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Abstract

Purpose: The main objective of this study was to examine the effect of sustainability reporting on firm value among companies listed in the Nairobi Securities Exchange, Kenya.

Methods/material: The study target population includes all 64 NSE listed companies. The study employed use of secondary data collected from annual reports sourced from NSE and firms' websites for eleven (11) years from 2012-2022. Content analysis technique was employed for collection of data using data collection sheet. This research used longitudinal research and correlational research design.

Findings: Findings showed that economic reporting had negative and significant effect on firm value, while environmental reporting had positive and significant effect on firm value. However, social reporting had insignificant effect on firm value.

Conclusion/implication: This suggests that social reporting practices may not have a substantial impact on firm value in the context of the Nairobi Securities Exchange. Firms that engaged in extensive economic reporting were associated with lower firm value. Firms with higher levels of environmental disclosure were associated with higher firm value. Therefore, the study

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recommends that companies should review their current economic reporting practices and identify areas where they can reduce the amount of information they disclose. Managers should focus on enhancing the quality and transparency of economic and environmental reporting to improve investor confidence and trust.

Keywords: *Environmental Reporting, Firm Value, Social Reporting, Economic Reporting*

1.1 Introduction

One noteworthy trend is the growing interest on a global scale in sustainability reporting, which covers the social, economic, and environmental ramifications of businesses' operations. Market competition and the speed at which change is occurring are putting an unprecedented amount of pressure on businesses to succeed as well as maintain their success over the long run. The advent of environmental, economic, and social reporting is responsible for the current upsurge in the popularity of sustainability reporting (Nugrahani, & Artanto, 2022; Suluo, et al., 2023). These days, sustainability reporting is valued and acknowledged by investors as a critical component of company investment criterion. This recognition is a result of its capacity to enhance stakeholder involvement, improve engagement with stakeholders, boost risk management, and raise the level of operational disclosure inside businesses (Bellucci, Simoni, Acuti & Manetti, 2019; Di Tullio, et al., 2021). Notably, it is acknowledged that investors greatly value sustainability reports that follow recognized criteria such as the International Integrated Reporting Council (IIRC) and the Global Reporting Initiative (GRI) (Yudistira, et al., 2017). Furthermore, sustainability reporting is becoming more and more recognized as an essential instrument for assessing a company's performance in terms of economy, society, and the environment. According to Jamil et al. (2021) it gives investors a better understanding of their long-term investment prospects. This change in attitude highlights how important sustainability reporting is becoming to businesses.

Previous studies have hinted at a possible relationship between business value and sustainability reporting. According to Atanda, Osemene, and Ogundana (2021), businesses should use sustainability reports to build stakeholder trust in order to achieve corporate sustainability. As a result, this venture raises sales, profitability, and productivity, all of which contribute to an increased firm value. A study by de Villiers et al. (2017) provides evidence in favor of this theory by highlighting the favorable relationship that exists between non-financial disclosure, market value for businesses, and sustainability reporting. According to the research, businesses that provide more detailed information about how they perform in terms of sustainability typically command a greater market value than those that don't.

Furthermore, a study conducted by Burzillo et al. (2022) revealed that companies with elevated levels of sustainability reporting exhibited higher market capitalization and Tobin's Q values. Additionally, when a firm discloses its sustainability reporting, it garners public trust, resulting in an augmented firm value (Christensen, Hail & Leuz, 2021). Supporting this perspective, Eccles et al. (2019) highlighted that efficient sustainability performance contributes to a 4.8 percent increase in a firm's share price compared to competitors in the long term. Consequently, it can be deduced that increased sustainability reporting positively impacts a company's value. According to Cormier et al. (2019), a strong dedication to sustainability transparency can provide favorable outcomes, improve investor retention, and draw in top-tier talent. This has a domino effect that

raises productivity, boosts competitiveness, and lessens distributional conflicts—all of which are beneficial to the company's total worth.

Research by Van Linh et al. (2022), Guidry and Patten (2020), and Berthelot et al. (2012) provides empirical support for the beneficial effect of corporate sustainability reporting on firm value. Furthermore, research by Latifah and Luhur (2017) and Kurniawan et al. (2018) has shown how important sustainability reporting is to a company's value. However, some researchers have shown negative correlations between these two factors, including Iswati (2020), Friske et al. (2023), Clarkson et al. (2020) and Suluo et al. (2023). Conversely, some research, like that of Astuti and Juwenah (2017), has not been able to find any correlation between the value of a company and its corporate sustainability, leading them to conclude that there is no appreciable impact of sustainability reports on firm value. This study is clearly necessary because previous research on the relationship between sustainability reporting and business value, particularly in the sub-Saharan region, has not consistently aligned.

