VOLUNTARY SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE: EVIDENCE FROM GLOBAL REPORTING INITIATIVE DISCLOSURES IN THE DEVELOPING ECONOMY

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Abstract

Considering the growing interest in sustainability reporting and the benefits of sustainability initiatives to developing countries (Ali, Frynas, & Mahmood, 2017), the scarcity of studies on sustainability in developing climes is surprising. This study examines the trend of voluntary sustainability reporting in Africa and the relationship between sustainability disclosures and firms' financial performance. This paper measures sustainability disclosures using content analysis of the Global Reporting Initiative Guidelines (GRI G4) for total disclosure and the sub-categories of economic, environmental, and social disclosures. Financial performance measures are return on assets (ROA) and return on equity (ROE). Results of the multiple comparison of means do not show any significant improvement in sustainability reporting over the study period. Results of the multiple regression analysis, however, reveal a positive relationship between measures of sustainability disclosures and both ROA and ROE. Additional results show that disclosing firms do not generally have their sustainability reports assured and are from countries with poor sustainability performance. These findings contribute to the literature in reconciling the mixed results from prior studies (Aggarwal, 2013; Al Hawaj & Buallay, 2022) and are useful to the GRI organization in making improvements to their reporting guidelines, particularly as to how the improvements touch African countries.

Keywords: Global Reporting Initiative (GRI), Africa, Sustainability, Disclosures, Financial Performance

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1. INTRODUCTION

Sustainability reporting makes it easier for an organization to identify the impact of its operations on the economy, environment, and society (Farisyi, Musadieq, Utami, & Damayanti, 2022). Also, disclosure of sustainability performance helps investors make a better comparison of companies, thereby, better able to make informed investment decisions (Girón, Kazemikhasragh, Cicchiello, & Panetti, 2021). The Global Reporting Initiative (GRI, https://www.globalreporting.org/) pioneered sustainability reporting in 1997. According to the organization, "The GRI Standards help organizations understand their impacts on the economy, environment, and society - including those on human rights" (GRI, n.d.). To achieve the organization's objectives, GRI provides a platform for organizations to disclose economic, environmental, and social impact activities. GRI reporting can help organizations identify and reduce risks, and take necessary steps towards operating in a more sustainable world (GRI, n.d.). Findings from The KPMG 2017 survey on sustainability reporting trends among the world's 250 largest companies (G250) and top 100 companies by revenue (N100)[1] reveal that the GRI framework is the most commonly used framework for reporting sustainability initiatives. Also, 63% of the N100 and 75% of the G250 use this framework (Blasco & King, 2017). This study is based on the GRI G4 reporting guideline which was introduced in 2013 to enhance sustainability reporting by ensuring the reports contain value-adding information about the organization's sustainability matters and compared to earlier standards, the G4 standards have more focus on materiality which is intended to make the sustainability reports more credible and relevant (PricewaterhouseCoopers [PwC], 2016)[2].

While it is established that developing countries benefit more from social sustainability initiatives (Ali et al., 2017), with the exclusion of studies on South African firms, few studies have examined sustainability disclosures in other African countries. There are two crucial questions begging for answers regarding the dearth of sustainability studies. First is whether the lack of studies on sustainability reporting by most African countries is because they do not consider sustainability reporting important. After all, there are no perceived benefits to reporting. Second is whether researchers are more interested in countries that have mandated disclosure requirements for sustainability initiatives. Irrespective, insights from the few studies available indicate that the momentum to study sustainability reporting among firms in Africa is building. For example, a study by Nwobu, Owolabi, and Iyoha (2017) which examined sustainability disclosure trends among Nigerian banks reveals that sustainability reporting has improved for environmental and social disclosures. Similarly, Wachira and Berndt's (2016) study on sustainability disclosure in Mauritius, Kenya, and South Africa indicates that South African countries display higher levels and depth of sustainability disclosures compared to the other two countries in their study. Nwaigwe, Ofoegbu, Dibia, and Nwaogwugwu (2022) also find some variations between the extent of sustainability disclosure and firm value. Since research interest appears to be on the increase, there is a possibility that the lack of studies is because developing economies do not observe the benefits of sustainability reporting. This study aims to shed more light on this issue.

Therefore, this study is carried out to examine sustainability disclosures in Africa. It is informed by the following research questions:

RQ1: Has voluntary sustainability disclosures significantly improved in Africa?

RQ2: Is there a relationship between sustainability disclosures and financial performance for firms that voluntarily disclose sustainability initiatives in Africa?

The sustainability disclosure measures in this study are derived from the content analysis of the GRI G4 Guidelines. The Guidelines comprise three categories of economic, environmental, and social aspects. The analysis in this study is conducted at both the aggregate and the categorical levels. Financial performance measures are return on assets (ROA) and return on equity (ROE). This study employs multiple comparison of means and regression models based on a final sample of 52 firm-year observations from 2013 to 2017.

The results do not show a significant difference in sustainability disclosures over the period of the study. However, findings from examining the relationship between sustainability disclosures and financial performance show a positive relationship for all the sustainability measures except economic disclosures. Thus, suggesting that disclosing firms are relatively profitable in line with the predictions of disclosure theory.

