



## Sustainability reporting and financial performance of listed financial firms in Kenya

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### Abstract

Financial sector stability is vital for the realization of economic development. Failure to incorporate environmental, social and governance (ESG) elements into corporate strategies can lead to corporate failure. Through the adoption of a descriptive research design, this study aims to determine the relationship between sustainability reporting and the financial performance of financial companies listed on the Nairobi Securities Exchange (NSE) in Kenya. Through the census method, the study population of twenty-three listed financial firms was obtained, and secondary data for the period from 2015 to 2021 was extracted through content analysis. Data on predictor variables were obtained through a document check index utilizing a non-refined exploratory factor analysis, while data on the response variable were obtained directly from annual reports. The data were analyzed through descriptive and inferential statistics. Modelling was further adopted through feasible generalized least squares (FGLS) to counter the problem of first order serial correlation. The findings indicate a positive and significant relationship between ESG reporting and the financial performance of listed financial firms in Kenya. The results imply that firms should embrace sustainability since ESG drives corporate strategies and will help firms to improve their performance, which will bring improved resilience. Focus on the triple bottom line enables value maximization for the three Ps – profit, people, and planet – thus facilitating sustainable development. The harmonization of reporting guidelines which is process-driven rather than content-driven will minimize greenwashing by firms. Lastly, industry players should ensure the availability and quality of ESG data.

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*Environmental sustainability  
ESG  
Governance  
Return on equity  
Social sustainability  
Sustainable finance.*

### JEL Classification:

*Q56; P36; O16; M14; P36; Q01.*

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**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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## **1. Introduction**

Sustainable finance refers to the process of financing investments while taking governance, social, and environmental factors into account, which can be classified as factors that can influence or mitigate climate change. The practice of sustainable finance is shown through sustainability reporting (Coleton, Font Brucart, Gutierrez, Le Tennier, & Moor, 2020). Sustainability considerations have various effects on financial stability, and disregarding sustainability issues poses a risk to financial stability and stifles performance. This may result from losses arising from ESG risks, such as environmental exposure and climate change. The global financial crisis in 2008 was greatly influenced by governance failures in financial institutions (Goel, Gautam, & Natalucci, 2022).

Financial sector players have different sustainability implications. There is no homogeneity in financial institutions since they do not operate in the same way. Banking, investments (asset management), investment services, and insurance are the financial institutions covered, and they are highly regulated to ensure financial stability and client protection. ESG variables can bring both obstacles and possibilities. ESG opportunities enable banks to access new services, clients, and markets, and ESG variables can also present banks with commercial opportunities that could result in changes in the way they conduct business. However, ESG also presents challenges across all the three dimensions. For insurance companies, there are opportunities to offer sustainability-oriented products that reinforce transitions, for example, reduced premiums for electric vehicles. From a risk viewpoint, there is aggravated risk arising from sustainability business models. This applies to investment firms that have the opportunity to facilitate transitions through innovation while contending with challenges emanating from immature markets and greenwashing aspects, which may weaken customer trust (EFRAG, 2021).

Sustainability reporting refers to the disclosure of information on issues pertaining to ESG. A number of sustainability accounting frameworks have been developed to promote standardized disclosure of ESG information in response to growing investor demand for non-financial information from corporations. These frameworks have resulted in improved consistency, accessibility, and readability of the data that investors can use to evaluate the sustainability implications of capital allocation decisions (Bose, 2020).

The financial system is critical because it is at the heart of the economy. Attaining sustainability is critical to enable the financial system to perform the basic function of allocating resources to ensure optimal use. Finance may take the initiative in sponsoring eco-friendly projects and businesses, hastening the shift to a circular, low-carbon economy. Finance can strive to attain the balance between competing sustainable goals (Schoenmaker, 2017). For financial institutions, ESG factors is a double-edged sword presenting both opportunities and challenges in relation to capital strength, asset quality, profitability, liquidity, and funding. The adoption of ESG provides new business opportunities in the form of new clients, new services and new markets, which may call for a revamp of the business models for financial institutions. At the same time, challenges exist for financial institutions across all ESG dimensions (EFRAG, 2021).

Many scholars have attributed the benefits of integrating sustainability into business strategies and practices, including improved reputation and legitimacy, increased employee and customer satisfaction and loyalty, reduced operating costs, improved firm performance and valuation, brand value, and enhanced competitive advantage. Many firms are working toward internal improvement by adopting sustainable and socially responsible policies and reporting on them with the aim of remaining competitive as the demands for corporate transparency and accountability for ESG grow. ESG reporting provides information on how organizations integrate environmental, social, governance, ethical, consumer, and human rights concerns into their business strategies and operations. ESG reporting is a way for an organization to reassure the public that it is not running its operations with the goal of maximizing profits at the expense of its commitments to its customers, employees, the environment, and the general public (Abdul Rahman & Alsayegh, 2021).

Despite its prominence and acceptance, Kenya has lagged behind on ESG adoption and reporting. In 2021, due to stakeholder pressure, the Nairobi Securities Exchange (NSE) provided a framework for ESG based on the Global Reporting Initiative (GRI). According to the GRI, sustainability reporting is an organization's practice of reporting publicly on its economic, environmental, and/or social impacts, and hence its contributions – positive or negative – toward the goal of sustainable development (NSE, 2021).