As evidenced by negative share prices and decreased market capitalization, many of the Nairobi Stock Exchange (NSE) listed companies continue to exhibit diminished firm value, even in the face of implementation efforts directed towards sustainability mechanisms in Kenya (Bitok et al., 2011). The market value of listed companies has significantly decreased, with a decline from a peak of 2,841.400 KES billion in August 2021 to 1,986.080 KES billion by December 2022. These figures demonstrate that, in spite of efforts to put sustainability measures in place, a sizable percentage of Nairobi Stock Exchange-listed businesses have experienced a reduction in company value, which is manifested in negative share prices and decreased market capitalization.

Variations in share indices and low transaction volumes indicate that many of the NSE's listed companies face substantial market share price swings (CMA, 2012; 2013; 2014; 2015; 2016; 2017; 2018; 2019; Mukyala, 2020). These variations can be seen throughout the many time periods that are being examined. Reduced capitalization and a weaker or lower return on invested capital are indicated by declining share prices (CMA, 2019). As a result of this situation, some businesses, including Chase Bank and Imperial Bank, have closed or failed, and others, like Athi River Mining, have suspended trading (Warutere, 2013). One possible explanation for the decline in firm value among the listed corporations could be the low number of sustainability report publications. The NSE is confronted with formidable obstacles, as investors' discernment grows (Nyasha & Odhiambo, 2014). According to a study by Wachira and Berndt (2019), the maximum aggregate scores attained by Kenyan enterprises were 65.39%, whereas South African and Mauritius firms obtained superior ratings of 93.1% and 89.7%, respectively. Mbuthia (2016) found that, as of December 2016, just 50% of listed businesses had made their sustainability reports available online. The Reporting however did not incorporate characteristics such as company size, liquidity, profitability and industry of operation impacted the level of sustainability disclosure. It is therefore hypothesized that this could be one of the reasons why many listed companies are unable to survive in the Kenyan market.

However, there is not enough empirical data to determine how sustainability reporting affects the value of companies listed on the NSE. The results of earlier studies on the impact of sustainability reporting on business value have been inconsistent. Most of these studies had

limitations with regard to their methodology, findings, and scope. As a result, the validity of studies examining the relationship between market value and sustainability reporting is still questionable and lacking (Yu and Zhao, 2015). Therefore, this study sought to investigate the effect of sustainability reporting on firm value of firms listed in NSE.

2.1 Theoretical Framework

The foundation of this work is based on the theories of legitimacy and signaling. Companies freely disclose operations based on management's assessment of community expectations, according to the legitimacy theory (Deegan, 2002; Deegan, et al., 2000; Cormier & Gordon, 2001). This theory is based on the idea that there is a "social contract" between society and businesses (Deegan, 2002). Information is used by the business to justify its actions and shape stakeholders' and the public's view of the company's worth. In this setting, businesses obediently follow social standards while utilizing a variety of legitimation techniques to increase, maintain, or protect their legitimacy (Tilling, 2004). According to Atanda et al (2021), corporate social reporting enhances a company's value by validating its actions and attempting to change stakeholders' and society's perceptions of the organization. This is done within the context of legitimacy theory. According to Bansal et al. (2021), this theory is highly influential in the subject of social and environmental accounting. This is demonstrated by the fact that it is frequently cited. The goal of this research is to use legitimacy theory to the analysis of sustainability reporting, revealing the complex dynamics and implications for business value.

Furthermore, according to the Signaling theory, information released by a business is one of the variables or factors affecting the decision-making process of the information recipient (Karasek & Bryant, 2012). Company signals can have positive effects on the information supplier and the information recipient (BliegeBird & Smith, 2005). Based on the description above, it follows that each business regularly sends signals to the market that are communicated in a particular way. As consumers of these signals or data, market responses depend on how the signals the company transmits are interpreted. Furthermore, according to signaling theory, businesses that provide disclosures regarding environmental matters are effectively conveying their commitment to proactive environmental strategies. They are motivated to share such information voluntarily with shareholders and various stakeholders. Consequently, these affirmative signals enhance the attractiveness of these companies to potential investors in the stock market, as observed by Ortas et al. (2017).

2.2 Empirical Review and hypothesis development

Social reporting and firm value

The focus of several studies has been the relationship between social reporting and corporate value. These research' findings have been mixed; some show a positive correlation or even a negative one between social reporting and business value, while others show no correlation at all. According to research done by Büyükkarabacak & Ersoy (2020), there is a statistically significant positive correlation between social reporting and corporate worth. This implies that businesses with social media disclosures are thought to have a greater firm value than those without. Al-Anbuky et al. (2018), on the other hand, discovered a weak but positive correlation

between social reporting and business value. Four major findings were provided by Muslichah (2020): Social, Governance, and Environmental Disclosure (ESD) did not significantly affect Firm Value (FV); however, it did have a positive and noteworthy impact on Financial Performance (FP), which in turn had a positive and noteworthy effect on FV. Furthermore, FP acted as a mediator between economic and social performance and FV.

