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| RESEARCH ARTICLE

Sustainable Development Goals Disclosure among Top 25 Listed Companies in Kenya

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| ABSTRACT

The paper aimed to examine the extent of Sustainable Development Goals disclosure by the top 25 listed companies in Kenya (NSE25) based on the global sustainability reporting indicators by UNCTAD's Guidance on Core Indicators (GCI) framework. Based on UNCTAD's Guidance on core indicators for entity reporting on contribution to SDG implementation (GCI) framework, the paper evaluated the extent of SDG disclosure by the top twenty-five (NSE25) listed companies in Kenya in four broad areas of sustainability, namely economic (8 indicators), environmental (11 indicators), social (7 indicators), and the institutional regions (7 indicators). The 2019/2020 annual, integrated and sustainability reports of 25 major firms listed on the Nairobi Securities Exchange were analysed and coded using a content analysis technique. The findings provided strong evidence that NSE 25 corporations are committed to sustainable development agenda based on the extent of the disclosure of corporate activities related to the UN SDGs, with an overall GCI score of 0.77. The economic area had the highest total GCI score at 0.94; the institutional area had the second-highest GCI score of 0.82. The social area' with a GCI Index of 0.72, was placed third, and the environmental area at 0.65. Enterprises are critical to achieving the SDGs. Hence SDG disclosure requires extensive research to identify the factors that impact it. This research contributes to the legitimacy theory by evaluating the extent of SDG disclosure by listed firms. However, the study only focuses on how the top 25 Kenyan listed corporations reveal SGD-related information; care should be given when drawing generalisations about other companies. The outcomes of this research advocate for explicit commitment and a concerted effort for SDG implementation from African business organisations. SDGs cannot be achieved just by governments; corporations must also play a significant role. The study underlines the importance of corporates adopting sustainability initiatives and including SDG information within their business reporting cycle. The results of this study contribute to the understanding of SDG reporting in Kenya and other developing economies, as it provides policy implications for corporations, governments, policymakers and agencies in terms of regulation, awareness, and capacity development relevant to sustainability reporting. The UNCTAD GCI framework is a novel approach to sustainability disclosure research. It expands knowledge of sustainability disclosure, corporate reporting, and SDG studies in Kenya and other developing countries. To the best of our knowledge, this paper is among the first to provide in-depth empirical evidence on the status of SDG disclosure among listed firms in Kenya. Furthermore, this research provided valuable information on the role of corporations in achieving sustainable development goals in response to earlier research gaps identified.

| KEYWORDS

Corporate sustainability reporting, Sustainable Development Goals (SDGs), Content analysis, Guidance on Core Indicators (GCI), Kenya

| ARTICLE INFORMATION

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1. Introduction

The Sustainable Development Goals (SDGs), commonly referred to as the 'Global Goals', provide the blueprint for alleviating poverty, combating inequality, and mitigating climate change, among several other objectives. The 17 goals and 169 priority areas of the 2030 Agenda for Sustainable Development focus global attention on the most significant environmental, social, and economic challenges. The UN Department of Economic and Social Affairs (DESA), responsible for implementing the SDGs, asserts that government, civil society, and corporate sector initiatives are critical to achieving these goals. Besides the moral obligation, there is a compelling business case for corporate and businesses to be involved in the achievement of the SDGs and 2030 Agenda(Haywood & Boihang, 2021; Heras-Saizarbitoria, Urbieta & Boiral, 2021; Rosati & Faria, 2019; Verles & Vellacott, 2018)

The COVID-19 pandemic has had substantial economic and social consequences, highlighting the interconnection of vulnerabilities among all 17 SDGs, necessitating greater transformational and bolder commitments to the new global solutions for sustainable development. Companies urgently need to tackle the escalating problems in an increasingly uncertain, pandemic-affected global economy. Several nations have seen significant increases in the number of corporates reporting on sustainability in recent years, influenced by legislative and regulatory changes and the growing appreciation of the influence of environmental, social, and governance (ESG) issues on corporate performance and value. Corporations are being evaluated more than ever for their activities and consequences on society and environmental demands. Companies could enhance their position to react better to future challenges while also taking advantage of emerging possibilities if they put sustainable development at the centre of their recovery strategies. As a result, corporate accountability and transparency in SDG disclosure remain crucial for both the 2030 Agenda and addressing stakeholder requirements and organisational sustainability(Azzam, AlQudah, Abu Haija, & Shakhatreh, 2020; Liu, Samsami, Meshreki, Pereira, & Schøtt, 2021; Lodhia, Sharma, & Low, 2021; Tampakoudis, Noulas, Kiosses, & Drogalas, 2021).