### *1.1. Statement of the Problem*

The competitiveness and potential of any company is normally evaluated through an analysis of its financial performance. A company's financial performance is determined by capital adequacy, liquidity, solvency, efficiency, leverage and profitability during a given time period, and includes the collection and distribution of funds (Abdi, 2010).

The ability of a company to manage and control its resources is measured by its financial performance. Capital change, cash flow, profit and loss, and balance sheet data can all be used by corporate management to inform their decisions (Fatihudin, 2018).

Financial services play a catalytic role in the efficient allocation of resources to the productive sectors of the economy, thus influencing investment, trade and economic growth. For effectiveness, financial services should be expanded and made more affordable, secure, competitive and efficient through the reduction of

transaction costs and the protection of customers' deposits. To realize this, the financial sector players must be efficient (M'Amanja, 2015). In Kenya, however, instead of a stable and thriving financial sector as a result stringent regulations and the rapid development of mobile, internet and agency banking, most financial institutions have collapsed because of failure to incorporate ESG components into their business models. Many financial institutions have gone under instead of achieving high returns for their shareholders. Banks that went under from 2013 to 2017 included Chase Bank, Imperial Bank, and Dubai Bank among many others (Gathaiya, 2017). As financial sector players, insurance firms have not been spared from financial distress arising from sustainability gaps. These companies include Blue Shield, Lakestar Insurance, Kenya National Assurance Company (KNAC), United Insurance, Access Insurance Company Ltd., Concord Insurance, and Stallion Insurance (Kibuchi, 2018). CBK (2022) acknowledged that maintaining and protecting financial sector stability is essential to supporting the growth of a thriving financial sector, which is essential to Kenya's objectives for sustainable national development. It also acknowledges that a thriving and sound financial sector is undermined by numerous risks, which must be contained, with the panacea being the incorporation of ESG into corporate strategies.

This study, therefore, examines the nexus between sustainability reporting and the performance of financial firms listed on the NSE in Kenya, with the following specific objectives:

1. To determine the relationship between environmental sustainability reporting and the financial performance of listed financial companies in Kenya.
2. To examine the relationship between social sustainability reporting and the financial performance of listed financial companies in Kenya.
3. To establish the relationship between governance reporting and the financial performance of listed financial companies in Kenya.

## **2. Literature Review**

### *2.1. Theoretical Review*

#### *2.1.1. Agency Theory*

This theory was postulated in early 1970s American literature regarding the relationships that exist between the owners of a company and its directors. This relationship is built on the principle that the owners engage the directors to run the company on their behalf. This theory was developed by Jensen and Meckling (1976) from the theory of the firm postulated by Alchian and Demsetz (1972).

The agency theory aims to comprehend the issues that develop when one party acts as another's agent. The two sides of agency are the actions and concerns involved in finding and providing services on behalf of others (agent side) and the activities and concerns involved in monitoring and correcting agent behavior to meet the needs or expectations of the principal (the principal side). Every decision and action have a cost because of imperfect circumstances and asymmetric information (Mitnick, 2015).

Sustainability reporting offers a solution to agency problems. With transparent disclosure, information asymmetry is solved, thus reducing monitoring costs associated with the search for information and incidences of insider trading. As ESG reporting has been established to be positively correlated with financial returns, this will minimize agency conflict since owners' needs for higher returns will be met, and the reward for managers will also be high, especially if the reward is performance-based.

#### *2.1.2. Stewardship Theory*

This theory was put forward by Donaldson and Davis in the late 1980s as an alternative to the agency theory, which was perceived to have negative assumptions regarding managers. According to this viewpoint, managers are stewards. This idea makes the supposition that managers will work diligently and effectively for the benefit of businesses and owners. High achievements and responsibilities of management encourage and direct employees to perform in line with the stewardship theory. According to this view, managers are self-driven, goal-oriented people who feel restricted when directors try to exert control over them. Stewardship theory focuses on those charged with management duties to act prudently to maximize shareholder returns. Sustainability stewardship entails environmental management initiatives, such as recycling, optimum resource use, conservation, restoration, and regeneration. Stewardship theory is relevant to this study since employees or managers charged with stewardship are also expected to be diligent and efficient as they carry out their duties. To realize this, the entity must satisfy its social expectations by providing a conducive working environment and ensuring that staff are optimally used. Good stewardship entails the sustainable use of resources and full disclosure that will apply to all ESG factors analyzed in this study. Sustainability is about good stewardship, since those charged with the governance of listed firms are expected to manage resources with due consideration for the next generation. Any business that satisfies expectations regarding sustainability factors will be seen as well managed, and its managers will be regarded as good stewards.

#### *2.1.3. Stakeholder Theory*

This theory was put forward by Freeman (1984) and states that any business has interconnected relationships with other parties, such as employees, special interest groups, prospective clients, trade

association customers, government, communities, investors, suppliers and others. As per this theory, a business is expected to strike a balance in meeting the diverse range of needs of its various stakeholders. The success of a firm is linked to how successfully it meets the diverse needs of its stakeholders and not just its shareholders.