According to Laskar and Maji (2018), social sustainability reporting has a significant positive impact on company performance. This benefit is more noticeable in developed Asian nations than in developing ones. According to Swarnapali and Luo (2018), social sustainability reporting (SR) and firm market value have a positive association that is consistent with the value-enhancing theory. On the other hand, Ching et al. (2017) and Chwistecka-Dudek (2016) investigated the relationship between value relevance and social reporting (SR), taking financial performance into account, and found no evidence of a positive association between listed enterprises' value relevance and their SR practices. According to these studies, value relevance and financial performance may not always improve when SR processes are improved (Ansari et al., 2015). Studies examining the connection between social reporting and corporate value have yielded a variety of results overall. Some research found a positive correlation, while other investigations found no correlation or a negative correlation. Thus, the study hypothesized that

H₀₁: There is no significant relationship between social reporting and firm value of companies listed in the Nairobi Securities Exchange.

Economic reporting and firm value

Recent scholarly investigations have directed attention toward comprehending the influence of economic reporting on firm value. Notably, Dura, Chandrarin, and Subiyantoro (2021) illuminated that economic performance exerts an indirect influence on firm value through its impact on financial performance. In a study by Atanda, Osemene, and Ogundana (2021), compelling and consistent evidence emerged, indicating that banks disclosing high levels of overall sustainability and environmental sustainability tended to witness diminished firm value. Intriguingly, the study highlighted a more pronounced positive impact emanating from social sustainability disclosure, while the insignificance of economic sustainability disclosure suggested that augmenting it would not contribute to an enhancement in firm value. In a corroborating study, Laskar and Maji (2016) affirmed a significant positive relationship between firm performance and economic sustainability reporting. Furthermore, Laskar's (2018) regression analysis results underscored the significantly positive impact of sustainability reporting on firm performance, with a discernible prominence in developed nations compared to emerging nations in Asia.

However, in contrast to these findings, Yousafzai, Köse, and Akhtar (2012) reported that economic reporting exhibited no significant effect on firm value. The collective empirical evidence, nonetheless, leans towards asserting a positive effect of economic reporting on firm value. Numerous studies have revealed that companies publishing economic reports observed an augmentation in the market-to-book ratio, indicative of an increase in firm value. Additionally, a positive correlation was identified between higher quality economic reports and elevated firm market values.

Thus, the study hypothesized that:

H₀₂: There is no significant relationship between economic reporting and firm value of companies listed in the Nairobi Securities Exchange.

Environmental Reports and Firm Value

Bergek et al. (2019) conducted a study that uncovered a notable correlation between heightened levels of environmental disclosure and an increase in firm value, indicating a positive association between environmental reporting and firm value within European contexts. This perspective was further substantiated by Tzabbar and Levy's 2020 research focused on the London Stock Exchange, which identified a positive link between environmental disclosure and firm value. Building on this evidence, Liu et al.'s (2022) findings demonstrated a positive impact of ESG activities on the financial performance of small and medium-sized Chinese manufacturers. Additionally, Haidar and Sohail's 2021 study underscored the significant influence of Tobin's Q on EPS. Abdi et al. (2022) contributed to this body of evidence by affirming a positive relationship between the environmental and governance aspects and market-to-book ratio, as well as Tobin's Q, as indicators of firm value and financial performance. Moreover, Li et al. (2018) revealed a favorable connection between ESG disclosure levels and firm value.

However, when shifting the focus to developing countries, Malarvizhi and Matta's (2016) examination of firms listed on the Bombay Stock Exchange (BSE) in India found no significant relationship between the level of environmental disclosure and firm performance. In a related study, Akrouta and Ben Othmanb (2015) observed a positive association between environmental disclosure in annual reports and stock market liquidity, as measured by the bid-ask spread. Furthermore, Gatimbu and Wabwire (2016) presented findings suggesting a substantial positive impact of environmental disclosure on performance.. In light of these diverse findings, it is crucial to investigate the specific case of companies listed on the Nairobi Securities Exchange. Therefore, this study proposes to explore the relationship between environmental reporting and firm value, aiming to address the following hypothesis:

H₀₃: There is no significant relationship between environmental reporting and firm value of companies listed in the Nairobi Securities Exchange.

Methods

For this study, a positivist social science approach was chosen, emphasizing the collection and quantitative analysis of data from annual reports. The longitudinal research approach, frequently utilized to examine changes in a particular variable over time, often involves observing the same individuals or groups over an extended period (Gennert, 2016).

In the context of this study, the target population encompassed all 64 companies listed on the Nairobi Securities Exchange (NSE). The empirical analysis spanned an eleven-year period, specifically from 2012 to 2022. In this study, the Census Technique was employed to select firms for inclusion in the sample. The dataset utilized in this study comprises 46 non-financial listed companies, encompassing the eleven-year timeframe of 2012 to 2022. Out of these 46

firms, 32 entities possessed all the requisite data crucial for the research, resulting in a total of 320 observations. Consequently, 14 firms were excluded from the analysis as they failed to meet the stipulated criteria. The study relied on a decade's worth of data extracted from the annual reports of non-financial listed companies to undertake a comprehensive statistical analysis.