This paper makes three contributions. First, this study extends the research on sustainability reporting by examining the association between sustainability disclosures and firm performance. Thereby, responding to the call by Lu and Taylor (2016) for future studies to consider non-U.S. settings and to the call of Aifuwa (2020) for research on more sectors of the economy. Second, through its empirical findings of a lack of significant improvement in sustainability reporting in developing countries, this study provides evidence that can encourage firms in developing countries to embrace sustainability initiatives and provide more disclosures for better reporting quality. Finally, through its focus on developing countries, findings from this study are useful to the GRI organization in making improvements to the reporting guidelines, particularly as to how such improvements touch African countries.

Following the introduction, the rest of the paper is organized as follows. Section 2 reviews the literature on sustainability disclosures and presents the hypotheses. Section 3 outlines the research methodology, followed by the research results and discussion in Section 4. Section 5 concludes the paper.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

There are two competing theories on voluntary sustainability disclosures. On the one hand is the voluntary disclosure literature's prediction that

[1] G250 is the 250 largest companies by revenue of the Fortune 500 (G250) ranking of 2016. N100 is the top 100 companies by revenue in the sample of 49 countries.

[2] The GRI G4 has been replaced by the GRI standard effective July 1, 2018.

firms will voluntarily disclose information as a signal of superior performance (Verrecchia, 1983). To avoid disclosing sensitive information to competitors, this theory further predicts that firms with higher proprietary costs are associated with a lower level of disclosures. The reverse also holds that firms with lower proprietary costs have a higher level of disclosures (Verrecchia, 2001). On the other hand, legitimacy theory predicts that firms voluntarily disclose to be acceptable to society. Firms are influenced by societal expectations and values. To maintain legitimacy and fit in society, firms can maintain communications through disclosure. The legitimacy theory was pioneered by Davis (1973) and propounds that organizations seek to operate within the bounds and norms of their society. The theory, therefore, suggests that organizations seek to be seen as socially responsible so they can be accepted to operate their businesses. Firms can, therefore, disclose sustainability reports to mitigate negative societal reactions to bad news. This study sheds more light on these competing theories as applicable to sustainability disclosures, specifically, in Africa.

2.1. Sustainability reporting in Africa

Sustainability reporting has gained prominence in developed countries in recent times. For example, the United Kingdom introduced mandatory climate change reporting for large firms in April 2022 (Glen & Hands, 2021). In Africa, however, only South Africa has made sustainability reporting mandatory. Other African countries are still operating under a voluntary regime. In addition to the lack of reporting legislation, there are also not many studies that have examined sustainability disclosures in these countries. It is therefore unclear whether the lack of sustainability reporting is because of the voluntary nature of sustainability reporting or because firms chose not to report to avoid the extra cost of disclosure. An exploratory study on the level and depth of sustainability reporting by Wachira and Berndt (2016) reveals that sustainability reporting scores and the depth of disclosure are higher in South Africa compared to Kenya and Mauritius. Focusing on Nigerian banks, Nwobu et al.'s (2017) examination of changes in sustainability reporting between the period 2010 and 2014 also shows that disclosure levels were relatively low for environmental indicators. Conversely, social indicator reporting was high for some aspects such as employee benefits, health and safety, and diversity in governance. Similarly, Nwaigwe et al. (2022) found variations in the valuation of sustainability disclosures across the dimensions of economic, social, and environmental aspects for Nigerian listed banks.

Considering the above studies focus on only a few countries, there is limited evidence to evaluate the trend of sustainability reporting in other African countries. A gap that this study intends to cover.

2.2. Incentives to voluntarily disclose sustainability

There are incentives for firms to voluntarily disclose sustainability initiatives. Research findings have identified some benefits of voluntary disclosure such as a reduction in the cost of equity capital (Botosan, 1997; Lambert, Leuz, & Verrecchia, 2007), improvement in earnings quality (Francis, Nanda, & Olsson, 2008), and reduction in information asymmetry and bid-ask spread (Leuz & Verrecchia, 2000). Therefore, firms can enjoy these benefits if they choose to voluntarily disclose sustainability initiatives. In addition, in recent climes, there has been an increased emphasis on the triple bottom line reporting (profit, environment, and people). Companies are therefore facing increasing stakeholder pressure to be sustainable (Chen & Wang, 2011).

Specific to sustainability reporting, extant studies have identified incentives for reporting sustainability initiatives. These incentives include reducing information asymmetry, increasing transparency, improving reputation among investors, and enhancing credibility (Girón et al., 2021). Other benefits that have also been observed include a positive impact on firm performance (Hussain, 2015; Goel & Misra, 2017) and lower analyst forecast error (Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012). Although some studies have reported no benefit from disclosing sustainability initiatives (Jones, Frost, Loftus, & Van Der Laan, 2007), the general findings in the literature are an incentive to disclose to enjoy the perceived benefits of disclosure (Botosan, 1997; Lambert et al., 2007; Leuz & Verrecchia, 2000). Therefore, this study expects sustainability reporting will improve over time as a result of the increased awareness regarding non-financial disclosures and the incentive for firms to enjoy the perceived benefits of sustainability disclosure.

Based on the above, the below hypothesis is thus stated in the alternate form:

H1: There is a significant improvement in sustainability disclosures of firms in Africa.

