINANCIAL FIRMS IN KENYA

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author dully acknowledged.

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I do hereby confirm that I have examined the master's dissertation of

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And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

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ABSTRACT

Listed firms in Kenya have shown dismal financial performance relative to their global and continental benchmarks. This low financial performance raises pertinent questions about the influence of internal firm strategies, especially sustainability practices on firm financial outcomes, and the role played by internal capabilities like managerial efficiency thereof. This paper therefore sought to establish the relationship between corporate sustainability and financial performance of listen no-financial firms in Kenya, moderating for managerial efficiency. The study sought to investigate whether environmental sustainability, social sustainability and governance sustainability have an influence on financial performance of listed non-financial firms in Kenya, and whether this relationship is enhanced or diminished by firm managerial efficiency. The study identified stakeholder theory, triple bottom line theory and resource based view as its foundational models. The study undertook a quantitative approach, especially longitudinal panel design. The study targeted all NSE-listed non-financial firms. Samples were extracted using census sampling procedure. Data was collected using a data extraction sheet. The data was systematically reviewed from published annual reports of these firms. Such reports included audited financial reports, sustainability reports and corporate governance disclosure reports downloaded from company depositories, NSE website and CMA portal. Econometric methodology, Longitudinal panel regression analysis was conducted using STATA statistical analysis software and results presented in tables. The findings showed that environmental sustainability, measured through green investment ratio, and social sustainability, proxied by community engagement efficiency, both had a positive and statistically significant effect on financial performance. Governance sustainability, proxied by the board diversity index recorded a negative but statistically insignificant relationship with financial performance. The findings revealed further that when managerial efficiency is introduced as a moderating variable, it enhances the positive effects of environmental and social sustainability and the negative association between governance sustainability and financial performance. The study recommends that firms strategically integrate sustainability into operations, regulators strengthen ESG disclosure standards, and boards and managers adopt practices that balance efficiency with sustainable value creation.

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DEDICATION

For Mum & Dad.

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ACRONYMS AND ABBREVIATIONS

CMA	Capital Markets Authority
CS	Corporate Sustainability
ESG	Environmental, Social, and Governance
FE	Fixed Effects
FGLS	Feasible Generalized Least Squares
FP	Financial Performance
JSE	Johannesburg Securities Exchange
MA	Managerial Ability / Managerial Efficiency
NSE	Nairobi Securities Exchange
RE	Random Effects
ROA	Return on Assets
ROE	Return on Equity
TBL	Triple Bottom Line
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Corporate Sustainability	Refers to the integration of a firm's environmental, social, and governance (ESG) practices into its strategic and operational frameworks (Fischer et al., 2023).
Financial Performance	According to Fatihudin (2028), a firms financial performance is its achievement financially arising from utilization of its assets for a certain period.
Environmental Sustainability	Efforts made by a firm to manage its environmental impact, measured through ratios such as energy efficiency, carbon intensity, and green investments in this study (Leitoniene & Kundeliene 202).
Social Sustainability	Corporate initiatives geared toward social responsibility, employee welfare, diversity, and community impact (Kandpal et al., 2024).
Governance Sustainability	Practices that ensure transparency, accountability, and effective board oversight (Efunniyi et al., 2024).
Managerial Efficiency	Refers to the integrated skills of the entire top management team and how they use those skills to properly manage and optimize resource use(Adegbie et al., 2019).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In both developed and developing markets, economic health and competitiveness is indicated by the financial performance of listed firms. Firms listed on mature securities exchanges globally have shown strong financial performance, fostered by corporate governance improvements, technological innovation and sustainability integration (Busch et al., 2016). For instance, in 2023, the mean ROE for S&P 500 firms stood in the region of 24.23% indicating robust earning efficiency and stockholder value creation (Ycharts, 2024). This high ROE denotes how strategic sustainability alignment and maturity of capital a market results in stable high financial returns.

Regionally, those firms listed in Africa's most advanced exchange, Johannesburg Securities Exchange averagely recorded a ROE of 19.4% during the same period, denoting comparatively mild performance yet strong by continental standards (Wagiet, 2024). This shows the strides taken in adoption of corporate sustainability disclosures across African capital markets. However, this regional improvement remains low compared to global benchmarks, indicating that regional markets continue facing systemic constraints like regulatory variability. In Kenya, the performance of NSE-listed firms has remained fairly volatile over the past decade. According to TradingView (2024), the mean ROE amongst listed firms prevailed at roughly below 20% with Kakuzi PLC recording a mean ROE of 9.37% while almost 25% of listed firms in Kenya, according to Anyanzwa (2023), faced financial difficulties in 2022, risking suspension and even delisting from the NSE. This indicates a lag in financial performance in contrast to both regional and global counterparts. Moreover, market

capitalisation of the NSE decreased by 27.5% to Sh. 1.439 trillion by 2023 further highlighting both operational and structural inefficiencies (Muiruri, 2023).

Out of the factors affecting financial performance, corporate sustainability, measured using environmental, social and governance (ESG) metrics has surfaced as a critical determinant. There is growing international evidence that financial outcomes can be enhanced by sustainability integration through strengthened brand value, reduced operational risks and elevated stakeholder relations (Wang & Sengupta, 2016). Sustainability-integrating firms have recorded stronger market performance. For instance, European ESG-compliant firms outperformed their counterparts who rank lower in ESG compliance over the course of 17 years leading to 2023 (Lee, 2024).

Despite the strong global evidence supporting positive influence of sustainability integration on financial performance, sustainability adoption remains low in Kenya. Only 46% of Kenya's listed firms integrated sustainability initiatives in their operations in 2022, most of which were financial firms (Lawi, 2023). The low ROE and rate of sustainability integration adoption, combined with limited coverage of non-financial firms raises a pertinent question: To what extent does corporate sustainability influence financial performance of listed non-financial firms in Kenya, and how does managerial efficiency moderate this relationship? Addressing this gap is important for stakeholders seeking to alleviate firm competitiveness, capital attraction and long-term value creation through sustainable practices.

1.1.1 Corporate Sustainability

Corporate sustainability is a strategic approach to business that pursues long-term stakeholder value creation by integrating ESG factors into the core strategies and operations of an organisation (Montiel & Delgado-Ceballos, 2014). It indicates a corporation's dedication to responsible business practices while addressing vital societal and environmental issues. Corporate sustainability diverges from conventional beliefs of compliance and maximisation of

profit to stress how firms can generate common value for different range of stakeholders (Sneirson, 2008).

The significance of corporate sustainably has improved considerably in recent years, driven by hiked stakeholder expectations, the advancement of regulatory frameworks and a growing body of proof linking sustainability to organisational strength and increased financial performance (Brockett & Rezaee, 2012). Sustainability-integrated firms are better armed to manage risks, attract investment, foster innovation, reduce operational costs and bolster brand reputation (White, 2009). This evidence has led to a global change where investors increasingly demand open, consistent and all-inclusive sustainability disclosures.

Corporate sustainability normally comprises of three major elements (Tenuta & Cambrea, 2022). Environmental sustainability involves the way firms manage their effect on natural ecosystems including efforts to maximise the use of resources, minimize waste, reduce harmful emissions and optimise energy efficiency (Shrivastava, 1995). Social sustainability involves how firms engage with both its internal and external stakeholders, focusing on human rights such as equity, diversity, community involvement and fair employment practices (Foot & Ross, 2017). Finally, Governance sustainability involves the corporate structures and practices that guarantee accountability. Such structures and practices include ethical leadership, the diversity of the board of management; measures put in place to combat corruption and transparency in communication and decision making (Setyahadi & Narsa, 2020).

This study focused specifically on environmental, social and governance practices as they relate to the financial performance of listed non-financial firms in Kenya rather than the whole ESG framework even though it would still be relevant in its entirety. The research investigated sustainability as a premeditated strategic approach that may influence firm operational efficiency, investor confidence and ultimately its profitability. The study narrowed

its scope to measurable financial outcomes such as ROA and ROE over a 8-year period for non-financial firms listed on the NSE.

Additionally, the study incorporated managerial efficiency as a moderating variable, acknowledging that the advantages originating from sustainability may significantly depend on the effectiveness of the deliberate decisions made by the firm's internal management. Managerial efficiency was anticipated to have a bearing on the impact of sustainability practices on financial performance, thus offering a more nuanced understanding of the corporate sustainability-performance relationship. Essentially, corporate sustainability is not just a regulatory or ethical requirement but rather a strategic necessity for firms operating in increasingly complex and performance-driven markets. This paper therefore sought to add to the existing body of knowledge by exploring the role of corporate sustainability integration and managerial efficiency in determining the financial results of listed non-financial firms in Kenya.

1.1.2 Corporate Sustainability, Managerial Efficiency and Financial Performance

Corporate sustainability-Financial performance relationship has become an increasingly significant subject of inquest both in academia and in pragmatic circles. The main premise underlying this relationship is that firms which adopt sustainability practices are better positioned to achieve long-term profitability and stockholder value (Black, 2021). Through its ESG dimensions, corporate sustainability can influence financial performance in various ways. Firstly, environmental sustainability practices such as energy savings, efficient utilization of resources and reduction of waste can minimise cost and result in operational efficiency (Rosen et al., 2008). Secondly, social sustainability practices such as community engagement, ethical labour practices and employee welfare have the potential to enhance employee satisfaction, curb labour turnover and enhance brand loyalty (Hameed, 2024). Lastly, robust governance practices can lead to minimisation of managerial unscrupulousness, breed transparency and

improve investor confidence thus bolster firm value and access to capital (Vetrivel et al., 2025). These mechanisms act as a vessel through which sustainability practices transform into concrete financial outcomes. For instance, corporations that invest in environmental technologies may well face lower costs of production in the long run whereas those corporations that nurture good community relation and equitable employment practices may well face fewer social disruptions and enjoy boosted reputational capital (Waddock, 2000). In addition, devotion to healthy governance practices can lower risks such as those related to regulatory penalties, fraud and litigation (Akinsola, 2025). These sustainability dimensions can jointly lead to improved generation of revenue, savings on costs and better management of risks thus augmenting critical financial metrics such as ROA, ROE and Net Profit Margin.

The impact of corporate sustainability on financial performance may however not be even across all firms since the intensity and effectiveness of this relationship depend often upon internal firm factors (Cho & Lee, 2019). Managerial efficiency is one important factor. This factor is introduced in the current study as a moderating variable. It refers to the ability of the managers to effectively allocate firm resources, efficiently implement strategies and adaptively respond to both internal and external challenges (Yukl, 2008). In the context of sustainability reporting, efficient managers are most likely to integrate ESG practices into vital processes of the firm in a way that maximises the creation of firm value and minimises operation costs (Ameels et al., 2002).

Therefore, managerial efficiency is anticipated to have a bearing on the degree to which corporate sustainability practices transform into positive financial performance. CS-FP relationship is likely to be enhanced when managerial efficiency is high (Essel, 2024). This can be achieved through proper alignment of sustainability initiatives with strategic organisational goals, adequate resource allocation and effective monitoring of the said initiatives (Adegoke et al., 2024). On the other hand, when there is low managerial efficiency, sustainability initiatives

may be scantily implemented leading to waste of resources, approaches only designed for compliance or superficial reporting which gives rise to inadequate financial benefit (Baabereyir, 2009). In such instances, the prospective rewards of sustainability may be undermined or entirely lost.

This paper therefore sought to not only investigate the relationship between corporate sustainability and financial performance but also to establish how this relationship is moderated by firm's managerial efficiency. The knowledge of this interaction is important for both scholars and other users as it underscores the importance of internal competencies in transforming sustainable efforts into financial outcomes.

1.1.3 Listed Firms In Kenya

The NSE was founded in 1954 to list equity and debt securities in Kenya. It is the sole platform for capital mobilisation and investment within the nation. NSE hosts 64 listed firms categorised into various sectors: financial, construction, agricultural, energy, commercial services, manufacturing, investment and telecommunications sectors (NSE, n.d.). A significant part of these sectors consists of non-financial firms (34 firms) which was the centre of this study. Collectively, these listed firms play a critical role in the economy by contributing to industrial development, employment and GDP.

The regulatory framework governing NSE-listed firms is anchored in various Acts and supervisory institutions established to ensure market transparency, integrity and investor protection. Dominant among these institutions is the CMA which is the chief regulator responsible for supervising, licensing and monitoring market intermediaries, investment schemes and listed firms (Gakeri, 2012). The CMA enforces compliance with the Capital Markets Act (1989, Revised 2022), the Companies Act (2015) and multiple other regulations related to financial disclosure, corporate governance and sustainability reporting.

Additionally, the NSE plays a twin role as both a platform for securities exchanges and a self-regulating organisation. The latter is achieved through implementation of the NSE ESG Disclosure Guidance Manual (2021) which provides listing requirements and continuous reporting obligations for all companies on NSE (NSE, 2021). By complementing the GRI framework, the manual encourages listed firms to undertake sustainability initiatives and voluntarily report non-financial information (Shayo, 2024).