The relevance of the theory to this study is that sustainable finance is aimed at achieving the triple bottom line so that other stakeholders' interests are safeguarded. Achieving the triple bottom line means that firms give equal attention to social, environmental, and economic factors as they do to profits. This is critical because business do not operate in isolation since there are normally linkages. Put into context, the stakeholder theory can be illustrated as follows: Financial institutions are expected to meet their social obligations, such as providing a safe working environment and contributing to the welfare of the community as its stakeholders. On the investors' side, both current and prospective, the business is expected to be transparent and ensure the availability of all crucial information that can aid informed decision making. On the funding side, creditors expect the company to be professionally managed and guarantee full repayment of its debts. The government as a stakeholder expects prudence in management so that the business can stay in a profit-making position which will allow them to pay their taxes, and the owners need sufficient returns to justify why the business should continue operating. These are the sustainable finance reporting factors under study.

From the theoretical literature review, firm performance will improve when the business models incorporate stewardship, agency, and stakeholder theories. The limitations of the applicability of the theories are the cost implications and the impact their adoption has on profitability. Their adoption thus relies on the outcome of the cost benefit analysis in instances when there are no regulatory requirements.

## *2.2. Empirical Literature Review*

### *2.2.1. Environmental Sustainability Reporting and Financial Performance*

Miroshnychenko, Barontini, and Testa (2017) examined the impact of corporations' green practices on their financial performance by obtaining data on indexes of pollution prevention, green supply management, green product development and the adoption of International Organization for Standardization (ISO) 14001 for each firm in a panel of 3,490 publicly traded companies from 58 countries over 13 years. The findings showed that pollution prevention and green supply chain management (internal green practices) are the main predictors of financial performance, with the secondary determinants being external green practices (green product development). It was also found that the adoption of ISO 14001 had a negative impact on financial performance. Mangwa and Jagongo (2022) examined the relationship between green finance and the financial success of Kenya's listed commercial banks. The study used an empirical methodology, drawing conclusions from secondary data. The variables under consideration were ROE, ROA, and ROI as dependent variables and environmental credits, emission allowances, and carbon asset finance as independent variables. The analysis of the available literature found that there were population, conceptual, and contextual gaps that support the need for more research on the subject.

Lucato, Costa, and de Oliveira Neto (2017) investigated the relationship between environmental performance through the level of eco efficiency and the financial performance of textile manufacturing SMEs. The findings were unable to identify the existence of a statistically significant relationship between the environmental and financial performance of the companies surveyed. This is in contrast to the findings by DiSegni, Huly, and Akron (2015), who found that companies that take initiatives on social responsibility and environmental sustainability consistent post significantly higher profits. Song, Zhao, and Zeng (2017) examined the relationship between the financial performance and corporate environmental management of listed Chinese firms from 2007 to 2011. The findings confirmed a positive and significant effect of environmental management on the financial performance in the long run. Endrikat, Guenther, and Hoppe (2014) conducted a study to clarify the conflicting empirical findings on the relationship between corporate financial performance and corporate environmental performance. Their study was conducted by meta-analytically integrating the findings of 149 studies, with specific emphasis on the direction of causality and the focal constructs of multidimensionality. The results from the meta-analytic review showed a positive and partially bidirectional relationship between corporate financial performance and corporate environmental performance.

### *2.2.2. Social Sustainability Reporting and Financial Performance*

The increasing evidence of a positive relationship between financial performance and social sustainability motivated Sroufe and Gopalakrishna-Remani (2019) to conduct a study to evaluate how innovative firms integrate sustainability into their business models. The study used a sample of Fortune 500 firms that are simultaneously listed in the Newsweek Green Rankings, the Corporate Knights Global 100, and the 100 Best Corporate Citizens lists. A positive relationship between the management of social sustainability practices and financial performance was revealed through the analysis of the purposive sample.

Coelho, Jayantilal, and Ferreira (2023) carried out a systematic review and content analysis of 53 articles identified in the convergence of financial performance and CSR from 1984 to 2021 motivated by the need to further understand firms' financial performance and corporate social responsibilities. This analysis involved

firms from the world's largest stock market indices, sustainable portfolios, regions, mutual funds, and developing and developed countries, among others. The findings revealed that corporate social sustainability directly impacts a company's financial performance. The impact increased as the environmental, social and governance scores increased. A study by [Erhinyoja and Marcella \(2019\)](#) achieved similar findings when examining the relationship between the financial performance and corporate social sustainability reporting of the oil and gas industry in Nigeria.

[Liang and Renneboog \(2020\)](#) and [Chen, Feldmann, and Tang \(2015\)](#) evaluated the relationship between corporate social performance disclosure and financial performance with the expectation that profitable firms are incentivized to disclose information on their social performance to enhance their publicity, while on the other hand, rising costs due to corporate social responsibility activities may be a deterrent. A structured content analysis was adopted to identify the relationship using the Global Reporting Initiative (GRI) reports of 75 sample companies. Corporate social performance was measured by the indicators stated in the GRI guidelines – fair work and labor practices, society and product responsibility, and human rights. Financial performance was gauged through return on equity, the cash flow/sales ratio, and sales growth. The results of the statistical evaluation indicated that categories of society and product responsibility and human rights displayed a positive and significant correlation with return on equity. The same was found for other CSR indicators.