The Global Reporting Initiative (GRI) is a commonly used and acknowledged sustainability benchmark focusing on developing a conceptual framework for corporations to create sustainability reports. Thus GRI advocates for the institutionalisation of sustainability reporting. The GRI conceptual framework is built with multi-stakeholder input, making it suitable for a broad audience (KPMG, 2020). Consequently, several of the world's top firms are involved in accountability initiatives. The IFRS Foundation Consultation Paper on Sustainability Reporting and related discussions on non-financial reporting convergence have raised concerns about GRI's future role and scope. The accounting profession is reacting to a rising need for corporate entities to report non-financial information in addition to conventional financial statements(Bebbington & Unerman, 2018). For example, the International Sustainability Standards Board was established in 2021, and the International Integrated Reporting Council and the Sustainability Accounting Standards Board amalgamated to become the Value Reporting Foundation.

Further, UNCTAD has been striving to enhance SDG and sustainability disclosure by businesses by increasing its consistency and comparability. UNCTAD has created and published the GCI to accomplish this goal. Its purpose is to help businesses collect data on specific universal and core SDG baseline indicators across economic, environmental, social, and institutional dimensions of corporate operations (Appendix 1). Additionally, the GCI intends to help governments in developing policies and institutional mechanisms for capturing such data from companies' reports designed to enable them to consistently and comparably represent the private sector's commitment to SDG implementation and to report on SDG 12.6.1 "Number of companies publishing sustainability reports."(Abdel-Meguid, Dahawy, & Shehata, 2021; UNCTAD, 2019).

The Nairobi Securities Exchange (NSE) recently published ESG sustainability reporting guidelines. Its goal is to make publicly traded companies increasingly aware of the significance and advantages of publishing sustainability reports. As a result of these advantages, companies can improve their public image and build customer loyalty while stakeholders better understand the underlying value of their investments. The NSE's strategy for sustainability reporting is organised around three major themes: environmental, social, and governance(NSE, 2021). Although there is considerable literature on SDGs and sustainable reporting in developed countries, many research concerns remain unanswered in developing countries(Ching & Gerab, 2017; Wasara & Ganda, 2019). According to the Business for 2030 initiative, the "scale and ambition of the 2030 Development Agenda create an enormous opportunity for the private industry to show the critical role it plays in sustainable development and human prosperity, as well as to serve as a critical partner in bridging the gap in finance and technical capacity required to meet the challenge of achieving the SDGs."(Verles & Vellacott, 2018).

Due to inconsistent findings and a dearth of empirical research on the extent of SDGs disclosure in developing nations(Haywood & Boihang, 2021; Liu et al., 2021; Mion & Adaui, 2020; Wasara & Ganda, 2019), this research sought to examine the extent of SDGs disclosure by Kenya's top 25 publicly traded firms on the Nairobi Securities Exchange (NSE) through content analysis assessment of the annual reports. With this in mind, and in light of the theoretical and empirical arguments available in the academic literature, the following main research question was proposed:

RQ1: What is the extent of SDGs disclosure by the top 25 listed companies in Kenya (NSE25) based on the UNCTAD's Guidance on Core Indicators (GCI) framework?

These findings will complement the developing corpus of knowledge, provide empirical evidence on sustainability reporting, and assist top management in legitimising sustainability-related decisions and providing stakeholders with the benefits of sustainability practices. Further, the study expands the scope and applicability of legitimacy theory in the SDG reporting context.

The remainder of this paper is organised as follows: section two presents the literature review, section three the research methodology, section four provides the result and discussion, section five provides the conclusion, and section six presents the limitations and further research.

2. Literature review

Several theoretical views have primarily informed the empirical study on sustainability reporting in business, the legitimacy theory, voluntary disclosure theory and the stakeholder theory(Ching & Gerab, 2017; Mion & Adaui, 2020).

This study uses the legitimation perspective to analyze SDG disclosure practices by Kenya's top 25 listed companies. The legitimacy theory underscores the relevance of disclosure and asserts that organisations must always strive to function within their own society' norms and standards. These boundaries and standards are not static but vary throughout time, necessitating the organisation's responsiveness. The firm and the people impacted by its operations have a social contract.