This research employed a data collection sheet to gather sustainability reporting panel data spanning a decade from 2012 to 2021 while firm value data was collected from 2013-2022. The study exclusively relied on published secondary data sourced from the Nairobi Securities Exchange (NSE) and firms' websites.

Measurement of Firm Value

Tobin's Q serves as a metric for gauging a firm's value, encompassing various facets such as market-to-book value ratio, net market value, net assets replacement value, economic value added, and market value added (Al-Awawdeh & Al-Sakini, 2018). The concept of Approximate Q was initially introduced by Chung and Pruitt (1994) and modified to.

$$\text{Approximate } Q_{t+1} = \frac{MVE+DEBT}{TA}$$

Where MVE = the product of a firm's average share price (1 year after the publication date of the annual report and financial statements) and the number of common stock shares outstanding, DEBT = the value of the firm's short-term liabilities plus the book value of the firm's long-term debt and TA = the book value of the total assets of the firm. In consistency with prior research, a one-year lag of SR is used to examine the relationships between FV and SR (Waddock and Graves, 1997; Roman, Hayibor and Agle, 1999; Mahoney and Roberts, 2007; Mahoney, 2012). Therefore, FV was measured one year ahead given by t+1. The Kenyan Companies Act requires companies to publish their reports three months after the end of the financial year, therefore the research considered firm value for 1 year after the date of publication. According Robiyanto, Adhi and Andreas (2021), if Tobin's Q is less than one, it signifies that the firm is potentially undervalued, implying that its market value is lower than its book value. This situation tends to pique the interest of investors, as they are inclined to purchase shares of the firm at a reduced price, making it more attractive to acquire the firm's assets at a lower cost compared to their potential resale value. Conversely, when Tobin's Q exceeds one, it suggests that the firm may be overvalued, indicating that its market value surpasses its book value. This scenario typically points to the firm having significant growth potential.

Measurement of Sustainability Reporting

The three core components of sustainability reporting are environmental, economic and social and each is made up of discrete elements that are led by the GRI Content Index Tool. The GRI Index is widely used by businesses as a standard for evaluating corporate sustainability reporting. This study uses environmental, economic, and social reporting as the basis for evaluating the sustainability disclosure index, with particular indicators used to analyze each category. Thirteen (13) indicators are used to measure economic disclosure, thirty (30) indicators are used to calculate an overall score for environmental disclosure while thirty-four (34) indicators was used to measure social disclosure. For this study, the GRI Index that was chosen includes both the G4

and G3.1 version. G3 was used for content analysis in situations where businesses choose not to use either version. The Global Reporting Initiative superseded the G3 rating structure in 2011 with the more current and pertinent G4 Content Index Tool. Scholars like Plumlee, Brown, and Marshall (2008), Moroney, Windsor, and Aw (2009), and Rupley, Brown, and Marshall (2011) rely on the GRI Index since it is acknowledged as the best reporting methodology (Guenther, Hoppe & Poser, 2010; GRI, 2016). In this study, the firm's level of adherence to the GRI principles is utilized to evaluate the quality of sustainability report disclosures while maintaining objectivity. The main source of this information is the GRI database, which provides a standard measurement for reporting on sustainability (Nguyen, 2020). Since the Guidelines are optional, organizations are free to select what non-financial information they wish to disclose. This study used a dichotomous procedure to note either zero or one for each item reported in the information category, following the works of Clarkson et al. (2008) Suluo, et al. (2023), Jones et al. (2007), Michelin and Parbonetti (2012), Michelin and Parbonetti (2012) and Lu et al. (2015). If the value is 0 (no), there is no disclosure of the item and if the value 1 (yes) otherwise. The total score will then be shown as a percentage of the total possible points. The use of this binary coding system is justified by its use by researchers such as Sidorova and Gurvitch (2019) who scored items of their corporate sustainability reporting index with a value of one (1) if present and zero (0) if absent. After the scoring is done then the score is summed to get the overall score for each company. This measuring technique is also consistent with prior research (Hoang et al. 2016; Lu et al. 2015; Ntim & Soobaroyen, 2013).

Control Variables

Firm Size (FS); Total assets are the selected metric for measuring Firm Size (FS) in this study, which is consistent with the methodology used by Tariverdi, et al., (2014) as well as Laeven, et al., (2014). The theory suggests that firm value and size are positively correlated. It is defined as $SIZE_{it}$, where $SIZE_{it}$ is the logarithm of the total assets for the current year.

Firm Age (FA); by defining age as the difference between the year under review and the company's founding date, the research used measurements that were consistent with earlier studies (Eriki, 2015). This method was used to determine how long the company had been in existence prior to 2012 and 2022.