[Schoenmaker \(2017\)](#) studied the link between corporate social sustainability culture on financial success through a study dubbed “Why Social Sustainability Counts”, with the objective of examining the existence of a correlation between CSR culture through corporate values and practices and financial success. The multiple regression analysis of corporate social sustainability and financial outcomes indicated that the corporate social sustainability factors of sustainability strategy and leadership, mission, communication and learning, social care, work–life balance, and loyalty are predictors of a company's financial success.

[Liang and Renneboog \(2020\)](#) studied the influence of CSR and sustainable finance. They acknowledged that CSR entails the process of incorporating ESG factors into business management, financial decision making and investor portfolio decisions. Hence, businesses that value social responsibility must absorb the externalities they create, such as pollution, and make themselves accountable to a wide range of stakeholders and shareholders. It is important to note that the examined literature shows how CSR and sustainability affect firm performance, return on investments, financial market activity, and the macro economy, rather than whether businesses should embrace sustainability and social responsibility. As a result of regulatory requirements or measures to improve performance, businesses today are taking the initiative to integrate social factors into their daily operations.

### *2.2.3. Governance Reporting and Financial Performance*

The study by [Wanjau, Muturi, and Ngumi \(2018\)](#) was motivated by the need to fill the knowledge gaps regarding the link between financial transparency and financial performance. It examined how financial performance is influenced by financial transparency in companies listed on the East African Securities Exchanges. The study's objectives were to establish the effect of financial policy, investment policy, and financial liquidity on the financial performance of listed companies in East Africa. Purposive sampling was used to collect secondary data from 73 listed firms from 2000 to 2015. Descriptive, correlation and regression analyses revealed a positive and significant relationship between financial policies, investment policies and liquidity disclosures on financial performance. The study concluded by emphasizing the need to evaluate the effect of other voluntary disclosures, such as risk transparency, social transparency, governance transparency and research and development disclosures.

[Tarus and Omandi \(2013\)](#) conducted a study in the Kenyan perspective motivated by the alarming rate of corporate scandals and failures and the increasing demand from stakeholders regarding information access, accountability, and transparency. Their objective was to establish the effects of financial transparency, governance transparency, social transparency, and risk transparency on firm performance. The sample comprised 42 firms listed on the NSE for the period from 2005 to 2010. The study applied a fixed effects regression model and found a significant and positive effect of corporate disclosure on firm performance.

[Kahloul, Sbai, and Grira \(2022\)](#) examined the moderating effect that the gender and diversity of board members have on the relationship between corporate social responsibility (CSR) reporting and financial performance using a panel dataset from French enterprises listed on the Société des Bourses Françaises (SBF) 120 Index from 2008 to 2015. The study's findings showed that CSR reporting and financial success have a beneficial link, with board gender diversity as a mediating factor.

[El-Charani, Abraham, and Skaf \(2022\)](#) aimed to ascertain the impact of corporate governance on the financial performance of the banking sector in the Middle Eastern and North African (MENA) region by examining the results of a COVID-19 bank immunity test. The driving force behind the study was the need to quantify how internal and external corporate governance initiatives affected the financial performance of banks in the understudied MENA region. The study used banks' annual reports to collect financial and non-financial data, which was then regressed. The findings demonstrated that good corporate governance procedures, such as independent directors, high levels of ownership concentration, a lack of political interference on the board, and strong legal protection, had a positive effect on financial success. Throughout the crisis, corporate

governance standards, such as performance-based pay, gender diversity on the board of directors, a manageable board size, and anti-takeover clauses, had little to no effect on financial performance. Stronger internal and external corporate governance processes may result in greater financial performance, according to the study's conclusion. Adeusi, Akeke, Aribaba, and Adebisi (2013) established a link between board size and financial performance utilizing a sample of 10 Nigerian banks. The factors under consideration were ownership and board composition. The results from the econometric model showed that the number of executive directors and the makeup of the board are not necessary for the banking sector to perform better. The study also showed a decline in bank performance when the number of external board members rises. To improve bank performance, the study established that the number of board members should be greater, and its makeup should be less diverse by looking at the proportion of outside directors to all other directors.

Wanjau (2019) investigated the impact of corporate disclosure on the monetary performance of companies listed on the East African stock exchanges. The goal of the study was to ascertain if corporate disclosure could aid in reversing the decline in financial and business performance. A descriptive study methodology and purposeful selection were used to choose a sample of 51 publicly traded companies from the Nairobi Securities Exchange, 11 from the Uganda Securities Exchange, three from the Rwanda Stock Exchange, and 15 from the Dar es Salaam Stock Exchange. Secondary data was retrieved using document check indexes that were obtained from audited statements. To demonstrate the strength of the association between the dependent and independent variables, regression and panel data diagnostic tests and a correlation analysis were carried out. The results showed a substantial positive association between financial disclosure, governance disclosure, risk disclosure, and social disclosure with the financial performance of listed companies in East Africa. To reduce monitoring and agency problems and to improve performance, the report advised listed businesses to disclose information at a higher level. Figure 1 illustrates the conceptual framework.