2.3. Sustainability disclosure and financial performance

As stated at the outset, firms can voluntarily disclose to signal superior performance or to maintain legitimacy and fit in society. Based on the propositions put forward in these theories, a positive relationship is likely to be observed between sustainability disclosures and the financial performance of firms disclose in order to signal their superior performance as predicted by the voluntary disclosure theory. However, if firms disclose sustainability initiatives to mitigate the negative effect of poor performance based on the legitimacy theory's proposition, a negative relationship between sustainability disclosure and financial performance will be observed.

Results from extant studies on the relationship between sustainability disclosure and financial performance find conflicting results ranging from mixed association (Al Hawaj & Buallay, 2022; Johari & Komathy, 2019; Jones et al., 2007), to a positive association (Goel & Misra, 2017; Laskar, 2018), or no association (Aggarwal, 2013; Nwaigwe et al., 2022). Al Hawaj and Buallay (2022) find a mixed association in the relationship between financial performance measured as ROA, ROE, and Tobin's Q and sustainability reporting for various sectors. For example, while ROA is positive for the energy and manufacturing sectors, it is not significant for

the agricultural and food industries sectors. Also, ROE and Tobin's Q were not significant for the agricultural and energy sectors but positive for the manufacturing sector and negative for the banks and financial services sector. Similarly, Johari and Komathy's (2019) study of firms in Malaysia shows a positive relationship between sustainability reporting and both ROA and earnings per share. The relationship is however insignificant for ROE and dividend per share. Jones et al. (2007) also find mixed results in their study, while the association between sustainability disclosure and abnormal stock returns is negative, the association is positive for several measures of firm performance such as operating cash flow performance and working capital levels.

Investigating firms in Japan, South Korea, India, and Indonesia, Laskar (2018) finds a positive association between sustainability performance based on the GRI framework and firm performance. Laskar (2018) also finds evidence that the association is stronger for developed countries compared to developing economies.

Contrary to studies that find either a positive or negative relationship, some studies find inconclusive results. Aggarwal's (2013) examination of the impact of corporate sustainability on financial performance for firms in India is positive but insignificant. Similar to Aggarwal's (2013) finding, Nwaigwe et al. (2022) also find a positive but insignificant relationship between sustainability disclosure extent and firm market value for firms listed on the Nigerian Stock Exchange. The non-significant results observed also corroborate Goel and Misra's (2017) finding of non-significant results for price-to-earnings ratio, price-to-book value, and ROE.

The above discussion suggests that the relationship between sustainability disclosure and financial performance varies. Current literature has however not yet clearly identified the reasons for the variations observed. In view of the conflicting results and the lack of clarity from current research, the second hypothesis is hereby stated in the null form below:

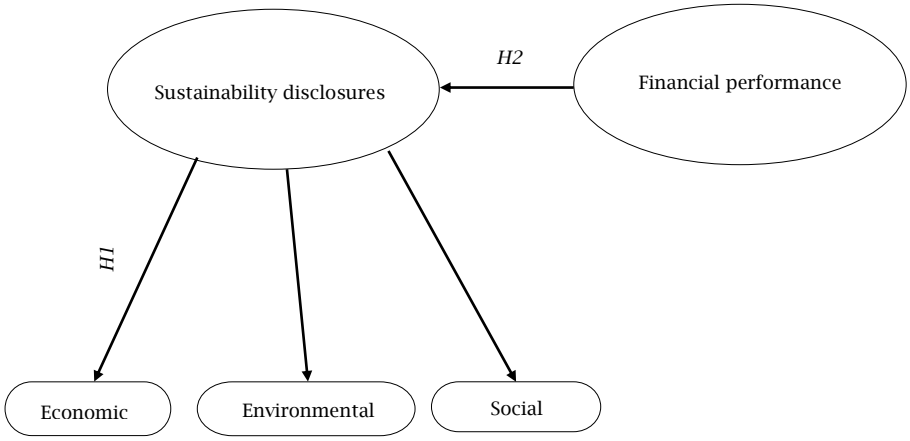
H2: There is no relationship between sustainability disclosure and the financial performance of firms in Africa.

2.4. Conceptual framework

In order to test these research hypotheses, this study examines the extent of sustainability disclosures based on the GRI reporting framework and investigates the relationship between sustainability disclosures and firms' financial performance.

The objective of the conceptual framework is to exemplify the dependent and independent variables in this study. This conceptual framework is hereby presented in Figure 1 below.

Figure 1. Concept map



3. RESEARCH METHODOLOGY

The study population comprises all firms in Africa that voluntarily report sustainability activities using the GRI G4 standards. Although, some studies have used other sustainability frameworks such as the Bloomberg index on environmental, social, and governance index (Al Hawaj & Buallay, 2022) and stand-alone corporate social responsibility (CSR) report (Dhaliwal et al., 2012), the GRI framework is regarded as the most used sustainability reporting framework (Blasco & King, 2017). Sustainability reports of organizations were extracted from the GRI database[3]. For each organization, data relating to a company name, year of the report, date filed, country, sector, size (large, multinational enterprises, or small and medium-sized enterprises), adherence level, whether the report is assured, whether the report is integrated, and the disclosure for the three categorical aspects of economic, environmental, and social.