Regardless of these developments, the uptake of sustainability practices amongst listed firms in Kenya remains disproportionate. As of 2023, merely 29 out of 63 listed firms (46%) had adopted official sustainability reporting frameworks and even fewer had integrated sustainability into their strategic operations (Lawi, 2023). This gap in adoption is more prominent among non-financial firms, most of which continue to operate under conventional business paradigms with inadequate Sustainability integration.

Given the importance of listed firms to Kenya's economic performance and the development of regulatory frameworks governing their ESG integration, it was important to understand how sustainability practices impact their financial performance. This research therefore concentrated on non-financial firms listed on NSE, firms which operate under the horizon of regulatory authorities and are subject to both local and international stakeholder prospects on corporate sustainability.

1.2 Statement of the problem

The financial performance of listed firms plays a very important role in the growth of national economy, creation of investor wealth, development of capital market and corporate sustainability. When listed firms are in optimal performance, they attract both local and foreign investment, create employment opportunities and bolster the ability of the government to mobilise revenue through taxes (Škare & Hasić, 2016). Investors interpret strong financial performance as improved returns, increased value and grander market confidence. On the other hand, for the greater economy, strong financial performance ensures a vibrant, resilient and transparent corporate sector that contributes positively to GDP and socio-economic development (Ali & Mohsin, 2023).

However, all is not rosy as the actual situation in Kenya paints a worrying picture. Performance of listed firms, more so those in the non-financial sector has remained volatile and mostly subpar. According to TradingView (2024), the average ROE amongst listed firms in Kenya remained low with Kakuzi recording an average ROE of 9.37%, Sasini PLC 0.37% and Marshalls (E.A.) Ltd recording a ROE of 8.53% between 2021 and 2023 which was considerably below regional and global counterparts. In comparison, S&P 500 firms recorded an average ROE of 24.23% (Ycharts, 2024); while Johannesburg Stock Exchange-listed firms recorded an average ROE of 19.4% in the same period (Wagiet, 2024). Further, according to Anyanzwa (2023), nearly 25% of listed firms in Kenya, mostly non-financial firms, recorded negative working capital, risking suspension and even delisting from the NSE in 2022; according to Muiruri (2023), the overall market capitalisation of the NSE dropped by 27.5% to Sh. 1.439 trillion by 2023. If this annoying trend continues, Kenya will face declined investor confidence, stagnated capital market development and shrunk corporate sector competitiveness.

In light of these highlighted challenges, corporate sustainability presents itself as a prospectively transformative approach. Firms can alleviate risk management, augment operational efficiency, bolster stakeholder trust and ultimately achieve better financial outcomes by integrating ESG practices into their business operations (Ma, 2024). Globally, adoption of sustainability has been related to improved performance indicators. This adoption has however been slow and fragmented in Kenya. Lawi (2023) states that as of December 2022, only 46% of NSE-listed firms had integrated ESG disclosures into their annual or financial reports indicating that adoption of sustainability practices remained limited, mostly among non-financial firms. This under adoption signals missed opportunities to push performance through sustainable practices.

In spite of increased academic interests on the intriguing subject of sustainability and financial performance, empirical findings on the relationship between the two remain mixed and reliant on context. Some studies report a positive and significant relationship (Soytas et al., 2019; Agutu & Githira, 2023). Other studies report indifferent or negative relationship (Nugrahani & Artanto, 2022; Adejola et al., 2024). Most studies have concentrated on either financial firms or broader ESG disclosures with minimal weight placed on how internal organisational capabilities such as managerial efficiency affect this relationship. Managerial efficiency could strengthen or weaken the gains derived from sustainability integration. Firms with high managerial efficiency could transform sustainability initiatives into improved financial performance and vice versa.

This study sought to fill the empirical gap by focusing on the CS-FP relationship of listed non-financial firms in Kenya while examining managerial efficiency as a moderating variable. It pioneered a new dimension to sustainability research in Kenya by moving away from conventional direct causality to investigate how internal corporate competencies influence the sustainability-performance nexus.

1.3 Research Objectives

1.3.1 Main Objective

The main objective of this research was to establish the relationship between corporate sustainability and the financial performance of listed non-financial firms in Kenya, and to determine the moderating effect of managerial efficiency on this relationship.

1.3.2 Specific Objectives

1. To investigate the relationship between social sustainability integration and the financial performance of listed non-financial firms in Kenya.
2. To determine the relationship between governance integration and the financial performance of listed non-financial firms in Kenya.
3. To establish the relationship between environmental sustainability integration and the financial performance of listed non-financial firms in Kenya.
4. To determine the moderating effect of managerial efficiency on the relationship between corporate sustainability and financial performance of listed non-financial firms in Kenya.

1.4 Research Questions

1. Does social sustainability integration influence the financial performance of listed non-financial firms in Kenya?
2. Does governance integration influence the financial performance of listed non-financial firms in Kenya?
3. Does environmental sustainability integration influence the financial performance of listed non-financial firms in Kenya?
4. To what extent does managerial efficiency moderate the relationship between corporate sustainability and financial performance of listed non-financial firms in Kenya?

1.5 Significance of the Study

The findings of this study will be beneficial to multiple stakeholders. First, regulatory bodies such as the CMA and the NSE will gain insights into how sustainability practices affect firm performance, enabling them to strengthen sustainability disclosure policies and corporate governance guidelines. Second, investors will benefit from a better understanding of how ESG integration and managerial effectiveness affect financial outcomes. This will enhance their investment decision-making and portfolio risk management. Third, the management of listed non-financial firms will find the results helpful in aligning sustainability strategies with performance targets, while also recognizing the importance of strengthening managerial capabilities to extract maximum value from ESG efforts. Finally, the study will contribute to academic literature by offering new empirical evidence on the moderating role of managerial efficiency in the relationship between CS-FP within an emerging market context.

1.6 Scope of the Study

This paper focused on NSE-listed non-financial firms. The study particularly examined the relationship between corporate sustainability and financial performance in these firms, with managerial efficiency as a moderating variable. The study examined corporate sustainability across the dimensions of social sustainability integration, governance integration, and environmental sustainability integration, while investigating how managerial efficiency influences these relationships. The paper relied on secondary data from annual sustainability reports, integrated annual reports, and financial statements of listed non-financial firms in Kenya over eight years. Managerial efficiency metrics was extracted from corporate governance reports and financial disclosures. The study employed quantitative techniques, including moderation analysis, to establish the correlation between corporate sustainability and financial performance, and to determine the extent to which managerial efficiency enhances or diminishes this relationship.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a complete empirical and literature review with respect to the key variables of the study: corporate sustainability (ESG), managerial efficiency and financial performance.

2.2 Theories of the study

This study was anchored on three fundamental theories: Stakeholder theory, the Triple Bottom Line (TBL) theory and Resource Based View (RBV).

2.2.1 Stakeholder Theory

First developed by Edward Freeman in 1984, stakeholder theory brought about a paradigm shift in the way of doing business, from a model focused on shareholders and exclusively for their value creation to a model focused collectively on all the stakeholders. The theory postulates that a firm has responsibilities not only to its shareholders but also to every other stakeholder. One key emphasis of the theory is that organizational success stems not solely from profit maximisation but also is a result of a balanced ethical engagement with and provision of all stakeholders' interests through deliberate corporate decisions.

In agreement with Edward Freeman's stakeholder theory, scholars have argued that sensitivity to the needs of stakeholders breeds legitimacy, bolsters reputation of the firm and reduces risks related to operations and regulations. Carlon and Downs (2014) stresses the inherent stakeholders' value whereas Freeman et al. (2007) affirm that engaging stakeholders strategically leads to innovation, resilience and ultimately to increased firm performance. In their study, Zopounidis and Lemonakis (2024) established firms oriented to stakeholders outdo their peers financially. Jo and Harjoto (2012) also agree to this view by asserting that firms that

focus on stakeholder sustainability strategies and have stronger governance frameworks tend to experience higher profitability.

The theory is not without critics. Jensen (2001) debate that the theory doesn't have a clear procedure for prioritising stakeholder interests, possibly giving rise to strategic ambiguity or inefficiency. Similarly, Sundaram and Inkpen (2004) challenge that wholistic focus on stakeholders can offset managerial accountability and impede decisions driven by profit.

In spite of criticism, the theory provides ground for examining corporate sustainability in this study especially through its ESG dimensions which are essentially stakeholder-oriented. Environmental sustainability manifests accountability of the firm with respect to communities around them, compliance with regulations and mindfulness of the future generation through ecological harm reduction (Rondinelli & Berry, 2000). Social sustainability on the other hand indicates concern for both internal stakeholders like employees through fair labour practices and safe working conditions, and external stakeholders such as communities through inclusivity and social investments (Adu-Gyamfi et al., 2021). Governance sustainability guarantees ethical and transparent management practices, and accountability to investors, regulators and boards (Rezaee, 2008). It is without question that a firm promotes legitimacy, bolsters relations, lowers risks related to reputation and enhances its strategic adaptability when it fully addresses the needs of the above mentioned stakeholder groups (Yoo, 2025).

In Kenya, where regulatory implementation remain sporadic and stakeholder demands increasingly voiced, a proactive response to stakeholder concerns through targeted ESG initiatives may help firms develop reputational capital, shun costly disruptions such as labour unrests, sanctions and protests. It may also open market opportunities like investments steered by ESG. When directed by an efficient management, stakeholder-centric sustainability practices therefore bolster corporate profitability.

2.2.2 Triple Bottom Line (TBL) Theory

John Elkington formulated TBL theory in 1997 which advances the conventional business success measurement beyond just profitability to include people and planet. In the context of this paper, the 3 P's denote social sustainability, environmental sustainability and financial performance. Elkington in his theory proposes that corporate sustainability should not only be evaluated by the ability of a firm to generate profit but also its ability to meaningfully contribute to people (social well-being) and the planet (environmental conservation). The three measures above therefore make the new corporate bottom-line.

The work of John Elkington has had proponents and opponents in equal measures. Thun et al. (2024) support that firms that incorporate both environmental and social concerns into their strategic plans have a tendency to experience better risk management, customer satisfaction and investor confidence. Moreover, Chen et al. (2024) seconded Elkington by arguing that environmentally and socially responsible firms benefit from bolstered innovation capability, reduced operational disruptions and better access to capital. Empirical evidence have also further emphasised that well-designed sustainability programmes have the ability to positively impact net profit margin, ROE and the overall value of the firm (Aydoğmuş et al., 2022).

Johnsen & Misiaszek (2022) on the other hand critique the TBL theory by arguing that it lacks a rigorous methodology for assessing trade-offs across the 3 P's, more so when environmental and social goals conflict with financial performance. They also underscore the lack of universal metrics in measuring environmental and social initiatives, pointing out the subjectivity in measurement. Arowoshegbe et al. (2016) contend that the TBL risks reduction to a reporting exercise rather than an evolutionary tool of management if it is not systematically integrated.

In spite of the opposition to the TBL theory, it remains relevant to the current study by providing a robust conceptual foundation for evaluating the impact of environmental and social sustainability initiatives on corporate financial performance. The theory assumes that long-run success of a firm is reliant on its harmonious integration of social, environmental and economic activities. This assumption very well resonates with listed non-financial firms in Kenya since stakeholders are increasingly demanding corporate responsibility with respect to ESG and economic sustainability. TBL therefore provides an invaluable lens for comprehending how firm success is influenced by sustainability. The bottom-line is that the ability of the firm to pursue people, planet and profit is no longer a philanthropic adventure but a strategic necessity that unequivocally impacts financial performance.

2.2.3 Resource-Based View (RBV)

Popularised by Barney in 1991, RBV gives a strategic management perspective of the firm. A perspective that places emphasis on firm's internal resources as the basic drivers of competitive advantage and outstanding performance. RBV postulates that organisations possess assorted resource packages, tangible and intangible. It further argues that only after effectively identifying, deploying and leveraging these resources can firms achieve long-term success. Undoubtedly, valuable, rare, inimitable and non-substitutable (VRIN) resources can create long-lasting competitive advantage that translate into improved firm results as well as financial performance.

Proponents of RBV such as Hesterly and Barney (2014) maintain that internal competencies such as managerial efficiency are primary contributors of strategic performance and creation of firm value. Hart (1995) supports the work of Barney by extending the application of RBV to the context of sustainability and asserting that social and environmental responsiveness bolsters lasting profitability. On the other hand, Priem and Burtler (2001) dispute the theory by arguing that RBV is redundant as it tends to make an assumption that

resources are valuable because they contribute to success without giving extrapolative clarity. Other opponents of this theory, like Farndale et al. (2022) fault RBV for majorly focusing on internal capabilities and ignoring external forces like regulatory pressures which are notably pertinent in emerging markets.

In relation to this study, RBV provides a solid explanatory foundation for comprehending how internal competencies such as alignment with corporate sustainability influences financial performance and how managerial efficiency affects the strength of that relationship. RBV therefore bolsters the inclusion of managerial efficiency as a moderating variable in this study. Managerial skills, experiences and strategic intelligence are by themselves considered important intangible resources (Camelo-Ordaz et al., 2003). An efficient management is better positioned to implement ESG initiatives in alignment with organisational goals and enhance value across stakeholder groups (Khamisu et al., 2024) In this sense, managerial efficiency is not just an operational concern but more importantly, it is a strategic asset that can affect the rate at which sustainability initiatives convert to quantifiable financial gains (Lăzăroiu et al., (2020).