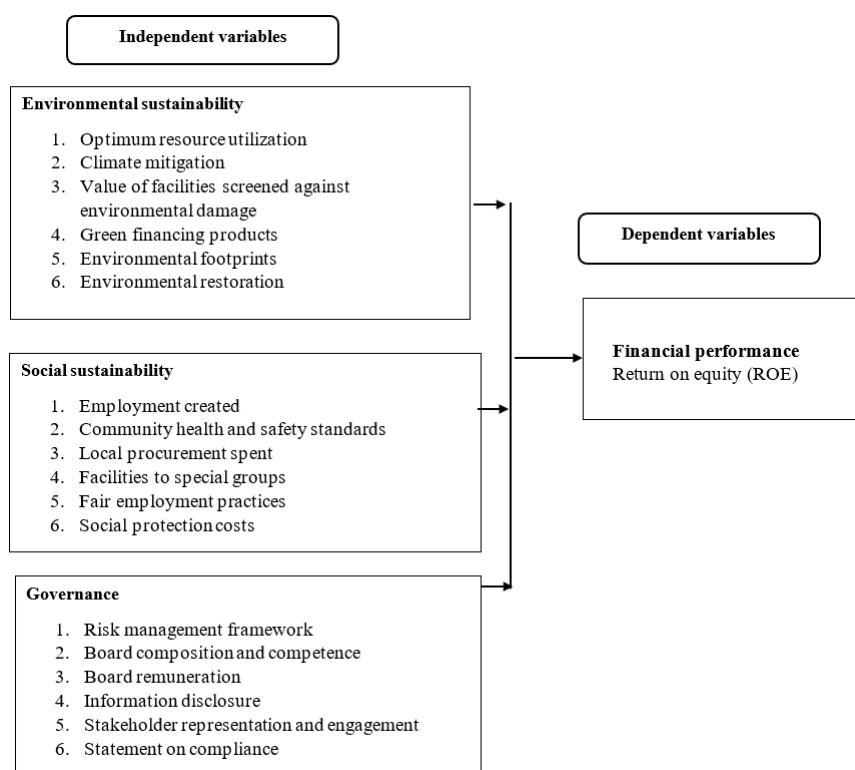


Figure 1. Conceptual framework.

Table 1 exhibits the operationalization of the study variables.

Table 1. Operationalization of the variables.

Variable	Variable type	Measurement
Environmental sustainability	Independent	Ratio scale
Social sustainability	Independent	Ratio scale
Governance sustainability	Independent	Ratio scale
Financial performance (Return on equity)	Dependent	Ratio scale

### 3. Methodology

This study analyzes the relationship between sustainable finance reporting and the financial performance of listed firms in Kenya. To accomplish this, a positivist research philosophy was adopted. A descriptive

research design was employed, similar to the one used by [Wanjau et al. \(2018\)](#) and [Njoroge \(2019\)](#), and a census method was used to obtain a sample of 23 financial institutions listed on the NSE. The study population comprises firms from the banking, insurance, investments, investment services, and telecommunication segments. The telecommunication segment was considered because of the financial intermediation activities enabled through its subsidiary, M-PESA. Secondary data was obtained from the published annual reports spanning seven years, from 2015 to 2021, through a document check index.

An exploratory factor analysis (EFA) was adopted to consolidate the numerous sustainability elements for ease of analysis through scoring. A scoring mechanism was created through use of a non-refined method, the sum score by factor, where item loading values are not considered due to the disregard of the strength of the weight of the element in the overall scores. Each item was assigned an equal weight ([DiStefano, Zhu, & Mindrila, 2009](#)). The profit after tax and total equity values were obtained directly from the companies' annual reports.

The collected data was cleaned and checked for completeness and entered into a computer for analysis using STATA software. Both descriptive and inferential statistics were deployed to analyze the data. With balanced panel data, diagnostic tests were used to evaluate the best analytical tool to use, with options being pooled ordinary least squares, the fixed effects model, and the random effects model. During the data collection process, ethical considerations were adhered to, such as obtaining a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Safeguards were also put in place to ensure the credibility and reliability of the information obtained.

## 4. Findings and Discussions

### 4.1. Descriptive Statistics

Descriptive statistics for all the study variables were generated to establish the mean, standard deviation, minimum and maximum values for the dataset. The findings indicated that the mean score for the first model on return on equity (ROE) was 0.1296, with a standard deviation of 0.059, a minimum of 0.01, and a maximum of 0.24. Environmental sustainability reporting was established to have a mean score of 0.6227, with a standard deviation of 0.2347, a minimum score of 0.17, and a maximum of 1. This implies that most firms have not adopted full disclosure of their environmental reporting frameworks.

Social sustainability reporting was established to have a mean score of 0.66310, a standard deviation of 0.2303, a minimum of 0.05, and a maximum of 1. This confirms the most embraced sustainability element of giving back to society and that companies are trying to make amends for the negative effects that their actions had on society. The main aim of social initiatives by corporations is to retain and increase market share through the creation of a positive perception through involvement in societal issues. This is confirmed through a mean reporting performance of 66%.