A total of 74 GRI reports that disclosed sustainability initiatives based on the G4 Guidelines were extracted. This number of reports was further reduced to 52 (for 32 unique firms) after excluding firms with incomplete data for the study period between 2013 and 2017. This cross-country study covers firms in Botswana, Cote d'Ivoire, Cape Verde, Egypt, Kenya, Mauritius, Morocco, Nigeria, Uganda, and Zimbabwe.

[3] https://www.globalreporting.org/search

This study employs multiple comparison of means and regression models to examine the research questions.

3.1. Measures of sustainability disclosures and financial performance

Sustainability disclosures are measured based on the specific categories of economic, environmental, and social disclosures of the GRI G4 Guidelines. Although the G4 Guidelines were replaced by the GRI Standards effective July 1, 2018, the G4 is still the most widely adopted guideline. Compared to 88% of firms using the G4 Guidelines, only 2% used the G3 Guidelines while 10% used the GRI standards (Blasco & King, 2017). The GRI organization transitioned from the G3 to G4 Guidelines in 2013. Under the G4 Guidelines, firms have the option of reporting in line with the core option which contains the essential elements of a sustainability report, or the comprehensive option which requires additional standard disclosures of the organization's strategy and analysis, governance, and ethics and integrity. This study focuses only on the GRI G4 specific guidelines made up of three core aspects of economic, environmental, and social. There are a total of 46 aspects and 91 indicators (see Appendix). Of the 46 aspects and 91 indicators, 4 aspects and 9 indicators are used for economic, 12 aspects and 34 indicators are used for environmental, while 30 aspects and 48 indicators are used for social.

To examine the hypotheses, sustainability disclosures are measured using manual content analysis. Three disclosure indexes (economic disclosure index, environmental disclosure index, and social disclosure index) are constructed. The sustainability disclosure information is analysed in line with the GRI G4 Guidelines to determine the extent of disclosure. The total sustainability disclosure measure (*DISC*) is developed based on 91 indicators; the economic disclosure measure (*ECDISC*) is based on 9 indicators; the environmental sustainability disclosure (*ENDISC*) measure is based on 34 indicators and the social sustainability disclosure (*SODISC*) is based on 48 indicators. Consistent with prior literature (Girón et al., 2021; Nwaigwe et al., 2022), binary coding is used where a score of 1 is awarded if a company discloses a specific sustainability indicator in line with the GRI G4 Guidelines and zero otherwise. To illustrate, in calculating the score for *DISC* (total disclosure), if a company discloses only 40 of the 91 total expected sustainability disclosures, then the score for *DISC* will be 0.44 (40/91). Furthermore, as the focus of this study is on the comprehensiveness (i.e., extent) of disclosure, companies that state an indicator as not applicable are still awarded a score of 1 for disclosing that information.

Financial performance is calculated as ROA measured as net income divided by total assets and ROE calculated as net income divided by shareholders' equity. The control characteristics are thus explained. The global sustainability performance (*GLSUS*) is the proxy for a country's sustainability performance measured based on the World Bank's global goals in promoting sustainability (The World Bank, n.d.). A composite score is derived from the 2016 five global goals[4]. Countries receive a score of one if performance is above average for access to electricity, terrestrial and marine protected areas, and individuals using the internet or below average for air pollution or having a positive value for adjusted net savings. A country with perfect sustainability performance will therefore have a score of five. *GLSUS* takes the value of 1 for firms located in countries with a score of 4 or 5 based on the five criteria explained earlier. These are countries with strong sustainability performance.

The proxy for assured sustainability reports (*ASS*) takes the value of one for firms that have their sustainability reports assured by a third party and zero otherwise. Tarquinio, Raucci, and Benedetti (2018) highlight that companies with assured sustainability reports have more complete and reliable reports. A control variable for firm size (*SIZE*) is measured as the natural log of total assets.

3.2. Empirical model

To examine the first hypothesis (*H1*), a pairwise comparison of means is used to identify significant changes in the extent of disclosures between 2013 and 2017. Similar to prior literature (Narula et al., 2021; Nwobu et al., 2017), a pairwise comparison of means has been used to explore how sustainability disclosures differ for all possible year combinations. The results are adjusted for Bonferroni multiple comparison to minimize the possibility of false significant results.

To examine the second hypothesis (*H2*), the below multiple regression is used to investigate the relationship between sustainability disclosure and financial performance:

$$DISC(ECDISC, ENDISC, SODISC) = \beta_0 + \beta_1(ROA, ROE) + \beta_2 GLSUS + \beta_3 ASS + \beta_4 SIZE + YEAR + \varepsilon \quad (1)$$

where:
DISC = Total sustainability disclosure;
ECDISC = Economic sustainability disclosure;
ENDISC = Environmental sustainability disclosure;
SODISC = Social sustainability disclosure;
GLSUS = Global sustainability performance;
ASS = Proxy for assured sustainability reports;
SIZE = Natural log of total assets;
YEAR = Control for firm-year.

Table 1 below presents a description of the variables in this study.

[4] The five goals are: 1) percentage of population with access to electricity, 2) the ambient air pollution measured in micrograms per cubic meter, 3) the adjusted net savings (percentage of gross national income), 4) the percentage of terrestrial and marine protected areas (percentage of Total Terrestrial Area), and 5) the percentage of individuals using the internet (percentage of population).