Data Analysis and Model Specification

Panel data was utilized to investigate the relationships among the study variables. STATA statistical software facilitated the sorting, categorization, and analysis of the data. Panel data, often referred to as combined or pooled data, incorporates attributes of both time series and cross-sectional data. This approach enhances data robustness by considering individual firm data alongside that of other firms within the industry, spanning various time periods. The model tested the direct effects of sustainability reporting and firm value as follows:

$$FV_{it+1} = \beta_{0it} + \beta_{1it}FA_{it} + \beta_{2it}FS_{it} + \beta_{3it}SOR_{it} + \beta_{4it}ECONR_{it} + \beta_{5it}ENVIR_{it} + \mu_{it} + \varepsilon_{it}$$

Where;

FV - is the measure of firm value, β_0 is change in FV that independent variables present in the model cannot explain. Note that it is the constant in the equation, FA Firms Age, FS is Firms Size, SOR is Social Reporting, ECONR is Economic Reporting, ENVIR Environmental Reporting, ε is error term, i firms at time t while μ_{it} is the individual specific effect.

Results

Descriptive and Trend Analysis

Table 1 offers a thorough summary of companies that are listed on the Nairobi Securities Exchange (NSE). It includes a number of characteristics pertaining to business value, social, environmental and economic sustainability reporting, firm size, and firm age. Based on the information presented in Table 1, the listed companies have an average firm value of 2.77. The NSE observes economic methods of reporting at a rate of about 43 percent. With a median score of 0.38, half of the firms had scores lower than this one for economic reporting. This indicates that, although there is some variation within companies, listed firms in the NSE generally exhibits a reasonable level of economic reporting. On the other side, environmental reporting is estimated to be approximately 12%. It is noteworthy that 50% of enterprises have lower environmental reporting ratings, as indicated by the median score of 0.03. Though most enterprises still have very low reporting levels, the distribution skews positively (skewness = 1.78), suggesting a tendency toward higher environmental reporting ratings. A distribution that is more peaked than a normal distribution is suggested by the kurtosis score of 5.40, which raises the potential that certain businesses submit environmental information at noticeably higher levels than others. In terms of social reporting, it comes in at about 18%. With a median score of 0.18, half of the enterprises fall short of this cutoff. In a similar vein, although there is still variation within organizations, the distribution skews positively (skewness = 1.25), suggesting a tendency for greater social reporting scores. Once more, a relatively peaked distribution is suggested by the kurtosis value of 5.89, which may point to the existence of companies with noticeably more stringent social reporting policies. In terms of social reporting, it comes in at about 18%. With a median score of 0.18, half of the enterprises fall short of this cutoff. In a similar vein, although there is still variation within organizations, the distribution skews positively (skewness = 1.25), suggesting a tendency for greater social reporting scores. Once more, a relatively peaked distribution is suggested by the kurtosis value of 5.89, which may point to the existence of companies with noticeably more stringent social reporting policies.

.Stats	N	Min	Max	Mean	P50	SD	Skewness	Kurtosis
FV	320	0.39	82.80	2.77	0.94	8.51	6.05	42.66
ECONR	320	0.12	0.77	0.43	0.38	0.16	0.45	2.47
ENVIR	320	0.00	0.70	0.12	0.03	0.17	1.78	5.40
SR	320	0.03	0.59	0.18	0.18	0.09	1.25	5.89
FS	320	8.20	11.62	10.10	10.12	0.75	-0.24	2.82
FA	320	13.00	152.00	71.19	64.00	28.17	0.51	3.20

Table 1 Overall Descriptive Statistics

Source: (Field Data, 2023)

Key

FV = Firm Value, ECONR = Economic Reporting, SOR = Social Reporting, ENVIR = Environmental Reporting, FS = Firm Size, FA = firm age

Unit Root Test

The presented findings concern unit root tests applied to different variables in a time series dataset. Finding out if the variables are stationary or non-stationary is the goal of these tests, as this is an important factor to take into account when doing time series analysis. The following summarizes how the results in Table 2 should be interpreted:

There were three different unit root tests used: Im-Pesaran-Shin, Harris-Tzavalis, and Levin-Lin-Chu. For each of the three tests, the null hypothesis (H_0) asserts that the panels (variables) have unit roots, which would suggest non-stationarity. On the other hand, the Harris-Tzavalis and Levin-Lin-Chu tests' alternative hypothesis (H_a) suggests that the panels are stationary. The alternate hypothesis states that certain panels are stationary for the Im-Pesaran-Shin test. The p-values displayed in the table indicate the likelihood of seeing the specified outcomes assuming the validity of the null hypothesis. A lower p-value suggests more evidence to reject the null hypothesis and a greater chance of finding that the variables are not stationary. The provided p-values for each test consistently fall below 0.05 for each variable (FV, SR, ECONR, ENVIR, FS, and FA), indicating a 5 percent level of significance. This indicates that the alternative hypothesis of stationarity has been accepted, rejecting the null hypothesis of a unit root (non-stationarity). All variables (FV, SR, ECONR, ENVIR, FS, and FA) show integration of order zero (I (0)), indicating stationarity at their respective levels, according to the test results. They retain stationarity even after taking the initial difference of the variables (I (1)). This implies that following the differencing procedure, there may be a lasting association between the variables.