It is noteworthy to appreciate the concept of RBV with respect to the context of resources-constrained firms in emerging markets like Kenya. Listed non-financial firms in Kenya mustn't rely solely on financial capital but also on non-tangible resources like managerial capabilities, stakeholder goodwill and sustainability culture. In this context, firms that are able to turn sustainability initiatives into entrenched efficiencies rather than "greenwashed" compliance are more likely to obtain long-term financial gains. What is more, the ability of management to effectively and efficiently identify, deploy and leverage these resources associated with sustainability may influence the extent to which they translate into financial performance.

2.3 Empirical Review

2.3.1 Environmental Sustainability and Financial Performance

Multiple studies have been undertaken in the past to examine the relationship between environmental sustainability and financial performance. Matuszewska-Pierzynka (2024) investigated the impact of corporate sustainability performance on financial outcomes of twenty one firms listed on Poland's WIG-ESG Index. The study applied regression analysis on panel data (2012-2021) extracted from Refinitiv Eikon and financial data drawn from EMIS. It was established that environmental sustainability significantly improved long-term sales revenue, while governance sustainability positively influenced return on sales. Social and economic dimensions showed no significant effect. The study however did not consider internal factors such as managerial efficiency, nor did it account for contextual differences found in emerging markets.

Chininga et al. (2023) conducted a study on ESG ratings and corporate financial performance in South Africa. They adopted panel regression to analyse forty firms listed on the FTSE/JSE Responsible Investment Index between 2015 and 2019. The study employed a two-stage least squares (2SLS) estimation method to address endogeneity. The authors established that environmental initiatives had a statistically significant positive impact on both ROE and market valuation (Tobin's Q), while social and governance dimensions had no significant effect. This study provides pertinent evidence for the current study by asserting the active role of the environmental component of ESG in improving firm performance in emerging markets.

Nigatu et al. (2024) examined Green practices and economic performance: Mediating role of green innovation in Ethiopian leather, textile, and garment industries using an integrated PLS-SEM analysis to analyse survey data from 201 top and general managers. The study established that green manufacturing, marketing orientation, and investment significantly enhanced both green innovation and firm economic performance while green HRM had no

significant direct or indirect impact. These findings highlight the positive role of environmental sustainability practices in enhancing financial outcomes of the firm. The study is however limited by its sector-specific focus on manufacturing and its omission of internal organizational capabilities such as managerial efficiency, which could moderate these effects.

Kipngetich and Gatauwa (2024) explored the relationship between environmental sustainability reporting and financial performance of 58 firms listed at the Nairobi securities exchange, Kenya. The researchers adopted census-based explanatory research design and used multiple regression analysis method. The study assessed climate action, responsible consumption, sustainable innovation, and energy use reporting. Results showed a statistically significant positive relationship between all the four environmental reporting components and financial performance with sustainable innovation reporting having the strongest effect. The study reinforces the premise of this research that ESG practices can improve financial performance in listed non-financial firms when effectively integrated.

Gitau and Waweru (2024) investigated Sustainability Reporting and Financial Performance among eleven Listed Commercial Banks at the Nairobi Securities Exchange -Kenya. The study applied descriptive exploratory research design, stratified random sampling across various staff levels and utilized both questionnaire-based primary data and secondary financial records. The authors conducted both correlation and regression analysis using SPSS version 28. Results showed that environmental sustainability had positive relationship with financial performance specifically in banks that implemented clean energy and waste management initiatives. Conversely, the study noted that full-scale adoption of environmentally sustainable practices remained limited. Although educative, the study focused entirely on the banking sector and did not incorporate internal firm-level capabilities such as managerial efficiency that may enhance ES-FP relationship.

2.3.2 Social Sustainability and Financial Performance

Empirical studies on the relationship between social sustainability and financial performance show varied results across different contexts. Singh and Sørensen (2024) investigated the relationship between social sustainability and financial performance in Nordic (Sweden, Norway, Denmark, and Finland) large and mid-cap firms. The researchers adopted 2018 to 2022 ESG data from Bloomberg and financial indicators from annual reports. Using fixed-effect regression to analyse the data, they found a mixed relationship. While product responsibility positively influenced Tobin's Q, human rights disclosures were negatively associated with ROE, and other social indicators were statistically insignificant. These results suggest that the financial value of social sustainability varies by component and region. Even though the findings are insightful for developed markets, the study did not explore internal firm-level factors that could explain these outcome variations.

Obiora et al. (2022) examined Corporate Social Sustainability Practice and Financial Performance of listed Consumer Goods Firms in Nigeria between 2016 and 2021. The study adopted a panel data design and regression analysis using disclosures from sustainability reports, focusing on labour practices, human rights and product responsibility. Findings showed that all components of social sustainability had a statistically significant and positive effect on ROE alluding that firms actively engaging in social responsibility practices tend to attain superior financial outcome. The study was however limited to consumer goods firms and did not consider the internal management competencies that could influence this relationship.

Ariyo (2023) studied Corporate Social Responsibility and Competitive Edge. The study used qualitative case study to investigate how CSR contributes to competitive advantage at MTN Uganda. Data was collected using semi-structured interviews with executives, employees, and customers and supported by corporate documents. The study applied thematic analysis and found that CSR initiatives nurtured brand loyalty, enhanced employee retention

and improved public perception, eventually strengthening the competitive edge of the firm. The study concluded that rather than considering CSR as a cost, it should be regarded as a long-term strategic investment. Ariyo's paper however was not free from limitations: it relied majorly on perceptual and qualitative data and lacked objective financial performance indicators such as ROA or ROE. Notably, the study did not examine internal organizational capabilities that might influence how CSR initiatives are implemented and linked to firm-level outcomes.

Waithera (2023) explored the effect of sustainability reporting on the financial performance of fifty-nine publicly listed companies in Kenya. The study used secondary data and analysed it using regression analysis. It was established that the relationship between social sustainability and financial performance was positive but statistically insignificant, indicating that while social sustainability initiatives may enhance stakeholder relations, they do not strongly predict performance in the short run. The study however failed to consider internal competencies that may affect the intensity with which social sustainability initiatives translate to financial performance.

To pile on the topic of sustainability and financial performance, Agutu and Githira (2023) investigated the relationship between sustainability reporting and financial performance among twenty-three financial firms listed on the NSE over the period 2015–2021. The study used a descriptive research design and a census approach. It applied content analysis and feasible generalized least squares (FGLS) regression to assess the impact of ESG disclosures. The authors measured the impact of ESG disclosures through an exploratory factor analysis index. Data was drawn from annual reports and the results thereof showed a positive and significant relationship between ESG reporting and FP, highlighting the strategic significance of sustainability in augmenting firm resilience and long-term profitability. Even though the study offers strong empirical support for financial benefits of ESG integration, it focuses only

on financial firms and fails to appreciate internal firm capabilities such as managerial efficiency which may strengthen or weaken the sustainability-performance nexus.

2.3.3 Governance Sustainability and Financial Performance

The relationship between Governance practices and financial performance has gained significant attention in both academia and practice. Shmelev and Gilardi (2025) examined the impact of Corporate ESG Performance on Financial Returns, Business Model Innovation and Social Transformation of thirty major global firms. The authors applied multivariate regression analysis. Findings showed that governance initiatives, more so board oversight, executive accountability and ESG integration into strategic planning had the strongest and most consistent positive relationship with financial performance. These governance elements bolstered quality of decisions, management of risk and transparency therefore improving ROE and stability of share price. Although the study provided strong insights into the effectiveness of governance practices in developed markets, it did not consider the effect of internal corporate capabilities and it definitely did not explore firms operating in developing markets.

Attridge et al. (2021) examined the relationship between Financial performance and corporate governance among 33 national development banks in Africa. The study covered banks from 21 African countries with the dataset spanning six years, 2014-2019. The authors conducted an econometric analysis to investigate the effect of political influence on governance and financial performance, controlling for country-level factors. Findings showed that political appointment of executive by head of state had a significant relationship with poor financial performance. Higher independent board member ratio correlated with stronger financial outcomes, effect that was magnified in countries with shakier institutional environments. While financial metrics were examined in the study, there was inadequate evaluation of development effectiveness outcomes which are critical in measuring the performance of national development banks.

Temba et al. (2023) explored the effect of corporate governance on financial performance of commercial banks in Tanzania. The study employed panel data from 15 banks over a 17-year period, 2003–2019. It adopted multiple linear regression analysis. The results showed that board aspects of governance such as behavioural expectations, senior leadership composition and board control mechanisms significantly affected financial performance metrics. Outstandingly, gender diversity was negatively associated with non-performing loans. The study further established that over-boarding weakened governance efficacy thus negatively affecting liquidity and efficiency. These findings align with the RBV theory, emphasizing that rare and well-managed board competencies can drive competitive advantage. The focus of the study on Tanzania's banking sector limited its generalizability to non-financial firms or other developing markets.

Otieno et al. (2015) investigated the effect of corporate governance on financial performance of SACCOS in Kenya. Specifically, the authors used data from 3 major cooperatives in Nakuru. They employed spearman's rank correlation to analyze how board size affects financial performance. Results showed that the relationship between board size and FP was statistically insignificant at 5% level of significance, indicating that in the context of SACCOs, financial improvements may not be achieved by simply adjusting board composition. Despite being very insightful, the study outcomes may not be generalizable to listed non-financial firms since they are bigger, wider in scope and undergo stricter regulations.

2.3.4 Managerial Efficiency as a Moderator in the Sustainability–Performance Relationship

Putra et al. (2023) examined the moderating role of green CEO in the effect of managerial ability (MA) on environmental performance (ENV) of 197 firms listed on the Indonesian Stock Exchange and participating in the Program Penilaian Peringkat Kinerja Perusahaan Dalam Pengelolaan Lingkungan Hidup (PROPER) environmental program. The study employed industry- and year-effect regression analysis and established that MA positively affected ENV only when moderated by the presence of green CEOs implying that executives who are conscious environmentally, with higher managerial efficiency view environmental responsibilities as strategic investments that promote sustainability and competitive advantage. The study however showed methodological limitations through its restrictive sampling approach which focused only on PROPER participants, acknowledged possible measurement errors in quantifying MA and failed to delimit environmental responsibilities across regulatory, business, and ethical dimensions.

Liaqat et al. (2024) explored the moderating role of sustainable leadership in the relationship between sustainable project management (SPM) and sustainable project success (SPS) within Pakistan's Public Sector Development Program (PSDP). They used data from 285 completed projects analyzed through a hierarchical component modeling approach based on Partial Least Squares Structural Equation Modeling (PLS-SEM). The study established that SPM positively influenced SPS and that sustainable leadership significantly strengthened this relationship, suggesting that leaders who prioritize sustainability can enhance the effectiveness of project management practices in delivering long-term developmental outcomes aligned with SDGs. The study was however contextually limited to public sector projects in Pakistan, with its findings possibly inhibited by institutional characteristics not generalizable to public sector firms or other national contexts. Additionally, the focus on project-level sustainability did not

account for broader corporate sustainability dimensions such as ESG and economic considerations and its reliance on single-informant data introduced potential bias.

Suleiman et al. (2023) investigated the moderating effect of managerial efficiency (ME) on the relationship between corporate social responsibility (CSR) and market value among 8 listed Nigerian banks. They made use of panel data, 2012-2021. The study used Weighted Least Squares and Pooled OLS statistical techniques. Results showed that while both CSR and managerial efficiency individually had significant positive effects on market value, managerial efficiency unexpectedly showed a significant negative moderating effect on the CSR-market value relationship. This counterintuitive finding suggests that highly efficient managers may perceive CSR expenditures as detrimental to financial optimization in the Nigerian banking sector. The study however displayed methodological limitations through its limited focus on Nigerian banking institutions, ignoring non-financial firms. Moreover, the research did not exhaustively explore the multifaceted nature of sustainability beyond CSR expenditures.

Oluoch (2021) investigated strategic leadership influence on financial sustainability among NGOs in Kenya. The study employed regulatory framework as a moderating variable. Data was collected from 413 members of strategic leadership teams across active local NGOs. Employing ordinal logistic regression, the study found that strategic direction, firm's resource portfolio and ethical practices significantly influenced financial sustainability explaining 8.7%, 13.9%, and 15.4% of variance respectively. What's more, the moderating effect of regulatory framework explained 39.9% of variance in financial sustainability, but the proportional odds assumption was violated and the model demonstrated poor fit with the moderating variable (χ^2 (48) = 587.632, $p \leq .05$) leading to the rejection of regulatory framework as a significant moderator. Nevertheless, the study exhibited methodological limitations through its focus on NGOs rather than for-profit entities, and encountered statistical challenges with ordinal variables and assumption violations.