Table 1. Description of variables

Variable	*Description*
DISC	Total sustainability disclosure score measured as the proportion of total aspects disclosed.
ECDISC	Economic sustainability disclosure score measured as the proportion of economic aspects disclosed.
ENDISC	Environmental sustainability disclosure score measured as the proportion of environmental aspects disclosed.
SODISC	Social sustainability disclosure score measured as the proportion of social aspects disclosed.
ROA	Return on assets measured as net income divided by total assets.
ROE	Return on equity measured as net income divided by shareholders' equity.
GLSUS	GLSUS is a binary measure of country sustainability performance where countries are awarded a score of one if the score is 4 or 5 on World Bank 2016 five global goals or zero otherwise.
ASS	Binary value where firms with assured sustainability reports are awarded a score of one or zero otherwise.
SIZE	Control variable for firm size and is measured as the natural log of total assets.

Although, some studies have utilized methods such as ANOVA (Mamun, 2022; Nwobu et al., 2017), logistic model (Laskar, 2018), and meta-analytic techniques (Lu & Taylor, 2016), the use of regression models method is also consistent with prior studies (Aggarwal, 2013; Jadoon, Ali, Ayub, Tahir, & Mumtaz, 2021; Nwaigwe et al., 2022).

4. RESULTS AND DISCUSSION

This study analyzes the sustainability disclosure of 52 firms with respect to the sustainability aspects of economic, environmental, and social disclosure.

4.1. Descriptive analysis

Table 2 below presents a summary of the firms in this study. There are 32 unique firms in this study. Four countries namely Botswana, Cape Verde, Kenya, and Uganda have only one firm in the study. Mauritius and Cote d'Ivoire have four firms, while Morocco, Egypt, and Zimbabwe have two, three, and five firms, respectively. Nigeria has ten firms, representing the country with the highest number of firms in the sample.

Table 2. Sample data

Country	*No. of unique firms*	*No. of observations*
Botswana	1	2
Cape Verde	1	3
Cote d'Ivoire	4	5
Egypt	3	4
Kenya	1	2
Mauritius	4	9
Morocco	2	2
Nigeria	10	17
Uganda	1	1
Zimbabwe	5	7
Total	**32**	**52**

Table 3 below presents the descriptive statistics for the measures of sustainability disclosures (*DISC*, *ECDISC*, *ENDISC*, and *SODISC*), and financial performance (*ROA* and *ROE*) as well as the control variables. All the sustainability disclosure measures have a mean value below 0.5 (half of 1.0). *ECDISC* has the highest mean at 0.42 while *ENDISC* has the lowest mean at 0.29. ROA and ROE have mean values of 0.035 and 0.503 respectively implying that most of the firms in the sample are profitable. *GLSUS* has a mean value of 0.12, thus suggesting only a few of the firms in the sample operate in high sustainability performance countries. The standard deviation of 0.32 implies a wide variation in the sample characteristics.

Table 3. Descriptive analysis

Measures	*DISC*	*ECDISC*	*ENDISC*	*SODISC*	*GLSUS*	*ROA*	*ROE*	*ASS*	*SIZE*
Mean	0.345	0.423	0.294	0.317	0.115	0.035	0.503	0.481	17.998
SD	0.236	0.255	0.269	0.241	0.323	0.801	0.602	0.505	5.683
P50	0.295	0.444	0.206	0.292	0.000	0.028	0.151	0.000	18.154
P1	0.000	0.000	0.000	0.000	0.000	-0.263	-0.404	0.000	5.587
P99	1.000	1.000	1.000	1.000	1.000	0.239	0.391	1.000	28.879

Note: N = 52.

ASS, the proxy for assured sustainability disclosure, has a mean of 0.48 implying less than half of the sample study has their sustainability reports assured by third parties. This is surprising as assured sustainability reports can add credibility to the reports (Tarquinio et al., 2018). Expectedly, *SIZE*, the proxy for firm size indicates the sample comprises mainly large firms. This is likely because larger organizations and subsidiaries of multinational companies are most likely to adopt a voluntary initiative that can positively influence the firm's reputation.

4.2. Correlation analysis

Table 4 presents the correlation analyses for the variables in the study. *DISC* is positively correlated with the other sustainability disclosure measures (*ECDISC*, *ENDISC,* and *SODISC*). The sustainability disclosures are also positively correlated with one another. Furthermore, two of the sustainability disclosure measures (*DISC* and *SODISC*) are negatively correlated with *ASS* (assured sustainability reports) suggesting firms with higher disclosure do not have their sustainability reports assured. *GLSUS*, the measure for country sustainability performance, shows a significant negative correlation with three sustainability disclosure measures (*DISC*, *ECDISC*, and *SODISC*). *ASS* is negatively correlated with *DISC* and *SODISC* while *SIZE* shows only a positive correlation with *ASS*, implying that the large firms have assured sustainability reports.

These preliminary results suggest that having sustainability results externally verified (assured) does not necessarily translate into improved

disclosure. A possible explanation for the negative correlation is that assurance service providers may have focused more on the quality of the disclosure and not the extent (i.e., quantity) because sustainability reporting is not a mandatory requirement for the firms in the study sample.