Governance sustainability reporting was established to have a mean score of 0.7437, a standard deviation of 0.2087, a minimum of 0.17, and a maximum of 1. The implication of this is that firms do not have a lot of leeway when it comes to governance issues because of the strict compliance requirements of the regulatory environment for listed firms. This is confirmed by the highest mean score of 74% in terms of reporting.

The descriptive statistics are summarized in [Table 2](#).

### 4.2. Diagnostic Tests

The Lagrange Multiplier (LM) test was carried out, with the null hypothesis stating that there was no panel effect on the presented dataset against an alternative that there was a panel effect. This test was necessary to identify the best fitting model between the pooled ordinary least squares and the random or fixed effects regression models. The results obtained had a chi-square of 50.63 and a p-value of <0.05. The findings gave enough evidence to reject the null hypothesis and conclude that there was panel effect, implying that the pooled effects regression was not the ideal model for analysis.

**Table 2.** Descriptive statistics.

Variable		Mean	Std. dev.	Min.	Max.	Observations
ROE	Overall	0.13	0.06	0.01	0.24	N = 161
	Between		0.05	0.06	0.24	N = 23
	Within		0.04	0.03	0.24	T = 7
Environment	Overall	0.62	0.23	0.17	1	N = 161
	Between		0.19	0.26	0.88	N = 23
	Within		0.14	0.19	1.05	T = 7
Social	Overall	0.66	0.23	0.05	1	N = 161
	Between		0.19	0.35	1	N = 23
	Within		0.13	0.16	1.10	T = 7
Governance	Overall	0.74	0.21	0.17	1	N = 161
	Between		0.17	0.31	1	N = 23
	Within		0.12	0.21	1.03	T = 7

Hausman test: The Hausman test was carried out, informed by the outcome of the LM test, to determine the most appropriate between the fixed and random effects models. The null hypothesis is that the preferred model is the random effects, against the alternative hypothesis for the fixed effects model. The findings produced a p-value of  $>0.05$  and a chi-square of 0.94, which fail to reject the null hypothesis, and thus conclude that the random effects model is the most suitable for the analysis.

A multicollinearity test was used to evaluate the degree of interrelationship among environmental sustainability reporting, social sustainability reporting and governance sustainability reporting. Multicollinearity was tested using variance inflation factors (VIFs) and tolerance levels. VIF values between one and ten are preferable. A VIF greater than 10 shows the presence of high multicollinearity. The findings showed a mean VIF of 2.70, confirming that the dataset did not suffer from multicollinearity since the mean VIF is less than 10.

Homoscedasticity Test. The assumption of homoscedasticity is that the variance between the dependent and independent variables is uniform. The test was carried out to evaluate whether there is uniform variance. The null hypothesis is that there is a uniform variance against the alternative that the error term had no uniform variance. The Breusch–Pagan/Cook–Weisberg test was done, which found a chi-square of 1.57 and a p-value of  $>0.05$ . The findings provide enough evidence for the null hypothesis to be rejected, hence the conclusion that the data conformed to homoscedasticity.

Normality Test. The model was checked for non-normal errors for both methodological and conceptual reasons. Normality was tested through use of the Shapiro–Wilk test, with the null hypothesis being that data is normally distributed, and the alternative is that the data is not normally distributed. We reject the null hypothesis if the p-value is less than 0.05 and fail to reject if the p-value is  $>0.05$ . ROE and the social sustainability variables had a p-value of  $>0.05$ , which accepts the alternative hypothesis. Environmental sustainability and governance had p-values of  $<0.05$ , providing a basis for the rejection of the null hypothesis. The findings imply that ROE and social sustainability display normality, while environmental sustainability and governance reporting data deviated from normal distribution.

Autocorrelation. To satisfy the assumption of ordinary least squares (OLS) on non-serial correlation of the error term, an autocorrelation test was carried out through the F test by Wooldridge and Drukker. The autocorrelation test was done to establish whether error terms in the regression model are correlated over time. This is also called a joint significance test. For the F statistics, the null hypothesis states that there is no existence of first order autocorrelation, with the alternative being that there is serial correlation. The findings show an F statistic of 5.048 and a p-value of 0.0350. Since the p-value is less than 0.05, there are sufficient grounds to reject the null hypothesis, and we can therefore conclude that there is serial correlation and the disturbance term of the multivariate data exhibits first order autocorrelation. This challenge was overcome by the application of the feasible generalized least squares (FGLS) model. Table 3 displays the diagnostic test results.