Table 2: Unit root test

		Inverse chi-squared(60)	Inverse normal	Inverse logit t(154)	Modified inv. chi-squared
		P	Z	L*	Pm
FV	Statistic	185.621	-6.373	-7.436	11.468
	p-value	0.000	0.000	0.000	0.000
SR	Statistic	399.617	-11.947	-19.399	31.003
	p-value	0.000	0.000	0.000	0.000
ECONR	Statistic	296.119	-8.977	-13.704	21.555
	p-value	0.000	0.000	0.000	0.000
ENVIR	Statistic	106.109	-4.658	-8.875	4.467
	p-value	0.000	0.000	0.000	0.000
FS	Statistic	184.986	-5.022	-7.466	11.410
	p-value	0.000	0.000	0.000	0.000
FA	Statistic	1898.993	-39.762	-95.855	167.876
	p-value	0.000	0.000	0.000	0.000

Correlation Results

Firm Value (FV) and Economic Reporting (ECONR) showed a weak negative connection ($\rho = -0.113$, $p\text{-value} < 0.05$), suggesting that firms with a stronger emphasis on economic reporting tend to have lower firm values. Comparably, there is a marginally negative association ($\rho = -0.094$, $p\text{-value} < 0.05$) between Firm Value (FV) and Social Reporting (SOR), suggesting that businesses that prioritize social reporting may see a minor decline in firm value. On the other hand, a moderate positive association ($\rho = 0.371$, $p\text{-value} < 0.05$) was found between Firm Value (FV) and Environmental Reporting (ENVIR), indicating that businesses that prioritize reporting on the environment typically have marginally higher firm values. On the other hand, a somewhat positive association ($\rho = 0.094$, $p\text{-value} > 0.05$) was found between Firm Value (FV) and Firm Size (FS), suggesting that firms with greater sizes typically have slightly higher firm values. Additionally, a marginally negative connection ($\rho = -0.351$, $p\text{-value} < 0.05$) was discovered between Firm Age (FA) and Firm Value (FV), indicating that older businesses can see a minor decline in firm value.

Table 3: Correlation results

	FV	SR	ECONR	ENVIR	FA	FS
FV	1					
SR	-0.094	1				
ECONR	-.113*	.501**	1			
ENVIR	.371**	.372**	.275**	1		
FA	0.094	0.069	-0.101	-0.255**	1	
FS	-.351**	0.338**	0.411**	-0.074	-.225**	1

* Correlation is significant at the 0.05 level (2-tailed).

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

Source: (Field Data, 2023)

4.5 Random Effects GLS regression

After applying the Hausman tests, the random effects model was found to be the best appropriate option for this analysis, with a significant chi-square value of 1.25 and a p-value of 0.9400. The random effects model is used in this study to examine the link between numerous independent factors and company value. Table 4 presents the results, which indicate an R-squared value of 0.164. This value indicates the percentage of variance in the dependent variable (firm value) that can be accounted for by the independent variables in each group. Here, the sum of the effects of the independent variables explains around 16.4 percent of the variation in firm value among the individual groups. The percentage of the dependent variable's variance that can be accounted for by the independent variables in each group is shown by the between R-squared (0.277). In this case, about 27.7% of the variation in firm value between the groups can be explained by the

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model. This implies that the explanatory power of the independent variables to explain the variations in firm value between the groups is moderate. By incorporating both within and between effects, the overall R-squared (0.206) gives an overall indication of how well the model explains the variation in firm value. In this instance, the independent variables together account for about 20.6% of the variation in firm value overall, according to the overall R-squared value. The results underscore the insignificance of the impact of social reporting on firm value within this context, as evidenced by a coefficient estimate of -2.949 and a non-significant p-value of 0.230, surpassing the conventional threshold of 0.05. Consequently, the study refrains from rejecting the null hypothesis H_{01} , suggesting that social reporting may not exert a discernible effect on the firm value of companies.

In contrast, economic reporting exhibits a statistically significant negative association with firm value, as indicated by a coefficient estimate of -6.493 and a p-value of 0.000, falling below the 0.05 threshold. Higher levels of economic reporting are linked to lower firm value in this model. Therefore, the study rejects the null hypothesis H_{02} , indicating a significant negative relationship between economic reporting and firm value.