Table 4. Correlation analysis

	DISC	*ECDISC*	*ENDISC*	*SODISC*	*GLSUS*	*ASS*	*SIZE*
DISC	1.000						
ECDISC	0.934***	1.000					
ENDISC	0.922***	0.787***	1.000				
SODISC	0.919***	0.805***	0.758***	1.000			
GLSUS	-0.273*	-0.314**	-0.205	-0.239*	1.000		
ASS	-0.278**	-0.207	-0.223	-0.349**	-0.348**	1.000	
SIZE	0.006	-0.004	-0.034	0.059	0.249*	0.187	1.000

*Note: *** p < 0.01, ** p < 0.05, * p < 0.1.*

4.3. Results of hypotheses test

This sub-section presents the results of the test of the hypotheses. Table 5 presents the results of *H1* predicting an improvement in sustainability disclosures.

The results of the pairwise comparison of means in Table 5, Panels A–D, do not reveal any significant improvement in all the measures of sustainability disclosures at 5% significance or better (presented in bold font). These results are contrary to the findings of Nwobu et al. (2017) regarding an improvement in the sustainability disclosure for Nigerian banks. The different results can be explained by the difference in scope. While this study covers multiple countries and industries, Nwobu et al.'s (2017) study focuses on banks in Nigeria. The banking industry is generally known to be a highly regulated industry with stringent disclosure requirements. The results however partly align with the findings of Nwaigwe et al. (2022) of a lack of association between the extent of sustainability disclosure and firm value.

Table 5. Pairwise comparison

	Contrast	*Std. Err.*	*Bonferroni*		*Bonferroni [95% conf. interval]*	
			t	*P > t*	*Lower bound*	*Higher bound*
Panel A: Pairwise comparison for DISC (total sustainability disclosure)						
2014 vs 2013	-0.341	0.174	-1.960	**0.565**	-0.855	0.173
2015 vs 2013	-0.390	0.169	-2.310	**0.253**	-0.886	0.107
2016 vs 2013	-0.427	0.169	-2.520	**0.151**	-0.925	0.072
2017 vs 2013	-0.560	0.227	-2.470	**0.172**	-1.229	0.108
2015 vs 2014	-0.049	0.086	-0.560	**1.000**	-0.302	0.205
2016 vs 2014	-0.085	0.087	-0.980	**1.000**	-0.341	0.170
2017 vs 2014	-0.219	0.174	-1.260	**1.000**	-0.733	0.294
2016 vs 2015	-0.037	0.075	-0.490	**1.000**	-0.257	0.183
2017 vs 2015	-0.171	0.169	-1.010	**1.000**	-0.668	0.326
2017 vs 2016	-0.134	0.169	-0.790	**1.000**	-0.632	0.364
Panel B: Pairwise comparison for ECDISC (economic sustainability disclosure)						
2014 vs 2013	-0.399	0.191	-2.090	**0.424**	-0.962	0.164
2015 vs 2013	-0.412	0.185	-2.230	**0.306**	-0.957	0.132
2016 vs 2013	-0.444	0.185	-2.400	**0.206**	-0.991	0.102
2017 vs 2013	-0.556	0.249	-2.230	**0.303**	-1.289	0.177
2015 vs 2014	-0.013	0.094	-0.140	**1.000**	-0.291	0.264
2016 vs 2014	-0.045	0.095	-0.480	**1.000**	-0.326	0.235
2017 vs 2014	-0.157	0.191	-0.820	**1.000**	-0.720	0.407
2016 vs 2015	-0.032	0.082	-0.390	**1.000**	-0.273	0.209
2017 vs 2015	-0.143	0.185	-0.770	**1.000**	-0.688	0.401
2017 vs 2016	-0.111	0.185	-0.600	**1.000**	-0.657	0.435
Panel C: Pairwise comparison for ENDISC (environmental sustainability disclosure)						
2014 vs 2013	-0.361	0.202	-1.790	**0.797**	-0.955	0.233
2015 vs 2013	-0.440	0.195	-2.260	**0.288**	-1.014	0.135
2016 vs 2013	-0.443	0.195	-2.270	**0.281**	-1.018	0.133
2017 vs 2013	-0.574	0.262	-2.190	**0.337**	-1.346	0.199
2015 vs 2014	-0.079	0.099	-0.790	**1.000**	-0.371	0.214
2016 vs 2014	-0.082	0.100	-0.820	**1.000**	-0.377	0.214
2017 vs 2014	-0.213	0.202	-1.050	**1.000**	-0.806	0.381
2016 vs 2015	-0.003	0.086	-0.040	**1.000**	-0.257	0.251
2017 vs 2015	-0.134	0.195	-0.690	**1.000**	-0.708	0.440
2017 vs 2016	-0.131	0.195	-0.670	**1.000**	-0.706	0.445
Panel D: Pairwise comparison for SODISC (social sustainability disclosure)						
2014 vs 2013	-0.263	0.178	-1.480	**1.000**	-0.787	0.261
2015 vs 2013	-0.317	0.172	-1.840	**0.719**	-0.823	0.190
2016 vs 2013	-0.392	0.172	-2.280	**0.274**	-0.900	0.115
2017 vs 2013	-0.552	0.231	-2.390	**0.211**	-1.233	0.129
2015 vs 2014	-0.054	0.088	-0.610	**1.000**	-0.312	0.205
2016 vs 2014	-0.129	0.089	-1.460	**1.000**	-0.390	0.132
2017 vs 2014	-0.289	0.178	-1.620	**1.000**	-0.813	0.235
2016 vs 2015	-0.075	0.076	-0.990	**1.000**	-0.300	0.149
2017 vs 2015	-0.235	0.172	-1.370	**1.000**	-0.742	0.271
2017 vs 2016	-0.160	0.172	-1.930	**1.000**	-0.668	0.348