**Table 3.** Diagnostic tests.

Test	Diagnostic test	Findings	Conclusion
Panel effect	Breusch–Pagan Lagrange Multiplier (LM) test	Chi-square value is 50.63; P-value is 0.0000.	Panel effect exists.
Random or fixed effects	Hausman test	Chi-square value is 0.94; P-value is 0.08159.	Random effects model is suitable.
Multicollinearity	Variance inflation factor (VIF)	Environmental Sustainability VIF 2.9; Social Sustainability VIF 2.68; and Governance VIF 2.51. Mean VIF 2.7.	Absence of multicollinearity Mean VIF $<5$
Heteroscedasticity test	Breusch-Pagan/Cook-Weisberg test	Chi-Square value was 1.57 with P-value of 0.2096.	Data conformed to homoscedasticity since the model had a P value $>0.05$ .
Normality test	Shapiro–Wilk test	ROE had a P value of 0.439, Environmental Sustainability P value 0.000, Social Sustainability P value of 0.109 and Governance P value 0.001.	Normality on ROE and social sustainability, environment sustainability and governance’s reporting data deviated from normal distribution.
Autocorrelation	F test by Wooldridge and Drukker	F (1,92) = 5.048, Prob > F = 0.0350	Existence of first order serial correlation



### 4.3. Inferential Statistics

#### 4.3.1. Correlation Analysis

To establish the strength of the relationships between the variables, a pairwise correlation was conducted. There was a strong, positive and significant relationship between environmental sustainability reporting and return on equity ( $\rho = 0.703$ ,  $p$ -value  $< 0.05$ ). Secondly, a strong, positive and significant relationship was found between social sustainability reporting and return on equity ( $\rho = 0.741$ ,  $p$ -value  $< 0.05$ ). Thirdly, there was positive and significant relationship between governance reporting and return on equity ( $\rho = 0.636$ ,  $p$ -value  $< 0.05$ ). An examination of the interrelationship between the independent variables showed that they were highly correlated with each other since the correlation coefficients were greater than 0.7. Table 4 presents the results of the correlation analysis.

Table 4. Correlation analysis.

Pairwise correlations				
Variable	ROE	Environment	Social	Governance
ROE	1.000			
Environment	0.703*	1.000		
Social	0.741*	0.759*	1.000	
Governance	0.636*	0.739*	0.713*	1.000
	0.000	0.000	0.000	

Note: \*  $p < 0.1$ .

#### 4.3.2. Feasible Generalized Least Squares (FGLS) Regression on Sustainable Financial Reporting and Financial Performance (ROE)

To overcome the problem of heteroscedasticity and first order correlation, a feasible generalized least squares regression model was adopted. Table 5 displays the FGLS regression analysis results when the variables are regressed against return on equity (ROE). The value of R-squared is 0.644, indicating that 64.4% of ROE is affected by environmental, social and governance sustainability reporting for the period under review (2015 to 2021). The chi-square value of 139.877 and the corresponding p-value of 0.000 ( $p < 0.05$ ) indicate that the model is a good fit for examining the relationship between sustainable finance reporting (environmental, social and governance reporting) and the ROE of financial firms listed on the NSE, Kenya.

Table 5. FGLS regression on sustainable financial reporting and financial performance (ROE).

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)							
ROE	Coeff.	Std. err.	t-value	p-value	[95% conf.]	[Interval]	Sig.
Environmental	0.059	0.018	3.26	0.001	0.024	0.095	***
Social	0.113	0.016	7.05	0.00	0.082	0.144	***
Governance	0.05	0.023	2.17	0.03	0.005	0.095	**
Constant	-0.018	0.017	-1.04	0.297	-0.051	0.016	
Mean dependent variable		0.130	SD dependent var			0.059	
R-squared		0.644	Number of obs.			161	
Chi-squared		139.877	Prob > chi2			0.000	

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ .

## 5. Discussion

### 5.1. Environmental Sustainability Reporting and Financial Performance

The study tested the first hypothesis, which states that there is no positive or significant relationship between the environmental sustainability reporting and the financial performance of listed financial firms in Kenya. From the results, enough evidence was obtained to reject the null hypothesis and conclude that environmental sustainability reporting has a positive and significant influence on the financial performance of listed financial firms in Kenya ( $\beta = 0.059$ ;  $p$ -value =  $< 0.05$ ).

The study findings are in agreement with Jum'a, Zimon, and Ikram (2021); Haninun, Lindrianasari, and Denziana (2018) and Xie, Fang, and Zhang (2022). These studies also found that environmental sustainability performance positively and significantly influences financial performance. However, the results disagree with Folger-Laronde, Pashang, Feor, and ElAlfy (2022), whose findings indicate that return on investment is not safeguarded by higher levels of sustainability performance scores in instances of severe market downturns. Concurrence to postulations of agency, stakeholder and stewardship theories has been established. Environmental sustainability will translate to optimum resource utilization, reduced carbon footprints, waste management and environmental restorative initiatives, which will fulfil the postulation of stewardship theory. Agency problems, such as agent and principal conflict, will be minimized by better financial performance, especially when remuneration and reward are performance-based. Compliance with regulators on environmental issues will partly fulfil the stakeholder theory expectations.

### *5.2. Social Sustainability Reporting and Financial Performance*

The second hypothesis states that there is no positive or significant relationship between the social sustainability reporting and the financial performance of financial firms in Kenya. The results show that social sustainability reporting has a positive and significant influence on the financial performance of listed financial firms in Kenya ( $\beta = 0.113$ ; p-value  $< 0.05$ ). There was thus enough evidence to reject the null hypothesis and conclude that social sustainability positively and significantly affects the financial performance of listed financial firms.