Conversely, environmental reporting demonstrates a statistically significant positive relationship with firm value, evidenced by a coefficient estimate of 5.833 and an extremely low p-value of less than 0.0001, underscoring its significance at the 0.05 level. This implies that heightened levels of environmental reporting are associated with elevated firm value. Consequently, the study rejects the null hypothesis H_{03} , establishing a significant positive relationship between environmental reporting and firm value.

As for the control variables, firm size (FS) exhibits a non-significant relationship with firm value, as indicated by a coefficient estimate of -0.363 and a p-value of 0.680. Similarly, firm age (FA) does not manifest a significant relationship, with a coefficient estimate of 1.547 and a p-value of 0.380.

Table 4: Random Effects Regression

Random-effects GLS regression		Number of obs	=	320		
Group variable: id		Number of group	=	32		
R-sq:	within	0.164	Obs per group	min	10	
	between	0.277		avg	10	
	overall	0.206		max	10	
			Wald chi2(5)	=	59.18	
corr(u_i, b)	0 (assumed)	0.314	Prob > chi2	=	0.0000	
FV	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
SOR	-2.949	2.456	-1.200	0.230	-7.763	1.864
ECONR	-6.493	1.360	-4.770	0.000	-9.158	-3.828
ENVIR	5.833	1.052	5.550	0.000	3.772	7.894
FS	-0.363	0.880	-0.410	0.680	-2.088	1.361
FA	1.547	1.763	0.880	0.380	-1.910	5.003
_cons	2.496	11.361	0.220	0.826	-19.772	24.764
sigma_u	6.198					
sigma_e	2.382					
Hausman						
test						
chi2(5)	1.25					
Prob>chi2	0.9400					

Source: (Field Data, 2023)

Conclusions and Discussion of the Findings

The results indicate an insignificant relationship between social reporting and firm value. The specific reporting practices and disclosure levels of the companies in the Nairobi Securities Exchange could vary widely, affecting the perceived value and relevance of social reports. Additionally, the market and investor sentiment towards social responsibility practices and their impact on financial performance might differ in this particular context. However, it is essential to acknowledge that previous studies on this subject have yielded diverse findings, with some studies aligning with the current results and others contradicting them. In support of the insignificant relationship found in this study, Al-Anbuky et al. (2018) conducted research in the United Kingdom and reported a positive relationship between social reporting and firm value, albeit statistically insignificant. This suggests that firms publishing social reports might experience a slight increase in firm value, but the effect is not substantial enough to be considered significant. Furthermore, Asuquo, Dada, and Onyeogaziri (2018) studied selected Nigerian brewery firms and found that economic, environmental, and social performance disclosures had no significant effect on the return on assets of the firms. Their results align with the insignificant relationship observed in this study, indicating that social reporting may not have a significant impact on firm value.

In contrast, other studies have reported contrasting results. Büyükkarabacak and Ersoy (2020) examined the relationship between social reports and firm value in Turkey and found a statistically significant positive relationship. Their findings suggest that firms publishing social reports are perceived to have higher firm value compared to firms that do not publish such reports. Similarly, Swarnapali and Luo (2018) analyzed the effect of corporate sustainability reporting on firm value in Sri Lanka and reported a positive relationship, supporting the value-enhancing theory. Moreover, Chen et al. (2017) investigated social reporting and firm value in China and found a statistically significant negative relationship. This implies that firms publishing social reports were perceived to have lower firm value than firms that did not. The authors suggested that this negative association could be due to social reporting being viewed as a sign of weak corporate governance, thus affecting firm value negatively.

The findings of this study reveal a statistically significant negative relationship between economic reporting and firm value for companies listed in the Nairobi Securities Exchange. Higher levels of economic reporting are associated with lower firm value, indicating that firms publishing economic reports may experience a decrease in their market-to-book ratio and overall firm value. This might be because companies that engage in more extensive economic reporting may be revealing financial information that is less favorable or indicating lower financial performance. This can lead to a perception of weaker financial health among investors and stakeholders, resulting in a decrease in firm value. Investors and market participants may interpret increased economic reporting as an indication that a company is facing financial challenges or is trying to attract attention to compensate for underlying weaknesses. As a result, the market sentiment towards the company may turn negative, leading to a decline in its value. The quality of economic reporting matters significantly. If the information provided in economic reports is deemed less reliable or lacks transparency, it may lead to reduced investor confidence, resulting in a negative impact on firm value. Some studies have aligned with the current findings, reporting a positive relationship between economic reporting and firm value. For instance, Srivastava, Lüders, and Rüschenpöhler (2013) found that economic reporting significantly influenced firm value for German companies between 2000 and 2011. Similarly, Jain and Aggarwal (2012) conducted a survey of Indian companies and observed that higher quality economic reports were associated with higher firm market values. On the other hand, there are studies that contradict the positive relationship between economic reporting and firm value. Yousafzai, Köse, and Akhtar (2012) examined a sample of Pakistani companies and found that economic reporting had no significant effect on firm value. Their results suggest that while economic reporting may not have a direct impact on firm value, higher quality economic reports were associated with higher firm market values. In addition to the contrasting results on the relationship between economic reporting and firm value, some studies have explored the effect of sustainability disclosure on overall firm performance and its implications for firm value. Dura, Chandrarin, and Subiyantoro (2021) found that economic performance had a positive effect on financial performance, but it harmed firm value. In contrast, social performance had no negative effect on firm value, and environmental performance had a positive effect on firm value through financial performance.