The regression results used to examine *H2* are presented in Tables 6 and 7. Recall that the hypothesis predicts no relationship between sustainability disclosure and financial performance. The results in Table 6 reveal a positive relationship between three of the four measures of sustainability disclosure (*DISC*, *ENDISC*, and *SODISC*) and financial performance measured as *ROA*. This result suggests that on average firms with high financial performance disclose more than those with low financial performance. These results are also in line with the prediction of disclosure theory that firms voluntarily disclose as a signal of their superior performance (Verrecchia, 1983). The results also align with previous studies that have observed a positive relationship between sustainability reporting and firm performance (Aifuwa, 2020; Farisyi et al., 2022).

GLSUS, the proxy for country sustainability performance shows a negative association with all the sustainability disclosure measures implying that the firms in the study are from countries with weak sustainability performance. The results also reveal a negative association between all the measures of sustainability disclosures and *ASS*, the proxy for firms with assured sustainability reports, implying that firms with assured sustainability reports disclose less. *SIZE*, the proxy for firm size, shows a significant positive association with all the sustainability disclosure measures, suggesting that large firms voluntarily disclose sustainability initiatives.

Table 6. Regression results for return on assets

Variables	*DISC*	*ECDISC*	*ENDISC*	*SODISC*
ROA	**0.005*** **	**0.002**	**0.008*** **	**0.005*** **
	(3.813)	**(1.301)**	**(5.375)**	**(3.714)**
GLSUS	-0.361***	-0.391***	-0.305***	-0.386***
	(-3.843)	(-3.652)	(-2.803)	(-4.135)
ASS	-0.190**	-0.171*	-0.167*	-0.233***
	(-2.372)	(-1.905)	(-1.699)	(-3.219)
SIZE	0.012**	0.011*	0.009*	0.014**
	(2.270)	(1.873)	(1.681)	(2.465)
Constant	0.597***	0.704***	0.604**	0.482*
	(2.894)	(5.200)	(2.668)	(1.802)
Observations	52	52	52	52
R-squared	0.381	0.330	0.269	0.438
Year FE	Yes	Yes	Yes	Yes
r2_a	0.265	0.205	0.133	0.333

*Note: Robust t-statistics in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.*
Table 6 presents the results for H2, where DISC is total sustainability disclosure, ECDISC is economic disclosure, ENDISC is environmental disclosure, and SODISC is social disclosure. GLSUS is a dummy variable that takes the value of 1 for countries with high sustainability performance, ASS is a dummy that takes the value of 1 for firms with an assured sustainability report, and SIZE is the natural log of total assets.

The results in Table 7 are similar to the findings presented in Table 6. Table 7 results show a positive association between *ROE* and the three measures of sustainability disclosure (*DISC*, *ENDISC*, and *SODISC*). The results for the control variables in Table 7 are also similar to those obtained in Table 6 when the financial performance measure was *ROA*.

Table 7. Regression results for return on equity

Variables	*DISC*	*ECDISC*	*ENDISC*	*SODISC*
ROE	**0.003*** **	**0.001**	**0.004*** **	**0.003*** **
	(3.275)	**(1.045)**	**(4.483)**	**(3.425)**
GLSUS	-0.362***	-0.391***	-0.306***	-0.387***
	(-3.838)	(-3.649)	(-2.800)	(-4.134)
ASS	-0.190**	-0.170*	-0.166*	-0.233***
	(-2.365)	(-1.898)	(-1.692)	(-3.210)
SIZE	0.012**	0.011*	0.009	0.014**
	(2.268)	(1.873)	(1.674)	(2.463)
Constant	0.597***	0.704***	0.604**	0.481*
	(2.896)	(5.204)	(2.670)	(1.803)
Observations	52	52	52	52
R-squared	0.379	0.329	0.265	0.437
Year FE	Yes	Yes	Yes	Yes
r2_a	0.263	0.204	0.128	0.332

*Note: Robust t-statistics in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.*
Table 7 presents the results for H2, where DISC is total sustainability disclosure, ECDISC is economic disclosure, ENDISC is environmental disclosure, and SODISC is social disclosure. GLSUS is a dummy variable that takes the value of 1 for countries with high sustainability performance, ASS is a dummy that takes the value of 1 for firms with an assured sustainability report, and SIZE is the natural log of total assets.