According to the legitimacy viewpoint, normative, mimetic, and coercive influences (i.e., pressures imposed by legal requirements, group behaviour, and interested parties) may compel corporate entities to adhere to best practices to satisfy the requirements of the broader community and validate their activities by adopting to environmentally sustainable operations, along with more increased transparency and disclosure. The organisation must adhere to the contract's provisions, which are not static. As a result, corporations will be penalised for failing to operate per community standards, a position that corporate management has openly accepted(DiMaggio & Powell, 2000; Suchman, 1995). As society continues to evolve, primarily via improved information and social consciousness, there is an increasing community and societal expectation that firms will contribute to improving quality of life, environmental stewardship, and broader societal well-being. Thus, the organisation achieves necessary public approval by adhering to moral legitimacy and humanistic values(Ching & Gerab, 2017; Islam, Jain, & Thomson, 2016). Applying the UNCTAD GCI rules demonstrates the importance of subscribing to ethical behaviour and upholding high standards of public accountability. The argument is that if companies strive to meet the SDGs objectives, they will implement disclosure standards consistent with the UNCTAD GCI and its sustainability criteria. Keeping with moral legitimacy, it is anticipated that the companies will respond to the GCI by enhancing their degree of integrated reporting. The GCI reporting guidelines will likely impact firms' sustainability disclosure practices(Abdel-Meguid et al., 2021; Guix, Bonilla-Priego, & Font, 2018).

Therefore, given that previous studies(Erin, Bamigboye, & Oyewo, 2022; Heras-Saizarbitoria et al., 2021; Rehman et al., 2020) have used legitimacy theory to examine the extent of sustainability and SDG disclosure, this study uses the legitimation perspective to explain the extent of SDGs disclosure by the top 25 listed companies in Kenya (NSE25) based on the UNCTAD's Guidance on Core Indicators (GCI) framework.

In comparison to the significant research on financial and non-financial disclosure, limited research on the integration of the SDGs into enterprises' disclosure has been conducted owing to the novelty of SDG disclosure(Haywood & Boihang, 2021; Hummel & Szekely, 2021; Rosati & Faria, 2019).

Subramaniam, Junior, Akbar, & Ji (2020) examined the extent of SDG measurement and disclosure by the top 150 Australian publicly-listed companies (ASX150). A content analysis of business sustainability reports for the fiscal year ending in 2019 was conducted. The analysis sought to identify patterns in SDG measurement and reporting around three broad themes: awareness and commitment to the SDGs, coherence in the integration of the SDGs into the company's strategic materiality analysis, and measurement of the SDGs within their corporate activities and performance. The results showed that 48% of companies mentioned SDGs in their annual reports, 45% formally prioritised SDGs, 43% of the companies embedded SDGs in materiality analysis, and 35% provided historical performance data on SDGs, indicating the firms’ increasing trend in SDG disclosure.

Calvin & Street (2020) examined the degree to which US Dow 30 firms report Global Core Indicators (GCIs). The study found that the Dow 30 is typically compliant in providing GCIs that fit US capital market reporting norms, high profile current events, and financially essential concerns. Further, Dow 30 firms are more likely to reveal institutional and economic difficulties than environmental and social ones, and diversity was observed in disclosure across sectors in which Dow 30 operates.

Abdel-Meguid et al. (2021) investigated the degree to which the top 30 Egyptian firms disclosed their Sustainable Development Goals (SDG) using the United Nations Conference on Trade and Development's (UNCTAD) 33 fundamental indicators, which included economic, institutional, social, and environmental domains. The findings reveal that SDG is still gaining popularity in Egypt, as seen by a low average disclosure score of just 25%, equating to around eight indications. The results also found a difference in SDG across the four areas, with economic and institutional indicators receiving more attention than social and environmental indicators.

Hummel & Szekely (2021) examined how corporations' annual reports provide information about the Sustainable Development Goals (SDGs) by employing textual and content analysis to examine both enterprises' explicit mention of the SDGs in their annual reports and the implicit prevalence of SDG subjects for a sample of European firms included in the STOXX Europe-600 index during a four-year reporting period. The findings demonstrated a significant improvement in SDG reporting quality over time but an apparent absence of quantitative and forward-looking information disclosure.

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Haywood & Boihang (2021) evaluated the extent to which South Africa's top 100 listed companies had committed to the SDGs, as evidenced by an assessment of their earlier disclosure of the SDGs in annual reports using content analysis. The results indicated that only 6% and 11% of businesses in the 2016/2017 and 2017/2018 fiscal years ended had integrated the SDGs into their business models and plans, respectively. While there has been growth in recent years, just 2% of firms expressly explained in their 2017 Integrated Report how they integrated and prioritised the SDGs into their business strategy and value-generating offer.

Heras-Saizarbitoria et al. (2021) examined the organisation's engagement in the United Nations Sustainable Development Goals (SDGs) of 1370 organisations from 97 countries based on an in-depth qualitative analysis of their sustainability reports. The findings suggested that most organisations were superficially engaged with the SDGs, implying a process of "SDG-washing."

Using content analysis and survey methods, Erin, Bamigboye, & Oyewo (2022) examined SDG reporting of the top fifty (50) listed companies in Nigeria from 2016 to 2018. The findings showed that corporate organizations were doing little to contribute to sustainable development goals performance in Nigeria.