The investigation's findings show that, among companies registered on the Nairobi Securities Exchange, environmental reporting and firm valuation are positively correlated in a statistically meaningful way. The results indicate that companies with greater environmental disclosure

levels are associated with higher firm values, indicating a relationship between environmental reporting and increased company values in this particular setting. A logical reason for this positive correlation is that a company's commitment to environmentally sustainable methods and ethical business conduct is demonstrated through its environmental reporting. Companies that demonstrate environmental responsibility and knowledge are valued more by stakeholders and investors, who see these actions as a sign of a proactive approach to mitigating environmental risks and seizing possibilities. As a result, businesses that disclose environmental information more thoroughly would be seen as having better long-term prospects, which would reassure investors and raise their firm value. These current findings are consistent with numerous earlier research that have shown a positive association between environmental reporting and corporate value.

For instance, non-financial companies registered on the Stockholm Stock Exchange showed a favorable association between environmental disclosure and firm value, according to Bergek et al. (2019). Similarly, Tzabbar and Levy's (2020) analysis of publicly traded companies on the London Stock Exchange revealed a favorable correlation between environmental disclosure and firm valuation. Environmental reporting has a favorable and large influence on firm value for American enterprises, according to reports by Friedman (2017) and Perera and Sriyani (2019).

Furthermore, Liu et al.'s study from 2022 highlighted the non-financial performance's mediating function in the connection between financial performance and ESG actions, such as environmental reporting. This implies that beneficial effects on business value are a result of positive ESG initiatives. Abdi et al. (2020) discovered that the airline industry's firm value and financial performance were significantly impacted by the adoption of ESG disclosures, especially in the environmental pillar. However, other researchers have produced contradicting results. In their 2016 study, Malarvizhi and Matta found no evidence of a correlation between environmental disclosure and corporate performance among Indian listed enterprises on the Bombay Stock Exchange (BSE). While Akrouta and Ben Othmanb (2015) found a positive correlation between environmental disclosure and stock market liquidity for Arab Middle Eastern and North African (MENA) companies, Gatimbu and Wabwire (2016) reported a significant positive impact of environmental disclosure on performance for NSE-listed firms.

Recommendations and implications

Based on the findings of the study, Companies should carefully consider the level of economic reporting they engage in. While some economic reporting may be necessary, companies should avoid excessive reporting, as this could send a negative signal to investors. It is recommended that companies perform a comprehensive assessment of their existing economic reporting procedures and pinpoint chances to optimize information disclosure. Evaluating the structure and tenor of economic reports is advised, with the goals of transparency, brevity, and clarity. Furthermore, given its proven beneficial effect on company value, environmental reporting should receive special attention. A company's dedication to sustainability and ethical business practices is demonstrated through environmental reporting, which inspires greater investor trust.

Companies are urged to create extensive environmental reporting programs in order to demonstrate their dedication to environmental responsibility. The company's environmental

goals and objectives should be spelled out in detail in this program, along with a methodical approach for tracking and disclosing environmental performance. A strategic assessment of sustainability reporting procedures is crucial for management of companies listed on the Nairobi Securities Exchange, given the potential impact on firm value. Economic and environmental reporting are crucial in influencing investor opinions, even though social reporting might not have a major impact on company value. In order to improve investor confidence and trust, managers should give priority to initiatives aimed at enhancing the caliber and openness of economic and environmental reporting.

Policy makers in Kenya should consider implementing regulations or guidelines that promote high-quality economic and environmental reporting practices for companies listed on the Nairobi Securities Exchange. This can be achieved through mandatory reporting requirements, adherence to global sustainability standards, and penalties for non-compliance.

The study's findings have theoretical implications for various management and accounting theories. The insignificant relationship between social reporting and firm value aligns with the legitimacy theory, which suggests that social reporting may be more of a symbolic gesture to appease stakeholders rather than directly influencing firm value.

Further Studies

The findings of this study provide a foundation for further research in the field of sustainability reporting and firm value. Conducting longitudinal studies to examine the dynamic nature of these relationships over time can offer valuable insights. Comparative studies across different stock exchanges and countries can provide a broader understanding of how cultural and institutional contexts influence the relationships between sustainability reporting and firm value. Moreover, future studies can delve into the investor perspective and explore how individual and institutional investors incorporate sustainability reporting into their decision-making processes.

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