2.4 Summary and Research Gap

Review of empirical literature highlighted several trends and inconsistencies in the CS-FP relationship moderated by managerial efficiency. Studies from both developing and developed markets suggest that environmental sustainability initiatives like waste reduction, energy efficiency and emissions control generally have a positive impact on long term FP (Chininga et al., 2023; Kipngetich & Gatauwa, 2024). Similarly, governance sustainability practices like board independence, board gender diversity and transparency contribute to improved FP(Shmelev & Gilardi, 2025; Temba et al., 2023). Social sustainability initiatives however suggest mixed relationship. Obiora et al. (2022) report a positive influence of social sustainability on FP whereas Waithera (2023) reports weak or insignificant effect. More importantly, recent research suggests that these relationships may be dependent on internal firm factors, particularly managerial efficiency, even though findings in this area are contradictory. Some studies demonstrate an enhancing effect (Putra et al., 2023) while others show diminishing effect (Suleiman et al., 2023).

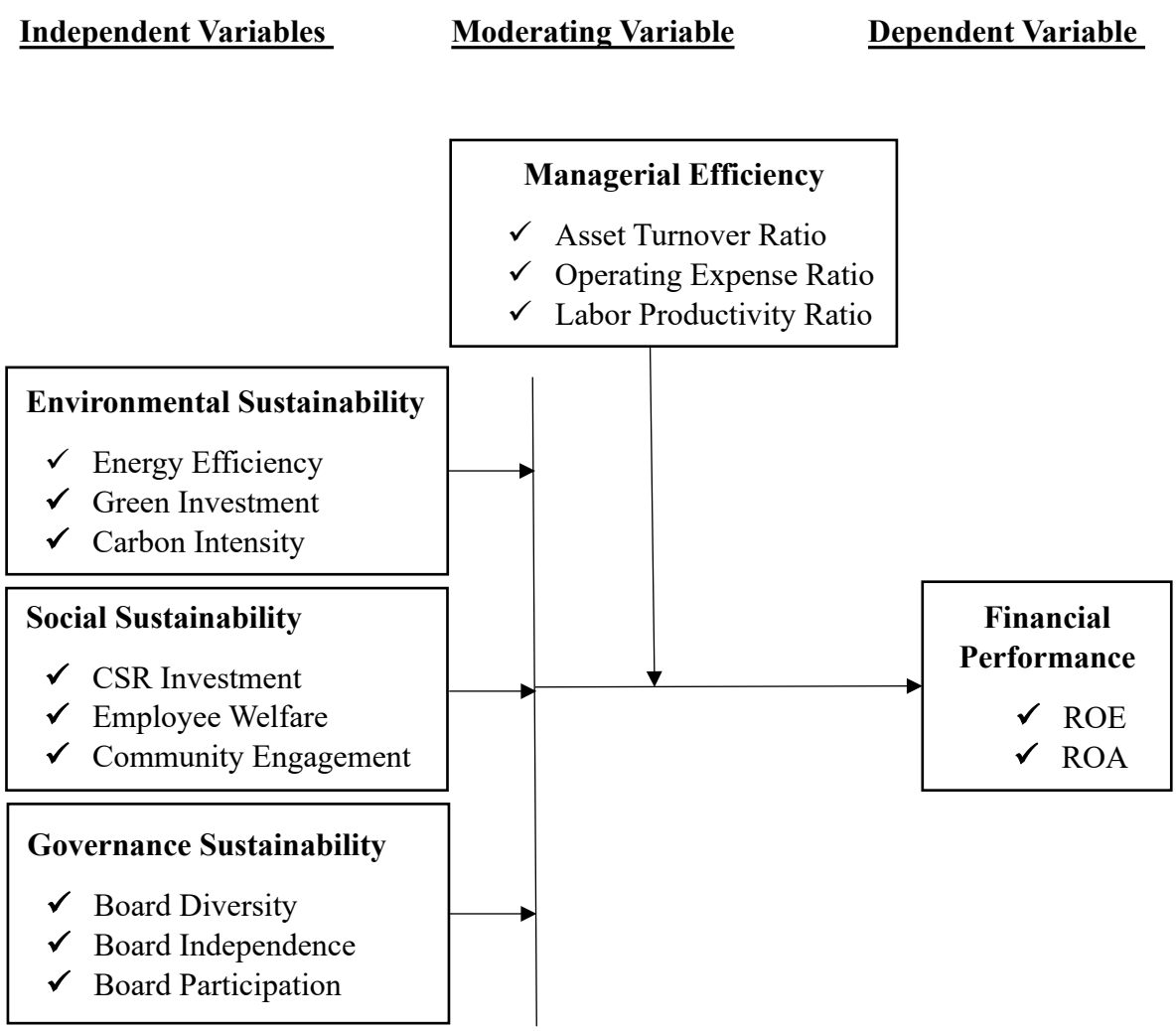
Multiple critical research gaps remained unaddressed in the reviewed literature. First, most studies centred narrowly on financial institutions or developed markets, leaving non-financial sectors in developing markets underrepresented. Second, even though theoretical frameworks acknowledged the significance of internal capabilities, empirical scrutiny of managerial efficiency as a moderator remained scarce and inconsistent. This study sought to address these gaps by exploring how managerial efficiency influences the CS-FP nexus among listed non-financial firms in Kenya thus providing both contextual specificity and theoretical advancement to the field.

2.5 Conceptual Framework

Shikalepo (2020) defines a conceptual framework as the outcome of a diagrammitized relationship between variables. It visually presents the variables of a study (Ulrich et al., 2010). The diagrammatic representation of the variables of this study is as presented in figure 2.1 below:

FIGURE 1

Conceptual Framework



Source: Researcher (2025)

2.6 Operationalization of the Study Variables

TABLE 1

Operationalization of the Study Variables

Variable	Measured Factor	Measurement	Description	Supporting Literature
Environmental Sustainability	Energy Efficiency Ratio	Energy Costs ÷ Operating Revenue	Tracks cost savings from energy management; lower values indicate better efficiency.	Kipngetich & Gatauwa (2024)
	Green Investment Ratio	Environmental Expenditure ÷ Total Assets	Tracks the proportion of resources dedicated to environmental-friendly initiatives; higher values reflect greater investment.	Obiora et al. (2022); Kipngetich & Gatauwa (2024)
	Carbon Intensity Ratio	CO_2 Emissions ÷ Operating Revenue	Measures environmental impact relative to economic output; lower ratios signal cleaner operations.	Kipngetich & Gatauwa (2024)
Social Sustainability	CSR Investment Ratio	Total CSR Expenditure ÷ Operating Revenue	Tracks investment in social initiatives; higher ratios denote stronger commitment.	Waithera (2023); Obiora et al. (2022)
	Employee Welfare Index	(Training + Health & Safety Costs) ÷ Operating Expenses	Assesses firm's internal social responsibility; higher values denote better welfare	Singh & Sørensen (2024)

	Community Engagement Efficiency	Social Projects Implemented ÷ CSR Budget	Measures the number of social projects delivered per unit of CSR spending; higher denotes more social impact per unit.	Ariyo (2023)
Governance Sustainability	Board Diversity Index	Female Directors ÷ Total Board Size	Measures gender inclusivity in leadership; higher values reflect better diversity.	Temba et al. (2023)
	Board Independence Ratio	Independent Directors ÷ Total Board Size	Indicates board's ability to provide unbiased oversight; higher values suggest stronger impartial oversight.	Attridge et al. (2021)
	Board Participation Ratio	Actual Board Meetings Held ÷ Scheduled Meetings	Reflects board's commitment to oversight responsibilities; higher indicates more active governance.	Obiora et al. (2022)

Managerial Efficiency	Asset Turnover Ratio	Operating Revenue ÷ Total Assets	Depicts how management efficiently utilise assets to generate revenue; higher values imply better utilization.	Suleiman et al. (2023); Putra et al. (2023)
	Operating Expense Ratio	Operating Expenses ÷ Operating Revenue	Indicates cost efficiency in operations; lower values indicate better cost efficiency.	Suleiman et al. (2023)
	Labor Productivity Ratio	Operating Revenue ÷ Number of Employees	Reflects workforce productivity; higher values denote better productivity.	Suleiman et al. (2023)
Financial Performance	Return on Equity (ROE)	Net Income ÷ Shareholders' Equity	Measures profitability relative to equity investment; higher values indicate greater performance.	Agutu & Githira (2023); Chininga et al. (2023)
	Return on Assets (ROA)	Net Income ÷ Total Assets	Measures how efficiently a firm uses total assets to generate profit; higher values denote better performance	Obiora et al. (2022)

Source: Researcher (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that is used in the study. It particularly describes the research design, target population, sampling procedure, data collection instrument, the analysis technique used and the diagnostic tests to be applied.

3.2 Research Design

A research design is an accurate and objective strategy used by a researcher to answer research questions in a valid way (Khanday & Khanam, 2019. This study adopted a quantitative technique within a panel data framework to explain the relationship between corporate sustainability, managerial efficiency and financial performance of non-financial firms listed on the NSE. Panel research approach was perfect for explaining cause-and-effect relationship between the observable variables of this research. It particularly established whether sustainability practices, moderated by managerial efficiency significantly affected firm financial performance.

The employment of longitudinal panel design in this research ensured that data collected from the same group of firms across the eight-year period (2017-2024) allowed the study to control for time-invariant unobservable firm characteristics while accounting for both cross-sectional and temporal variations in sustainability practices, managerial efficiency and financial performance (Keiningham et al., 2024). The panel design further supported tracking changes within firms over time, which is critical for evaluating how internal competencies such as managerial efficiency influence the effect of sustainability practices on firm financial outcomes. This research design evaluated dynamic relationships between variables, accounted

for firm-specific effects and improved reliability of research outcomes by avoiding biases associated with purely cross-sectional or time-series designs (Barros et al., 2020).

3.3 Target Population

Willie (2023) defines a target population as a subgroup within a group that is the primary focus of a research. In the current study, our target population was all the 34 non-financial firms listed on the NSE from 2017 to 2024 (*see Appendix B)*. These firms operate in various industries: Agricultural, Automobiles and Accessories, Commercial and Services, Construction and Allied, Energy and Petroleum, Manufacturing and Allied, and Telecommunication and Technology (NSE, 2025).

3.4 Sample & Sampling Procedure

A sample is a subgroup of the target population whose characteristics can be used to draw inferences and conclusion on the entire population (Ahmad, 2023). A sampling procedure on the other hand refers to the process and methods used to choose a subgroup of the target population that will be studied and whence conclusions will be drawn (Van Haute, 2021). This paper adopted census technique to include all non-financial firms listed on the NSE from 2020-2024.

The choice of census approach was informed by the relatively small size target population and the desire to draw conclusions that are generalizable to all listed non-financial firms in Kenya. Census eliminates sample-selection bias and bolsters external validity of the findings (Csata et al., 2021). By eliminating the need for inferential statistics and allowing for direct analysis, this approach gave more precise and reliable conclusions.

3.5 Instrumentation

This study used a structured data extraction sheet (Appendix A) to systematically extract relevant secondary quantitative data from annual reports such as integrated reports, audited financial statements, sustainability reports and corporate governance disclosure reports of

listed non-financial firms in Kenya from 2020 to 2024. The data extraction sheet was in excel for ease of calculating the ratios and finally aggregating them into composites that can be applied to statistical analysis for the study of the relationship between variables.

Each data point in the spreadsheet was recorded in a panel format clearly indicating the Firms, the years and each quantifiable measurement element. Data extraction sheet ensures accuracy, consistency and replicability in the process of data collection (Li et al., 2019). Moreover, the instrument facilitates detection of errors during data cleaning and bolsters the ease of transferring data to statistical software.

3.6 Data Collection

This study employed secondary data extracted from publicly accessible sources for the period 2020-2024. The choice of secondary sources of data was superb since they provide a wealth of pre-existing information that is readily available and factual (Boslaugh & Boslaugh, 2007; White, 2010). Audited financial reports contain mostly financial information, sustainability reports majorly contain ESG disclosures and Integrated report contain both financial and ESG disclosures (Deloitte, 2022). This study therefore systematically reviewed and extracted data from such reports published on official company websites, NSE website and CMA online portal. Guided by the data extraction form in Appendix A, the data collection process was as follows: download reports, review each report to identify specific data points in alignment with each measured factor and finally record the data on the extraction sheet.

3.7 Data Analysis

Data analysis, according to Islam (2020), is the "process of cleaning, transforming, and modeling data to discover useful information for business decision-making." Imputed means were used in this study to fill gaps in data within each variable in the excel dataset. This approach minimized loss of data, preserving the representativeness of the dataset. Potential outliers were detected using box plots in STATA and identified outliers were treated through

replacement with the nearest non-outlier value. This adjustment ensured the dataset was rid of distortions caused by extreme observations and at the same time retaining the distributional feature of the variables. The dataset was declared as panel data and the outcome was strongly balanced. The use of STATA was particularly justified in this study due to its advanced econometrics capabilities, its ability to manage large datasets and its ability to perform various diagnostic tests that are essential for panel data modeling. The study employed fixed effect model regression technique to establish the relationship between corporate sustainability and firm financial performance and to examine the moderating effect of managerial efficiency on this relationship.