The study findings are in agreement with [Sroufe and Gopalakrishna-Remani \(2019\)](#); [Schönborn et al. \(2019\)](#) and [Coelho et al. \(2023\)](#), who also found that social sustainability positively and significantly influences firm performance. The findings, however, contradict [Landi and Sciarelli \(2018\)](#) and [Rahi, Akter, and Johansson \(2021\)](#), who found a negative and significant relationship between social sustainability and financial performance, which could be attributed to the immense resource allocation needed to address the social obligations of the businesses. The findings are also in harmony with the stakeholder, stewardship, and agency theories, which underpin this study. Better financial performance arising from social sustainability initiatives, such as employee relations, diversity and inclusion, and product safety, will enable business to go beyond profits to fulfil the requirements of the other stakeholders. Increased return on equity will also safeguard against agency problems and minimize monitoring costs. Lastly, on stewardship, a profitable firm is a resilient and viable firm with assured and long-term sustainability. Managers of such firms will be regarded as better stewards, and better profitability arising from social sustainability will ensure satisfaction of the other stakeholders.

### *5.3. Governance Sustainability Reporting and Financial Performance*

The third hypothesis states that there is no positive or significant relationship between the governance sustainability reporting and the financial performance of listed financial firms in Kenya. The findings revealed that governance sustainability reporting has a positive and significant influence on financial performance of listed financial firms in Kenya ( $\beta = 0.05$ ; p-value =  $< 0.05$ ). There was thus enough evidence to reject the null hypothesis and conclude that governance sustainability reporting has a positive and significant relationship with the financial performance of listed financial firms.

[Wanjau \(2019\)](#); [El-Chaarani et al. \(2022\)](#); [Wakaisuka-Isingoma \(2019\)](#); [Wako \(2020\)](#) and [Moenga \(2015\)](#) obtained analogous results indicating that governance positively and significantly influences firm performance. These findings align with agency, stakeholder, and stewardship theories. Governance ensures that leadership within an organization is responsible, thus promoting transparency and accountability across all operations. Effective governance will boost stakeholder confidence and fulfil the supposition of stakeholder theory through transparent disclosure, compliance with regulators and enhanced stakeholder engagement. Enhanced governance ensures controlled risk-taking through a proper risk management framework, hence safeguarding against the concern of entities and thus fulfilling the stewardship theory. Reduced instances of insider dealings resulting from transparency and disclosure will reduce agency problems, which will translate to reduced monitoring costs.

## **6. Conclusion**

From the study findings and the hypothesis testing, it can be concluded that firms must improve their sustainability scores for environmental, social and governance issues to improve financial performance. Increased environmental sustainability by financial institutions will lead to increased financial performance. This will align with the expectations of agency, stewardship, and stakeholder theories. A highly profitable business will be able to meet the expectations of all stakeholders. Failure to adopt environmental sustainability measures will lead to the occurrence of climate-related risks, whose consequences can have a severe negative effect on the entire financial system. Occurrences such as drought, floods and other environmental vulnerabilities can also affect the stability and earning potential of firms.

Financial institutions should also focus on social sustainability to improve financial performance through improved reputation and legitimacy, increased employee and customers loyalty, and enhanced brand value. Increasing social sustainability initiatives, which culminate in high reporting scores, will translate into improved financial performance and a higher return on equity.

Increasing governance sustainability initiatives, which will also result in high reporting scores, will translate into improved financial performance and higher return on equity. Lapses in governance will lead to reduced monitoring costs but increased compliance costs in the form of penalties and sanctions. Good corporate governance will enhance a firm's competitive advantage.

## **7. Recommendations**

This study offers empirical proof that sustainability adoption and reporting enhance a company's success. Sustainability facilitates the protection and maximization of value and benefits brought by the three Ps of profit, people, and planet (triple bottom line). Firms should thus focus on the creation of shared value.

Since a company's overall success depends on its leadership, the tone from the top should facilitate the transition from a business-as-usual model to a sustainable model. ESG elements should thus be embedded in corporate strategies for enhanced performance and sustainability.

Supervisory guidance for companies on sustainability issues, from adoption to reporting, should be developed by financial sector authorities, such as the Central Bank of Kenya (CBK), the Insurance Regulatory Authority (IRA), and the Capital Markets Authority (CMA).

The study recommends strict adherence to the sustainability reporting guidelines set out by the NSE and the GRI to enhance the standardization and comparability aimed at minimizing subjectivity in reporting.

Industry players should place equal emphasis on both process-driven and content-driven ESG reporting as this will guard against lip service and greenwashing from some players.

Industry players should also focus on ESG data quality. There should be assurances on ESG data and information addressing data quality and availability. This is occasioned by stakeholder demand for more transparency and accountability. ESG remains a critical tool to assess and evaluate a firm's credibility and sustainability in the long run.

Despite contributing to the existing literature on the criticality of sustainability through ESG incorporation into businesses to enhance performance and resilience, there are some limitations and challenges arising from the constrained context, concept, and methodology, which future studies could expand on.

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