Overall, the findings in this study bring to light the need for increased focus on sustainability reporting in developing countries for three reasons. First, developing countries benefit more from social sustainability initiatives and their reporting is influenced more by external forces such as the World Bank (Ali et al., 2017). Improved sustainability reporting will therefore aid such organizations to identify areas that may require further interventions. Second, improved sustainability reporting of environmental aspects specifically, can serve as a motivation for firms to be more conscious of the impact of their operations on the environment and thus seek ways to improve

their operational processes in order to reduce their environmental footprint. Third, improved sustainability reporting will benefit policymakers in developing countries as they seek to implement macroeconomic policies that can generally improve the welfare of the citizens.

5. CONCLUSION

Considering the reported benefits of sustainability reporting (Farisyi et al., 2022; Girón et al., 2021), the increased adoption of sustainability reporting worldwide (Al Hawaj & Buallay, 2022), and the importance of sustainability initiatives in developing economies (Ali et al., 2017), it is surprising that not many companies are voluntarily providing sustainability reports in Africa.

This study evaluates sustainability reporting in developing economies, particularly Africa, by examining the extent of sustainability disclosures and the relationship between sustainability disclosures and financial performance for firms that voluntarily report sustainability initiatives based on the GRI G4 sector guidelines. Results of the multiple comparison of means for the overall sustainability disclosure (*DISC*), and the sub-categories of economic (*ECDISC*), environmental (*ENDISC*), and social (*SODISC*) disclosures did not show any improvement in sustainability disclosures over the period of the study from 2013–2017. The multiple regression results however show a positive relationship between sustainability disclosure and financial performance measured as return on assets (*ROA*) and return on equity (*ROE*). This is in line with the prediction of the voluntary disclosure literature that firms may voluntarily disclose as a signal of superior financial performance (Verrecchia, 1983). This positive relationship also aligns with the findings from prior literature (Aifuwa, 2020; Farisyi et al., 2022) but is contrary to other literature that has observed either a mixed association (Al Hawaj & Buallay, 2022; Johari & Komathy, 2019) or no association (Goel & Misra, 2017; Nwaigwe et al., 2022). Lastly, the results show that disclosing firms do not generally have their sustainability reports assured and are from countries with poor sustainability performance.

This paper makes a number of contributions to the existing literature. It provides evidence of the lack of improvement in sustainability reporting in Africa. Thus, emphasizing the need for reporting companies to improve in these developing economies. Such improvement will serve as an encouragement to other companies to embrace more sustainability initiatives and provide more disclosures for better reporting quality. Furthermore, by examining the association between sustainability disclosures and firm performance, this study provides further evidence in support of extant studies that have observed similar results in other settings. Additionally, focusing on developing economies serves as a response to the call of Lu and Taylor (2016) for research on non-US settings and the call of Aifuwa (2020) for research on more sectors of the economy. Outside academia, findings from this study are useful to the GRI organization in making improvements to the reporting guidelines, particularly as to how the improvements touch African countries. The findings can also inform stakeholders and management on the sustainability initiatives of other firms, consequently, creating more awareness of the triple bottom line reporting in less developed countries.

There are some noteworthy limitations to this study. First, the study sample is small due to the focus on only the GRI G4 Guidelines; the findings may therefore not be representative of all African companies. Second, some firms may have disclosed sustainability reports using other guidelines that are not directly linked to the GRI G4 Guidelines, these are not included in this study. Finally, the use of manual content analysis for measuring sustainability disclosures involves subjectivity.

A fruitful avenue for future studies would be to use other sustainability databases or standalone sustainability reports to increase the sample size and consider the use of automated content analysis for improved accuracy. Future studies can also compare sustainability reporting for firms in developing versus developed countries to identify how developing economies can benefit from better quality disclosures. Lastly, an opportunity for future research would be to compare disclosure for firms operating under mandatory versus voluntary reporting regimes. Such studies may be able to isolate the use of voluntarily reporting sustainability initiatives.

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APPENDIX. SUMMARY OF GRI G4 ASPECTS

Categories	*Economic*	*Environmental*
Aspects	• Economic performance (4) • Market presence (2) • Indirect economic impact (2) • Procurement practices (1)	• Materials (2) • Energy (5) • Water (3) • Biodiversity (4) • Emissions (7) • Effluents and waste (5) • Products and services (2) • Compliance (1) • Transport (1) • Overall (1) • Supplier environmental assessment (2) • Environmental grievance mechanisms (1)

Category	*Social*			
Sub-categories	*Labour practices and decent work*	*Human rights*	*Society*	*Product responsibility*
Aspects	• Employment (3) • Labor/Management relations (1) • Occupational health and safety (4) • Training and education (3) • Diversity and equal opportunity (1) • Equal remuneration for Women and men (1) • Supplier assessment for labor practices (2) • Labor practices grievance mechanisms (1)	• Investments (2) • Non-discrimination (1) • Freedom of association and collective bargaining (1) • Child labor (1) • Forced or compulsory Labor (1) • Security practices (1) • Indigenous rights (1) • Assessment (1) • Supplier human rights assessment (2) • Human rights grievance mechanisms (1)	• Local communities (2) • Anti-corruption (3) • Public policy (1) • Anti-competitive behavior (1) • Compliance (1) • Supplier assessment for impacts on society (2) • Grievance Mechanisms impacts on society (1)	• Customer health and safety (2) • Product and service labelling (3) • Marketing communications (2) • Customer privacy (1) • Compliance (1)

Note: The number of indicators is presented in parentheses.