3.7.1 Model Specification and Diagnostic Tests

Longitudinal analysis was conducted and the following model panel regression equation sufficed:

$$FP_{it} = \beta_0 + \beta_1 ENV_{¿} + \beta_2 SOC_{¿} + \beta_3 GOV_{¿} + \beta_4 ME_{¿} + \beta_5 (ENV_{¿} \times ME_{¿}) + \beta_6 (SOC_{¿} \times ME_{¿}) + \beta_7 (GOV_{¿} \times ME_{¿}) -$$

Where:

FP_{it} = Financial performance of firm i at time t (measured using ROE and ROA)

$ENV_{¿}$ = Environmental sustainability index (best factor among the three measured factors)

$SOC_{¿}$ = Social sustainability index

$GOV_{¿}$ = Governance sustainability index

$ME_{¿}$ = Managerial efficiency (moderating variable)

$ENV_{¿} \times ME_{¿}$, etc. = Interaction terms to test the moderation effect

$\varepsilon_{¿}$ = Error term

β_0 = Regression constant

$\beta_1 - \beta_7$= Coefficients of the independent and moderating variables to be estimated

For purposes of pragmatism in the regression equation above, stepwise regression analysis was conducted in order to identify and apply the most representative measured factor for each ESG sustainability dimension and managerial efficiency variable. Each measured factor for ESG sustainability dimensions and the managerial efficiency variable was regressed with financial performance. The factor with the highest adjusted t-value and $P<0.05$ was selected to represent each variable. The use of stepwise regression technique ensured that only the measured factors meeting statistical criteria and explaining the most variation in financial performance were retained for modeling. This technique also enhanced both interpretability and parsimony (Gregorich et al., 2021).

Findings from data analysis of this study were be presented using tables.

Diagnostic tests are techniques used to establish the presence or degree of inherent challenges in the dataset to be employed or the model adopted by the study (Ravand & Baghaei, 2020). To ensure the robustness of the model specification and the correctness of the dataset and adopted model, the study conducted the following diagnostic tests:

3.7.1.1 Normality Test

This test ensures that data is normally distributed (Yang & Berdine, 2021). In this study, we tested for skewness and kurtosis using the Jarque-Bera test, the outcomes which informed us whether our residuals were or were not normally distributed. Where $P \leq 0.05$, we rejected $H_{0,}$ for residuals were not normally distributed. Where $P>0.05$, we failed to reject $H_{0,}$ for residuals were normally distributed.

3.7.1.2 Multicollinearity Test

This test assesses whether there exists intercorrelation between independent variables (Kim, 2019). This study applied Variance Inflation Factor to detect multicollinearity amongst independent variables. VIF<4.0 would be considered not a major problem, VIF>4.0 would indicate presence of multicollinearity and would therefore need to be dropped, likewise to

VIF>10 which would show severe multicollinearity. This test ensures the independence of the predictor variables.

3.7.1.3 Heteroscedasticity Test

Regression model assumes that the variance of the error term remains constant throughout time (Homoscedasticity). If the variance does change over time there is presence of heteroscedasticity (Kaufman, 2013). This study applied heteroskedasticity test and if $P \leq 0.05$, we would reject the H_0 since it would mean presence of heteroscedasticity but if $P > 0.05$, we would fail to reject the H_0 since there would exist homoscedasticity. We would make use of robust regression if our test showed the existence of heteroscedasticity.

3.7.1.4 Autocorrelation

This is the association among the error terms of variables across time in a study (Chaudhary et al., 2022). We used the Wooldridge test to establish whether there exists autocorrelation among our variables' error terms. If $p \leq 0.05$, we would reject H_0 since this would denote the presence of autocorrelation and we would adopt the alternative.

3.7.1.5 Hausman Test

This study adopted Hausman test to establish whether it would employ Fixed Effect or Random Effect model in its panel regression analysis. The choice of FE or RE model depended on the outcome of the test where $P<0.05$ would denote firm-specific unobserved effects are correlated with independent variables; thus, reject H_0 and use FE. If $P>0.05$; accept H_0 and use RE.

CHAPTER 4

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents data analyses and the results thereof. Stata/IC 16.0 was used to conduct descriptive statistics, correlational analysis, diagnostic tests and regression analysis. The results were presented in tables and finally discussed.

4.2 Variables Selection

Forward stepwise regression was employed to determine the best indicator for independent and moderating variables: environmental sustainability, social sustainability, governance sustainability, and managerial efficiency. All the indicators were linearly regressed against ROE and ROA—measures of financial performance. Only those indicators with the highest absolute t-values and statistically significant ($p<0,05$) were retained in the model.

4.2.1 Stepwise Regression Outcome with ROE

Stepwise regression analysis with Return on Equity (ROE) as the measurement for financial performance retained nine statistically significant indicators at the 5% level as shown in table 2 below. Green Investment Ratio, Employee Welfare Index, Board Diversity Index and Labour Productivity Ratio were selected as the indicators for environmental sustainability, social sustainability, governance sustainability and menagerial efficiency consecutively.

TABLE 2

Stepwise regression outcome (ROE Model)

note: BoardParticipationRatio dropped because of collinearity
begin with full model
p = 0.8514 >= 0.1000 removing AssetTurnoverRatio
p = 0.8015 >= 0.1000 removing BoardIndependenceRatio

Source	**SS**	**df**	**MS**	Number of obs	=	160
Model	2.216	9	0.322	F (9, 150)	=	39.41
Residual	0.937	150	0.012	Prob>F	=	0.0000
Total	**3.153**	**159**	**0.020**	R-squared	=	0.703
				Root MSE	=	0.079

ReturnonEquityROE	**Coef.**	**Std.Err.**	**t**	**P>t**	**[95%Conf.**	**Interval]**
EnergyEfficiencyRatio	0.030	0.008	3.900	0.000	0.015	0.045
GreenInvestmentRatio	0.033	0.007	4.960	0.000	0.020	0.047
CarbonIntensityRatio	0.029	0.007	4.230	0.000	0.015	0.043
CSRInvestmentRatio	0.021	0.007	3.000	0.003	0.007	0.035
EmployeeWelfareIndex	0.024	0.007	3.360	0.001	0.010	0.038
CommunityEngagementEfficiency	0.021	0.007	3.010	0.003	0.007	0.035
BoardDiversityIndex	-0.229	0.067	-3.400	0.001	-0.362	-0.096
OperatingExpenseRatio	-0.122	0.051	-2.400	0.018	-0.224	-0.021
LaborProductivityRatio	2.010	0.502	4.010	0.000	1.018	3.001
_cons	-0.175	0.069	-2.530	0.013	-0.312	-0.038

4.2.2 Stepwise Regression Outcome with ROA

Using ROA as the measure for Financial Performance, stepwise regression retained eight indicators in the model as shown in table 3 below. Out of the eight retained measured factors, green investment ratio, community engagement efficiency, board diversity index and operating expense ratio were selected for proxying environmental sustainability, social sustainability, governance sustainability and managerial efficiency respectively.

To ensure consistency, comparability, and coherence between ROE and ROA models however, the study compared the indicators retained in the two models and selected the ones that had greater t-values for use in each model in successive analyses. Green investment ratio and board diversity index were consistent proxies for environmental sustainability and governance sustainability in both the ROE and the ROA models. For social sustainability, ROE model retained employee welfare index (t=3.360) while ROA model retained community engagement efficiency (t=3.580). The study adopted community engagement efficiency as the proxy for social sustainability. Finally, for managerial efficiency, ROE model retained labour productivity ratio (t=4.010) while ROA model retained operating expense ratio (t=-4.860). The study thus adopted operating expense ratio as the proxy for managerial efficiency. This approach reduced future possible distortions that could arise from using non-uniform proxies across models and provided a unified framework for subsequent analysis.

TABLE 3

Stepwise regression outcome (ROA Model)

note: BoardParticipationRatio dropped because of collinearity
begin with full model
p = 0.9327 >= 0.1000 removing AssetTurnoverRatio
p = 0.6125 >= 0.1000 removing BoardIndependenceRatio
p = 0.3564 >= 0.1000 removing LaborProductivityRatio

Source	**SS**	**df**	**MS**	Number of obs	=	160
Model	0.330	8	0.041	F (8, 151)	=	39.15
Residual	0.159	151	0.001	Prob>F	=	0.0000
				R-squared	=	0.675
				Root MSE	=	0.032

ReturnonAssetROA	**Coef.**	**Std.Err.**	**t**	**P>t**	**[95%Conf.**	**Interval]**
EnergyEfficiencyRatio	0.015	0.003	4.890	0.000	0.009	0.021
GreenInvestmentRatio	0.014	0.003	4.960	0.000	0.008	0.019
CarbonIntensityRatio	0.008	0.003	2.940	0.004	0.003	0.014
CSRInvestmentRatio	0.008	0.003	2.800	0.006	0.002	0.014
EmployeeWelfareIndex	0.009	0.003	3.140	0.002	0.003	0.015
CommunityEngagementEfficiency	0.010	0.003	3.580	0.000	0.005	0.016
BoardDiversityIndex	-0.055	0.026	-2.160	0.032	-0.106	-0.005
OperatingExpenseRatio	-0.097	0.020	-4.860	0.000	-0.137	-0.058
_cons	-0.023	0.028	-0.830	0.409	-0.080	0.033

4.3 Descriptive Statistics

Descriptive analysis is a technique of presenting data summarily in an eloquent and comprehensible way (Kothari, 2014). As presented in table 4 below, the reported means are arithmetic averages of the single proxy indicators retained through stepwise regression for each of the predictor variable and the moderating variable. Environmental sustainability shows an average green investment ratio (environmental expenditure relative to total assets) of 2.49, a standard deviation of 0.99 and a minimum green investment ratio of 0 and a maximum of 4.983. Social sustainability indicates an average community engagement efficiency (projects delivered per CSR spend) of 2.556 and a standard deviation of 1, with scores ranging from 0 (no engagement) to 4.896 (high engagement). Governance Sustainability shows an average board diversity index (female directors ÷ board size) of 0.247 and a standard deviation of 0.109, where observed diversity ranged from 6.7% to 50%. Managerial Efficiency indicates an average operating expense ratio (expenses relative to revenue) of 0.915 and a standard deviation of 0.15, with a spread from 0.611 to 1.183 across firms. ROE shows an average net income relative to shareholders' equity of 0.101 and a standard deviation of 0.141, with minimum and maximum values ranging between -0.167 and 0.345. Lastly, ROA records an average net income relative to total assets of 0.041 and a standard deviation of 0.055, with a spread from -0.08 to 0.135 across firms and years.

TABLE 4

Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
ENV	Overall	2.49	0.99	0	4.983	N = 160
	Between		0.456	1.736	3.233	n = 20
	Within		0.884	0.127	4.864	T = 8
SOC	Overall	2.556	1	0	4.896	N = 160
	Between		0.489	1.72	3.922	n = 20
	Within		0.878	0.202	4.903	T = 8
GOV	Overall	0.247	0.109	0.067	0.5	N = 160
	Between		0.102	0.091	0.4	n = 20
	Within		0.043	0.099	0.397	T = 8
ME	Overall	0.915	0.15	0.611	1.183	N = 160
	Between		0.135	0.674	1.182	n = 20
	Within		0.07	0.751	1.159	T = 8
ROE	Overall	0.101	0.141	-0.167	0.345	N = 160
	Between		0.109	-0.042	0.337	n = 20
	Within		0.093	-0.247	0.487	T = 8
ROA	Overall	0.041	0.055	-0.08	0.135	N = 160
	Between		0.042	-0.039	0.135	n = 20
	Within		0.038	-0.087	0.189	T = 8

4.4 Correlation Analysis

Correlation analysis was conducted to determine the strength of the effect of Environmental sustainability, social sustainability, Governance sustainability and Managerial efficiency on financial performance of listed non-financial firms in Kenya.

4.4.1 Pairwise correlations—ROE model

Results in table 5 below shows that environmental sustainability ($r = 0.452$, $p < 0.05$) has a positive and statistically significant effect on financial performance (ROE). Social sustainability($r=0.443$, $p<0.05$) has a positive and statistically significant effect on financial performance. Finally, governance sustainability ($r=0.014$, $p>0.05$) has a positive but statistically insignificant effect on financial performance (ROE). These results imply that investments in environmental and social sustainability bolster financial performance but

investment in governance sustainability practices have no significant effect on the financial performance of listed non-financial firms in Kenya.

TABLE 5

Pairwise correlations—ROE model

Variables	(1)	(2)	(3)	(4)
(1) ROE	1.000			
(2) ENV	0.452*	1.000		
	(0.000)			
(3) SOC	0.443*	0.125	1.000	
	(0.000)	(0.114)		
(4) GOV	0.014	0.005	0.116	1.000
	(0.856)	(0.946)	(0.146)	

**** p<0.01, ** p<0.05, * p<0.1*

4.4.2 Pairwise correlations—ROA model

Pairwise correlation results in table 6 with ROA as the measure of financial performance indicates that environmental sustainability (r=0.437, p<0.05) has a positive and statistically significant influence on financial performance (ROA). Likewise, social sustainability (r=0.480, p<0.05) has a positive and statistically significant effect on financial performance. Finally, governance sustainability (r=0.010, p>0.05) has a positive and statistically insignificant effect on financial performance. These results imply the same as those of the ROE model, that, investment in environmental and social sustainability initiatives increases the financial performance of firms but investment in governance sustainability practices doesn't significantly increase financial performance of listed non-financial firms in Kenya.

TABLE 6

Pairwise correlations—ROA model

Variables	(1)	(2)	(3)	(4)
(1) ROA	1.000			
(2) ENV	0.437*	1.000		
	(0.000)			
(3) SOC	0.480*	0.125	1.000	
	(0.000)	(0.114)		
(4) GOV	0.010	0.005	0.116	1.000
	(0.897)	(0.946)	(0.146)	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.5 Diagnostic Tests

This study conducted several diagnostic tests to ensure the validity and robustness of the model. These diagnostic tests included: normality test, multicollinearity test, heteroscedasticity test, Hausman fixed or random effects test and autocorrelation test.

4.5.1 Normality Test

The Jarque Bera test of normality measures the skewness and kurtosis of residuals to determine the normality of data distribution (Yang & Berdine, 2021). Criteria for this test is if $p<0.05$, the null hypothesis is rejected, otherwise, fail to reject it.

ROE model test results for normality as shown in table 7 shows a chi-square statistic of 3.200 with a probability value of 0.202, which is greater than the 0.05 level of significance. Similarly, the individual probabilities for skewness (0.089) and kurtosis (0.613) were all above 0.05 indicating that neither skewness nor kurtosis departs significantly from normal distribution. These findings provide sufficient evidence to fail to reject the null hypothesis of normality which asserts that the error terms are normally distributed. This implies that the ROE regression model satisfies the normality assumption, and the parameter estimates can therefore be considered appropriate and adopted for further analysis.

TABLE 7

Jarque Bera test of normality—ROE model

Skewness/Kurtosis tests for Normality
------ joint ------

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
resid	160	0.089	0.613	3.200	0.202

Similarly, Jarque Bera test of normality for the ROA model as shown in table 8 indicates a chi-square statistic of 1.120 and p=0.571, which is more than 0.05. Individual skewness (p<0.431) and kurtosis (p<0.486) probabilities are above 0.05 level of significance, showing that both skewness and kurtosis do not significantly depart from normal distribution. These findings provide sufficient evidence to accept the null hypothesis of normality which affirms that the error terms are normally distributed. This implies that the ROA regression model also satisfies the assumption of normality and the parameter estimates can therefore be considered appropriate and adopted for further analysis.

TABLE 8

Jarque Bera test of normality—ROA model

Skewness/Kurtosis tests for Normality
------ joint ------

Variable	Obs	Pr(Skewnes)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
resid	160	0.431	0.486	1.120	0.571

4.5.2 Multicollinearity Test

A multicollinearity test was conducted to evaluate the degree of interrelationship among the predictor variables. The test was performed using variance inflation factors (VIFs) and tolerance levels. VIF values between 1 and 10 are acceptable, beyond which indicates the presence of severe multicollinearity. Table 10 presents the results of this test.

The results indicated that Managerial efficiency, social sustainability, Governance sustainability and Environmental sustainability had VIF values of 1.170, 1.110, 1.080 and 1.020 respectively, with a mean VIF of 1.100. The findings provided sufficient evidence to confirm that the proxies for environmental, social, and governance sustainability, together with managerial efficiency are not highly correlated with one another, and thus each variable contributes unique explanatory power to the both models without inflating standard errors.

TABLE 9

Multicollinearity Test

	VIF	1/VIF
ME	1.170	0.852
SOC	1.110	0.898
GOV	1.080	0.930
ENV	1.020	0.979
Mean VIF	1.100	

4.5.3 Heteroscedasticity Test

The Breusch–Pagan/Cook–Weisberg test for heteroskedasticity was conducted to examine whether the variance of the error terms in the ROE and ROA model is constant.

The test produced a chi-square statistic of 0.71 with a probability of 0.3981 as indicated in table 10. Since p> 0.05, the study fails to reject the null hypothesis of homoscedasticity. This result implies that the variance of the residuals is constant across observations, and hence the dataset does not suffer from heteroskedasticity.

TABLE 10

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity—ROE model

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of ROE chi2(1) = 0.71 Prob > chi2 = 0.3981

Test results for ROA model produced a chi-square statistic of 1.25 and p<0.2629 which is greater than 0.05 as indicated in table 11 below. Since p>0.05, the study accepts the null hypothesis that the dataset does not suffer from het8eroskedasticity. This result implies that the variance of the residuals is constant across observations, and hence homoscedasticity is present.

TABLE 11

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity—ROA model

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity Ho: Constant variance Variables: fitted values of ROA chi2(1) = 1.25 Prob > chi2 = 0.2629

4.5.4 Hausman Test of Fixed/Random Effects

Hausman test was used to determine the appropriate estimation technique between the fixed effects and random effects models. The results, for ROE, as presented in table 12 indicates a chi-square of 230.006 and p<0.000, which is less than the 0.05 level of significance. The study therefore rejected the null hypothesis that the random effects model is the preferred specification, and adopted the fixed effects model.

TABLE 12

Hausman (1978) specification test—ROE model

	Coef.
Chi-square test value	230.006
P-value	0.000

Similarly, the results for ROA, as presented in table 13 indicates a chi-square of 10.276 and p<0.036, which is less than the 0.05 level of significance. The study therefore rejected the null hypothesis that the random effects model is the preferred specification, and adopted the fixed effects model.

TABLE 13

Hausman (1978) specification test—ROA model

	Coef.
Chi-square test value	10.276
P-value	0.036

4.5.5 Autocorrelation

Wooldridge test for autocorrelation in panel data was employed to establish whether the residuals of both the ROE and ROA model are serially correlated over time. The test for the ROE model yielded an F-statistic of 0.152 and probability value of 0.7013 as shown in table 14 below. Since the p-value is greater than the 0.05, the study adopts the null hypothesis of no first-order autocorrelation. This indicates that the residuals are not serially correlated, asserting that the model does not suffer from autocorrelation problems.

TABLE 14

Wooldridge test for autocorrelation in panel data—ROE model

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
   F(  1,      19) =      0.152
         Prob > F =      0.7013
```

Likewise the the study concludes that the ROA model does not suffer from autocorrelation since it yielded an F-statistic of 1.001 and probability value of 0.3297 which is greater than the 0.05 significance level as shown in table 15 as follows.

TABLE 15

Wooldridge test for autocorrelation in panel data—ROA model

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
   F(  1,      19) =      1.001
         Prob > F =      0.3297
```

4.6 Inferential Statistics

4.6.1 Fixed Effects Regression Analysis—Baseline Model

The main purpose of the study was to establish the effect of environmental, social, and governance sustainability on the financial performance of listed non-financial firms in Kenya with managerial efficiency as a moderating variable. Without the moderating effect of managerial efficiency, the results in table 16 below show that 21.30% of variations in financial performance (ROE) is caused by environmental sustainability, social sustainability and governance sustainability while 78.70% is caused by factors not described in the model. The F-statistic of 12.364 with a p-value of 0.000 indicates that the fixed effects model was statistically significant and fit for examining the relationships between environmental sustainability, social sustainability, governance sustainability and financial performance.

The first hypothesis of the study stated that environmental sustainability has no significant effect on financial performance. The results show that environmental sustainability has a positive statistically significant relationship with financial performance ($\beta = 0.031$, $p < 0.000$). This implies that a unit increase in environmental sustainability increases financial performance by 0.031 holding social sustainability and governance sustainability constant.

The second hypothesis stated that social sustainability has no significant effect on financial performance. Results indicate that social sustainability has a positive and statistically significant relationship with financial performance ($\beta = 0.035$, $p < 0.000$). This implies that a unit increase in social sustainability leads to a 0.035 increase in financial performance holding environmental sustainability and governance sustainability constant.

The third hypothesis stated that governance sustainability has no significant effect on financial performance. The findings show that governance sustainability has a negative statistically insignificant relationship with financial performance ($\beta = -0.218$, $p < 0.185$). This

implies that a unit increase in governance sustainability leads to 0.218 decrease in financial performance holding environmental sustainability and social sustainability constant.

TABLE 16

Regression results—Baseline ROE model

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ENV	.031	.008	3.95	0	.016	.047	***
SOC	.035	.008	4.33	0	.019	.05	***
GOV	-.218	.164	-1.33	.185	-.542	.105	
Constant	-.012	.049	-0.25	.803	-.11	.085	
Mean dependent var		0.101	SD dependent var			0.141	
R-squared		0.213	Number of obs			160	
F-test		12.364	Prob > F			0.000	
Akaike crit. (AIC)		-338.756	Bayesian crit. (BIC)			-326.455	

*** *p<.01, ** p<.05, * p<.1*

Similarly, the results of the baseline ROA model as shown in table 17 indicates that 27.60% of changes in financial performance (ROA) is caused by environmental sustainability, social sustainability and governance sustainability while 72.40% is caused by factors not included in the model. The F-statistic of 17.451 with a p-value of 0.000 indicates that the fixed effects model was statistically significant and fit for examining the relationships between environmental sustainability, social sustainability, governance sustainability and financial performance.

The first hypothesis of the study stated that environmental sustainability has no significant effect on financial performance. The results show that environmental sustainability has a positive statistically significant relationship with financial performance ($\beta = 0.014$, $p < 0.000$). This implies that a unit increase in environmental sustainability increases financial performance by 0.014 holding social sustainability and governance sustainability constant.

The second hypothesis stated that social sustainability has no significant effect on financial performance. Findings show that social sustainability has a positive statistically significant relationship with financial performance ($\beta = 0.016$, $p < 0.000$). This suggests that a unit increase in social sustainability leads to a 0.016 increase in financial performance holding environmental sustainability and governance sustainability constant.

The third hypothesis stated that governance sustainability has no significant effect on financial performance. The results indicate that governance sustainability has a negative statistically significant relationship with financial performance ($\beta = -0.127$, $p < 0.048$). This indicates that that a unit increase in governance sustainability leads to 0.127 decrease in financial performance holding environmental sustainability and social sustainability constant.

TABLE 17

Regression results—Baseline ROA model

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ENV	.014	.003	4.60	0	.008	.02	***
SOC	.016	.003	5.10	0	.01	.022	***
GOV	-.127	.064	-2.00	.048	-.254	-.001	**
Constant	-.003	.019	-0.18	.861	-.041	.035	
Mean dependent var		0.041	SD dependent var			0.055	
R-squared		0.276	Number of obs			160	
F-test		17.451	Prob > F			0.000	
Akaike crit. (AIC)		-640.359	Bayesian crit. (BIC)			-628.058	

*** *p<.01, ** p<.05, * p<.1*

4.6.2 Fixed Effects Regression Analysis—Moderating Effect Model

Results of the fixed effects regression analysis with moderating effects of managerial efficiency as presented in table 18 below show that 33.30% of changes in financial performance (ROE) are explained by environmental sustainability, social sustainability, governance sustainability, managerial efficiency and the interaction terms while the remaining 66.70% is explained by

factors not included in the model. The F-statistic of 9.491 with a p-value of 0.000 indicates that the fixed effects model was statistically significant and fit for examining the relationships between environmental sustainability, social sustainability, governance sustainability, managerial efficiency, the interaction terms and financial performance.

The results show that there is a negative and statistically insignificant relationship between environmental sustainability and financial performance (β =-0.082, $p < 0.069$). This indicates that a unit increase in environmental sustainability leads to 0.082 decrease in financial performance holding social sustainability, governance sustainability, managerial efficiency and the interaction terms constant.

Further, the results show that Social sustainability has a negative and statistically significant relationship with financial performance (β =-0.12, $p < 0.036$). This suggests that a unit increase in social sustainability causes a 0.12 reduction in financial performance holding environmental sustainability, governance sustainability, managerial efficiency and the interaction terms constant.

The results also indicate that governance sustainability has a positive and statistically insignificant relationship with financial performance (β =0.806, $p < 0.206$). This implies that a unit increase in governance sustainability leads to a 0.806 increase in financial performance holding environmental sustainability, social sustainability, managerial efficiency and the interaction terms constant.

The fourth hypothesis stated that managerial efficiency has no significant effect on financial performance. The results show that on its own, managerial efficiency has a negative and statistically significant relationship with financial performance (β =-0.713, $p < 0.017$). This indicates that a unit increase in managerial efficiency leads to a 0.713 decrease in financial performance holding environmental sustainability, social sustainability, governance sustainability and the interaction terms constant.

However, on interaction with ESG elements, the interaction between environmental sustainability and managerial efficiency shows that there is a positive and statistically significant relationship between the interaction term of environmental sustainability and managerial efficiency and financial performance (β =0.12, $p < 0.013$). This implies that a unit increase in the interaction between environmental sustainability and managerial efficiency leads to a 0.12 rise in financial performance holding ENV, SOC, GOV, ME, SOC×ME and GOV×ME constant. This confirms that managerial efficiency enhances the relationship between environmental sustainability and financial performance.

The results further indicate that the interaction between social sustainability and managerial efficiency has a positive and statistically significant relationship with financial performance (β =0.165, $p < 0.008$). This suggests that a unit increase in the interaction between social sustainability and managerial efficiency increases financial performance by 0.165 holding ENV, SOC, GOV, ME, ENV×ME and GOV×ME constant. This proves that ME enhances the relationship between social sustainability and financial performance.

Finally, the results indicate that the interaction between governance sustainability and managerial efficiency has a negative and statistically insignificant relationship with financial performance (β =-1.258, $p < 0.096$). It implies that a unit increase in the interaction between governance sustainability and managerial efficiency decreases financial performance by 1.258 holding ENV, SOC, GOV, ME, ENV×ME and SOC×ME constant. This shows that managerial efficiency diminishes the relationship between governance sustainability and financial performance but the effect is not significant.

Based on the results in table 18, the fitted model is expressed as:

$$ROE_{it} = 0.694 - 0.082\,ENV_{¿} - 0.12\,SOC_{¿} + 0.806\,GOV_{¿} - 0.713\,ME_{¿} + 0.12\left(ENV_{¿} \times ME_{¿}\right) + 0.165\left(SOC_{¿} \times M\right.$$

TABLE 18

Regression results—Moderated ROE model

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ENV	-.082	.045	-1.83	.069	-.171	.007	*
SOC	-.12	.057	-2.12	.036	-.232	-.008	**
GOV	.806	.633	1.27	.206	-.447	2.058	
ME	-.713	.295	-2.42	.017	-1.296	-.13	**
ENV×ME	.12	.048	2.51	.013	.025	.215	**
SOC×ME	.165	.062	2.68	.008	.043	.287	***
GOV×ME	-1.258	.75	-1.68	.096	-2.742	.225	*
Constant	.694	.271	2.56	.012	.158	1.23	**

Mean dependent var	0.101	SD dependent var	0.141
R-squared	0.333	Number of obs	160
F-test	9.491	Prob > F	0.000
Akaike crit. (AIC)	-357.242	Bayesian crit. (BIC)	-332.641

*** $p<.01$, ** $p<.05$, * $p<.1$

Results of the ROA fixed effects regression analysis with moderating effects of managerial efficiency as presented in table 19 below show that 43.40% of changes in financial performance (ROA) are explained by environmental sustainability, social sustainability, governance sustainability, managerial efficiency and the interaction terms while the remaining 56.50% is explained by factors not described in the model. The F-statistic of 14.576 with a p-value of 0.000 indicates that the fixed effects model was statistically significant and fit for examining the relationships between environmental sustainability, social sustainability, governance sustainability, managerial efficiency, the interaction terms and financial performance.

The results show that there is a negative and statistically significant relationship between environmental sustainability and financial performance (β =-0.039, $p < 0.023$). This suggests that a unit increase in environmental sustainability leads to 0.039 decrease in financial performance, holding social sustainability, governance sustainability, managerial efficiency and the interaction terms constant.

Results further show that Social sustainability has a negative and statistically significant relationship with financial performance (β =-0.053, $p < 0.014$). This implies that a unit increase in social sustainability causes a 0.053 fall in financial performance holding environmental sustainability, governance sustainability, managerial efficiency and the interaction terms constant.

The results indicate that governance sustainability has a positive and statistically insignificant relationship with financial performance (β =0.389, $p < 0.103$). This indicates that a unit increase in governance sustainability leads to a 0.389 increase in financial performance holding environmental sustainability, social sustainability, managerial efficiency and the interaction terms constant.

The fourth hypothesis stated that managerial efficiency has no significant effect on financial performance. The results show that on its own, managerial efficiency has a negative and statistically significant relationship with financial performance (β =-0.312, $p < 0.005$). This implies that a unit increase in managerial efficiency leads to a 0.312 decrease in financial performance holding environmental sustainability, social sustainability, governance sustainability and the interaction terms constant.

However, on interaction with ESG elements, the interaction between environmental sustainability and managerial efficiency shows that there is a positive and statistically significant relationship between the interaction term of environmental sustainability and managerial efficiency, and financial performance (β =0.056, $p < 0.002$). This suggests that a unit increase in the interaction between environmental sustainability and managerial efficiency leads to a 0.056 rise in FP holding environmental sustainability, social sustainability, governance sustainability, managerial efficiency, SOC×ME and GOV×ME constant. This confirms that managerial efficiency enhances the relationship between environmental sustainability and financial performance.

The results further indicate that the interaction between social sustainability and managerial efficiency has a positive and statistically significant relationship with financial performance (β =0.073, p < 0.002). It suggests that a unit increase in the interaction between social sustainability and managerial efficiency increases financial performance by 0.073 holding environmental sustainability, social sustainability, governance sustainability, managerial efficiency ENV×ME and GOV×ME constant. This proves that ME enhances the relationship between social sustainability and financial performance.

Finally, the results indicate that the interaction between governance sustainability and managerial efficiency has a negative and statistically significant relationship with financial performance (β =-0.635, p < 0.025). This implies that a unit increase in the interaction between governance sustainability and managerial efficiency decreases financial performance by 0.635 holding environmental sustainability, social sustainability, governance sustainability, managerial efficiency ENV×ME and SOC×ME constant. This ascertains that managerial efficiency diminishes the nexus between governance sustainability and financial performance. Based on the results in table 19, the fitted model is expressed as:

$$ROA_{it} = 0.308 - 0.039\,ENV_{¿} - 0.053\,SOC_{¿} + 0.389\,GOV_{¿} - 0.312\,ME_{¿} + 0.056\left(ENV_{¿} \times ME_{¿}\right) + 0.073\left(SOC_{¿}$$

TABLE 19

Regression results—Moderated ROA model

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ENV	-.039	.017	-2.30	.023	-.072	-.005	**
SOC	-.053	.021	-2.49	.014	-.095	-.011	**
GOV	.389	.237	1.64	.103	-.079	.858	
ME	-.312	.11	-2.83	.005	-.53	-.094	***
ENV×ME	.056	.018	3.13	.002	.021	.092	***
SOC×ME	.073	.023	3.17	.002	.027	.119	***
GOV×ME	-.635	.281	-2.26	.025	-1.19	-.079	**
Constant	.308	.101	3.04	.003	.107	.509	***
Mean dependent var		0.041	SD dependent var			0.055	
R-squared		0.434	Number of obs			160	
F-test		14.576	Prob > F			0.000	
Akaike crit. (AIC)		-671.676	Bayesian crit. (BIC)			-647.074	

*** *p<.01, ** p<.05, * p<.1*

4.6 Discussion

4.6.1 Environmental Sustainability and Financial Performance

The first objective of this study was to investigate the relationship between social sustainability integration and the financial performance of listed non-financial firms in Kenya. The null hypothesis H01: Environmental sustainability has no significant effect on the financial performance of listed non-financial firms in Kenya was tested. Results of the baseline fixed effects regression model showed that environmental sustainability had a positive and statistically significant effect on financial performance for both ROE ($\beta = 0.031$, $p < 0.000$) and ROA ($\beta = 0.014$, $p < 0.000$) models. This implies that a unit increase in environmental sustainability practices such as efficient use of energy, investments in green initiatives and reduction of carbon emissions raises firm financial performance while holding all other factors in the model constant. On the other hand, when moderating effects of Managerial efficiency was added in the model the positive and significant effect of environmental sustainability on

financial performance turned negative and statistically insignificant in ROE model (β =-0.082, p < 0.069) but negative and statistically significant in the ROA model (β =-0.039, p < 0.023). The reason being, without moderation, the effects of environmental sustainability are beneficial to financial performance but when moderating effects of managerial efficiency are introduced, its negative effects offset the positive influence of environmental sustainability on financial performance turning it negative. Notably, the interaction term between environmental sustainability and managerial efficiency showed a positive and statistically significant effect on financial performance in both the ROE (β =0.12, p < 0.013) and ROA (β =0.056, p < 0.002) models. This implies that managerial efficiency enhances the benefit of environmental sustainability practices on the financial performance of listed non-financial firms in Kenya.

This contrast implies that only when guided by a capable management that aligns environmental initiatives with firm strategies can firms yield financial benefits. These findings support the Resource Based View (RBV) concept by outlining managerial efficiency as valuable, rare, inimitable and a non-substitutable resource that facilitates conversion of environmental initiatives into meaningful financial outcomes. The results also resonate with stakeholder theory which argues that improved financial performance can be achieved by enhanced stakeholder trust through responses to environmental concerns. The findings also align with the Triple Bottom Line theory which states that firms can be financially sustainable by striking a balance between social, economic and environmental goals.

This study's findings are in concurrence with those of Chininga et al. (2023) who investigated ESG ratings and corporate financial performance in South Africa and found out that there was a positive and statistically significant relationship between environmental practices and financial performance among listed firms in South Africa. It also agrees with Kipngetich and Gatauwa (2024) who established that environmental sustainability reporting enhanced financial performance among listed firms in Kenya. Moreover, the study is in line with Nigatu et al.

(2024) who found that green practices bolstered economic performance of industries in Ethiopia, underscoring the relevance of this study's findings in the region.

4.6.2 Social Sustainability and Financial Performance

The second objective of this study was to determine the relationship between governance integration and the financial performance of listed non-financial firms in Kenya. The null hypothesis H02: Social sustainability has no significant effect on the financial performance of listed non-financial firms in Kenya was tested. Results of the baseline regression model showed that there social sustainability had a positive and statistically significant effect on financial performance both ROE($\beta = 0.035$, $p < 0.000$) and ROA ($\beta = 0.016$, $p < 0.000$) models. What this implies is that enhancements in social practices such as CSR, stakeholder engagement and employee welfare augments firm financial performance. When the moderation effects of managerial efficiency were added in to the model however, the positive and significant effects of social sustainability on financial performance became negative and statistically significant for both ROE ($\beta = -0.12$, $p < 0.036$) and ROA ($\beta = -0.053$, $p < 0.014$) models. This was due to the negative influence of managerial efficiency on financial performance that offset the positive effects of social sustainability on financial performance turning them negative. Remarkably, the interaction term between social sustainability and managerial efficiency showed a positive and statistically significant effect on financial performance for both ROE ($\beta = 0.165$, $p < 0.008$) and ROA ($\beta = 0.073$, $p < 0.002$) models. This suggests that managerial efficiency enriches the advantages of social sustainability practices to the financial performance of listed non-financial firms in Kenya.

The results of this study are in tandem with the Triple Bottom Line theory which stresses that investments in people—communities and employees—adds to both social and financial benefits. The findings are also in line with stakeholder theory which argues that investment in social practices creates business legitimacy, build loyalty among stakeholders

and lowers the risk of social disruptions. Further, the findings concur with Resource Based View (RBV) where managerial capabilities make sure that social initiatives are not merely symbolic but are actually integrated into business operations.

Empirically, the study's results align with Obiora et al. (2022) who established that social sustainability had a statistically significant and positive effect on the financial performance of consumer goods firms in Nigeria, it also aligned with Ariyo (2023) who after studying CSR and Competitive Edge, found out that CSR helped in enhancing the competitive advantage of MTN Uganda. These findings further agree with Agutu and Githira (2023) who discovered that ESG reporting positively and significantly affected the financial performance of listed financial firms in Kenya. Contrarily, the findings of this study diverges from those of Waither (2023) who found that social sustainability had a positive but statistically insignificant effect on financial performance of listed firms in Kenya. This variations in scope suggests that the divergence in findings may be caused by managerial capabilities.

4.6.3 Governance Sustainability and Financial Performance

The third objective of this study was to establish the relationship between environmental sustainability integration and the financial performance of listed non-financial firms in Kenya. The null hypothesis H03: Governance sustainability has no significant effect on the financial performance of listed non-financial firms in Kenya was tested. Results of the baseline regression analysis show that governance sustainability had a negative and statistically insignificant effect on financial performance in the ROE model (β = -0.218, $p < 0.185$) and negative and statistically significant relationship with financial performance in the ROA model (β = -0.127, $p < 0.048$). This implies that board gender diversity does not directly translate into better financial performance in the short-run. With moderation added in the model however, the negative and statistically insignificant effects of governance sustainability turn positive but still statistically insignificant in the ROE model (β =0.806, $p < 0.206$) and positive and statistically

insignificant in the ROA model (β =0.389, p < 0.103). The twist of governance sustainability from negative to positive was due to the inversion of the negative effects governance sustainability on financial performance by the negative effects of managerial efficiency. Interestingly, the interaction term (GOV×ME) indicated a negative and statistically insignificant effect on financial performance in the ROE model (β =-1.258, p < 0.096) and negative and statistically significant effect on financial performance in the ROA model (β =-0.635, p < 0.025). This implies that managerial efficiency does not mitigate the adverse effects of governance sustainability on the financial performance of listed non-financial firms in Kenya.

These findings can be related to the Resource-Based View which affirms that as a governance resources, board diversity ought to be effectively managed to produce financial gain. The results also resonate with Stakeholder theory which emphasizes the importance of an inclusive and transparent governance structure. From the perspective of the Triple Bottom Line, governance is supposed to cause a balance amongst people, planet and profit but the results in this study may suggest that governance is still evolving in the Kenyan context and its financial benefit may not be fully realized yet.

The findings of this study agrees with Otieno et al. (2015) who established that there was a negative and statistically insignificant relationship between board size and the financial performance of SACCOs in Nakuru, Kenya; and that, financial improvements may not be achieved by simply adjusting the composition of the board of directors. Contrarily, the findings of this study diverge from those of Shmelev and Gilardi (2025) who discovered that governance practices had positive effects on financial performance of major global firms. This contradiction reflects differences in contextual and organizational factors such as regulatory implementation and cultural adaptation of governance practices.

4.6.4 Managerial Efficiency and Corporate Sustainability-Financial Performance Nexus

The fourth objective of this study was to determine the moderating effect of managerial efficiency on the relationship between corporate sustainability and financial performance of listed non-financial firms in Kenya. The null hypothesis H04: Managerial efficiency does not significantly moderate the relationship between corporate sustainability and financial performance of listed non-financial firms in Kenya was tested. Results of the moderated regression model showed that on its own managerial efficiency had a negative and statistically significant effect on the financial performance of listed non-financial firms in Kenya in both the ROE model (β =-0.713, $p < 0.017$) and ROA model (β =-0.312, $p < 0.005$). On interaction with ESG components however, the findings indicated that the interaction between managerial efficiency and environmental and social sustainability (ENV × ME and SOC × ME) had a positive and statistically significant effect on financial performance, suggesting that managerial efficiency enhances the positive effects of environmental and social sustainability on financial performance. On the other hand, the interaction between governance sustainability and managerial efficiency (GOV × ME) had a negative and statistically insignificant effect on financial performance in the ROE model (β =-1.258, $p < 0.096$) and negative and statistically significant effect on FP in the ROA model (β =-0.635, $p < 0.025$). What this implies is that managerial efficiency only partly offsets the negative effects of governance sustainability on the financial performance of listed non-financial firms in Kenya. Generally, managerial efficiency moderates the sustainability-performance nexus among listed non-financial firms in Kenya.

These findings are in tandem with the Resource-Based View framework as it emphasizes the importance of managerial efficiency as a dynamic internal resource. It stresses that efficient managers are capable of integrating sustainability practices into corporate strategies, they are also capable of allocating resources judiciously and align sustainability

initiatives with profit objectives. This study's findings also mirror Stakeholder theory in that efficient management address the diverse stakeholder interests in a way that creates legitimacy and better financial outcome. Furthermore, these findings converge with the Triple Bottom Line theory where it underscores managerial efficiency as a linking mechanism that enhances the abilities of environmental and social investments to generate both societal value and financial returns.

The findings of this study further converged with those of Putra et al. (2023) who established that managerial ability bolsters environmental performance where leaders are conscious environmentally. It contradicted with Suleiman et al. (2023) who found that managerial efficiency diminished the CSR-market value nexus among Nigerian banks. This contradiction highlights the double role of managerial efficiency—it can either enhance or diminish value creation depending on its alignment with sustainability in initiatives and long-term investments.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter culminates this research paper. It is organised into four sections: Summary of key findings, conclusions drawn from these findings, practical recommendations and areas of further research.

5.2 Summary of Key Findings

The primary objective of this study was to establish the relationship between corporate sustainability and financial performance of listed non-financial firms in Kenya as moderated by managerial efficiency. Specifically, the study sought to ascertain the effect of environmental sustainability, social sustainability and governance sustainability on the financial performance of listed non-financial firms in Kenya; and to establish whether managerial efficiency enhances or diminishes this effect. The findings are summarized below.

5.2.1 Environmental Sustainability

The baseline regression model results for the first goal of determining the effect of environmental sustainability on the financial performance of listed non-financial firms in Kenya indicated that environmental sustainability has a positive and statistically significant effect on financial performance. This suggests that Kenyan non-financial firms that engage in responsible practices such as compliance with environmental regulations, efficient use of water and energy resources, management of wastes and invest in renewable energy solutions are more likely to record better financial performance compared to those that do not.

5.2.2 Social Sustainability

The second objective of the study was to examine the effect of social sustainability on financial performance of listed non-financial firms in Kenya. The baseline regression model results established that social sustainability is positively and significantly related to firm performance. Firms that invested in employee welfare, community development, occupational health and safety, and customer satisfaction achieved better financial outcomes than those that neglected these areas.

5.2.3 Governance Sustainability

The third objective of the study was to was to assess the effect of governance sustainability on financial performance of listed non-financial firms in Kenya. Results from the baseline regression model analysis showed that governance sustainability has a negative and statistically insignificant effect on financial performance of listed non-financial firms in Kenya. This suggests that firms featuring effective governance structures such as effective oversight, transparent reporting, accountability mechanisms, effective oversight and gender diversity recorded inferior financial performance in comparison with firms with weaker governance structures.

5.2.4 Managerial Efficiency

The fourth objective of the study was to evaluate the moderating role of managerial efficiency in the relationship between ESG practices and financial performance of listed non-financial firms in Kenya. The moderated regression model results showed that managerial efficiency enhances the effect of environmental and social sustainability but diminishes that of governance sustainability on the financial performance of listed non-financial firms in Kenya. This underscores that human capital, organizational processes, and the quality of leadership are essential levers through which sustainability converts into profitability.

5.3 Conclusions

Results of the baseline regression model showed that environmental sustainability had a positive and statistically significant effect on financial performance ceteris paribus. The paper therefore concludes that environmental sustainability practices such as waste management, energy efficiency, pollution control and investment in renewable technologies are likely to boost the financial performance of listed non-financial firms in Kenya.

Also established by the study is that social sustainability had a positive and statistically significant relationship with financial performance, holding all other factors constant. This suggests that firms prioritizing social initiatives like staff welfare, health and safety, continuous professional development and diversity experience enhanced productivity, lower turnover, improved loyalty and ultimately augmented financial results. This study therefore concludes that social sustainability has a positive effect on the financial performance of listed non-financial firms in Kenya.

The study also ascertained that governance sustainability negatively and insignificantly affects financial performance, ceteris paribus. It implies that firms with undiversified board of directors, ineffective oversight and with strict adherence to acceptable ethical standards achieve superior financial performance. This study therefore concludes that governance sustainability is less likely to influence financial performance of listed non-financial firms in Kenya.

Finally, the findings revealed that managerial efficiency significantly moderates the relationship between ESG and financial performance, holding other factors constant. The results suggest that managers that effectively allocate resources, closely monitor performance and effectively align sustainability initiatives with the strategic direction of the firm ensure that environmental and social sustainability practices translate from mere hypothetical policies to substantive results, while governance sustainability translates to poor financial results. The

study therefore concludes that managerial efficiency is likely to enhance or diminish the ESG-financial performance relationship.

5.4 Recommendations

5.4.1 Practical Recommendations

It is in light of the evidence that environmental sustainability has a positive and significant effect on the financial performance of listed non-financial firms in Kenya that it is recommended that that firms consciously integrate environmental sustainability into their basic operational and strategic frameworks. By adopting such green technologies as renewable energy systems, sustainable supply chain practices and energy-efficient machinery, firms will benefit in the sense of reduced utility expenses, lower regulatory fines and boosted brand reputation. This will in turn bolster their financial performance.

Firms should also align their environmental strategies with global frameworks such as the ISO 14001 which provides standards for Environmental Management. They can align their environmental strategies with the United Nations Sustainable Development Goals (SDGs) as well. This will not only ensure their compliance with best practices but it will also enhance their competitiveness in the local, regional and global markets.

Firms are also advised to allocate sufficient resources to social sustainability initiatives. Particularly in the areas of occupational health, employee welfare and safety, fair labor practices, and community development. The logic behind this recommendation is that socially responsible practices promote goodwill, improve organizational culture, and ultimately drive better financial performance.

An efficient management effectively transforms sustainability investments into tangible financial outcomes. It is for this reason that firms are urged to invest in strengthening managerial efficiency at all organisational levels. This can be achieved by adopting decision making tools that are based on evidence, tools like performance dashboards, key performance

indicators (KPIs), and balanced scorecards which help managers in aligning sustainability objectives with financial performance targets. Time to time monitoring and evaluation of sustainability initiatives should be institutionalized to ensure that resources allocated to such projects deliver measurable returns.

5.4.2 Policy Recommendations

The Capital Markets Authority (CMA) in conjunction with the Nairobi Securities Exchange (NSE) should strengthen and compel regulatory requirements for the disclosure of ESG. Even though some firms voluntarily report sustainability practices, disclosure still remains inconsistent and at most times lack vigour. Standardisation of disclosures can only be ensured by mandating uniform ESG reporting using internationally recognized regulatory frameworks such as the Global Reporting Initiative (GRI) or the Sustainability Accounting Standards Board (SASB).

The government can also encourage investment in sustainability initiatives by firms through the introduction of fiscal and financial incentives. These incentives may take various common forms such as tax breaks, subsidized loans for renewable energy projects and accelerated depreciation allowances for green technologies. They could tremendously reduce the financial weight associated with implementing sustainability undertakings. Those firms that invest in renewable energy infrastructure such as solar and wind power or energy-efficient technologies should be entitled to grants or tax rebates. Firms that engage in large-scale recycling, conservative water management practices or sustainable packaging could enjoy reduced licensing fees or import duty exemptions for acquired equipment that is environmentally friendly. These incentives would not only stimulate sustainable corporate investment but also fast-track changeover to a green economy of the country in line with Kenya's Vision 2030 and climate change commitments with international partners.

In addition to regulatory reforms and incentives, policymakers should encourage the growth of institutional sustainable finance. Through the Central Bank of Kenya (CBK) and CMA, the government should promote the development of financial products such as green bonds. These instruments have the ability to provide firms with access to affordable capital while channeling resources toward projects with positive impacts environmentally and socially. Institutional investors like insurance companies, pension funds and others should be encouraged or even mandated to integrate ESG agenda into their investment decisions. Doing so would create strong market demand for sustainability practices thus forcing firms to adopt ESG practices not for mere compliance with regulations but for critical investment capital attraction.

5.4.3 Areas for Further Studies

While this study has provided important insights into the effect of environmental, social, and governance (ESG) sustainability practices on the financial performance of listed non-financial firms in Kenya, it has also unveiled several limitations and gaps that open rich ground for future research. The following areas are recommended for further inquiry.

The present study focused on managerial efficiency as a moderating variable, and the results confirmed its significance. Be that as it may, there must be other moderators or mediators that influence the strength and direction of the ESG–performance relationship. Research could investigate variables such as firm ownership structure, firm size, capital intensity, technological adoption or market competitiveness going into the future.

This paper depended mostly on quantitative techniques and regression analysis to explore the relationship between the study variables. This approach provided robust statistical evidence but may not fully depict the lived experiences of managers and stakeholders involved in effecting sustainability plans. Studies could employ the use of mixed methods that blend quantitative methods with qualitative techniques like case studies, interviews or focus groups.

Such manipulation would give rise to richer insights into the motivations, challenges, and best practices surrounding ESG adoption.

This study focused on listed firms but it is noteworthy to acknowledge that Small and Medium Size Enterprises (SMEs) make up the backbone of the Kenyan economy. Studies concentrating on SMEs could establish whether the same results of the relationship between ESG and financial performance holds true in smaller and medium sized unlisted firms that usually operate under constrained resources. Such research would inform policymakers of ways to design the support structures that are required in order to enable SMEs pursue sustainability without jeopardising their financial feasibility.

Finally, the function of technology in enhancing sustainability is intensifying very fast. This is particularly at the same pace with the rise of digital platforms, blockchain and artificial intelligence (AI). Upcoming research could explore how technological innovations accelerate or decelerate ESG adoption. They should also determine how such innovations influence the ESG-performance nexus.

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APPENDICES

Appendix A: Data Collection Sheet

Data Extraction Sheet								
COMPANIES	**Company A**							
YEARS	2017	2018	2019	2020	2021	2022	2023	2024
Energy Costs								
Operating Revenue								
Environmental Expenditure								
Total Assets								
CO_2 Emissions								
Total CSR Expenditure								
Training + Health & Safety Costs								
Operating Expenses								
No. of Social Projects Implemented								
CSR Budget								
No. of Female Directors								
Total Board Size								
Independent Directors								
Actual Board Meetings Held								
Scheduled Meetings								
No. of Employees								
Net Income								
Shareholders' Equity								

Appendix B: Listed Non-Financial Firms in Kenya

No	FIRMS
1	Africa Mega Agricorp PLC
2	B.O.C Kenya Ltd
3	Bamburi Cement PLC
4	British American Tobacco Kenya Ltd
5	Car and General
6	Carbacid Investments Ltd
7	Crown Paints Kenya PLC
8	E.A Cables PLC
9	E.A Portland Cement Ltd
10	Eaagads Ltd
11	East African Breweries Ltd
12	Eveready East Africa Ltd
13	Express Ltd
14	Flame Tree Group Holdings Ltd
15	Kakuzi
16	Kapchorua Tea Co. Ltd
17	KenGen Ltd
18	Kenya Airways Ltd
19	Kenya Power & Lighting Co. Ltd
20	Limuru Tea Co. Ltd
21	Longhorn Publishers Ltd
22	Nairobi Business Ventures Ltd
23	Nation Media Group Ltd
24	Safaricom PLC
25	Sameer Africa PLC
26	Sasini Ltd
27	Scangroup Ltd
28	Standard Group Ltd
29	Total Kenya Ltd
30	TPS Eastern Africa (Serena) Ltd
31	Umeme Ltd
32	Unga Group Ltd
33	Williamson Tea Kenya Ltd
34	Shri Krishana Overseas Ltd