In summation, empirical literature analysis demonstrates that a few existing studies into organisations' SDG disclosure practices are often limited to a particular country(Abdel-Meguid et al., 2021) and apply binary SDG disclosure metrics(Abdel-Meguid et al., 2021; Rosati & Faria, 2019).

Given these notable gaps in previous research, this study examined the extent of SDGs disclosure by the top 25 listed companies in Kenya (NSE25) based on the UNCTAD’s Guidance on Core Indicators (GCI) framework.

3. Research methodology

The sample companies used in the survey were taken from the 25 largest companies listed on the Nairobi Securities Exchange (NSE) in the fiscal year 2019/2020. Individual companies were selected based on weighted market performance during the reporting period, using the following criteria: shares must be listed primarily on the NSE; at least 20% of the shares must be listed on NSE.; must have been continuously listed for at least one year; the minimum market capitalisation should be KES.1 billion, be a "blue chip" with superior profitability and dividend record. The sample is presented in Table I.

Table 1: NSE 25 Industrial Classification

Sector	Number of companies
Banking	9
Commercial and Services	2
Construction and Allied	1
Energy and Petroleum	3
Insurance	5
Investment	1
Investment Services	1
Manufacturing and Allied	2
Telecommunication	1
Total	**25**

The top 25 NSE-listed firms' annual, integrated, and sustainability reports for the 2019/2020 fiscal year were retrieved from their respective websites. Content analysis was applied for assessing SDG disclosure in companies' annual and sustainability reports, with the *Guidance on core indicators for entity reporting on contribution to SDG implementation (GCI*) issued by UNCTAD's

Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting as a benchmark (ISAR). The GCI includes 33 SDG indicators in economic (8 indicators), environmental (11 indicators), social (7 indicators), and institutional areas (7 indicators). The environmental indicators were categorised into five subcategories, the economic and social areas into four subcategories, and the institutional area is divided into two subcategories(Abdel-Meguid, Dahawy, & Shehata, 2021; UNCTAD, 2019). According to some researchers, since the research material such as annual reports is publicly accessible, content analysis mitigates the limitations of questionnaires and interviews(Larrán Jorge, Andrades Peña, & Herrera Madueño, 2019), and it is a faster and cheaper method to collect data.

The approach used for this study was content analysis since it has previously been deemed a suitable technique for classifying organizations in terms of their contribution to SDGs(Erin et al., 2022; Hummel & Szekely, 2021). Content analysis is a method for putting a large amount of text and words into predefined content categories based on coding rules(Giannantonio, 2010). Disclosure items were recorded only once per company, regardless of the source. This provided 825 sets of observations (measured as 25 firms multiplied by 33 area indicators). The maximum sustainability score possible for any firm is 33. This could be achieved if the company reported a positive score for each disclosure item in the index. Content analysis (Giannantonio, 2010)distinguishes three forms of reliability: stability, reproducibility, and accuracy.

Stability is a term that relates to a coder's capacity to encode data consistently over time. The test-retest approach is used to determine stability. For instance, an annual report examined by a coder may be reanalysed after two weeks by the same encoder. The content analysis is perfectly stable if the coding is consistent across sessions. The objective of reproducibility is to ensure that the same level of coding is measured when different coders are engaged (Weber, 1988). This reliability assessment, referred to as inter-rater reliability, entails comparing the rate of coding errors committed by several coders. The term "reliability accuracy" refers to comparing coding performance to specific criteria defined by an expert panel or established via previous tests and investigations. This paper applied the reproducibility and accuracy tests of reliability. Firstly, two different research assistants performed the coding process to mitigate the potentially distorting effects of subjectivity. At the same time, a third researcher checked the coded data to adjust for the resolution of discrepancies resulting from interpretation deviations regarding the assignment of elements to coding frames. Research assistants with experience in content analysis and coding processes were employed to collect data and evaluate companies using the disclosure index. In addition, the study used content analysis to manually assess the quality of firms' disclosure of the SDGs based on thirty-three reporting items.

Second, to avoid significant limitations associated with selecting the coding framework to measure the extent of sustainability information reported, we used the GCI guidelines, primarily because UNCTAD's Guidance on core SDG indicators for companies reporting has been developed based on elaborations on SDG reporting. The key SDG indicators consider economic, environmental, social, and institutional factors. They were determined based on critical reporting concepts, selection criteria, major reporting frameworks, and reporting practices of corporations. The GCI is a starting point that capitalizes on the commonality of the ESG reporting sector. The Guidance offers practical information on how the key indicators may be monitored consistently and by nations' requirements for monitoring the SDG Agenda's implementation. (UNCTAD, 2019). Second, the GCI tools are valuable for standardizing the many indicators used to report on SDGs(Abdel-Meguid et al., 2021; Liu et al., 2021). Hence, accuracy was ensured by identifying 33 specific SDG disclosures with clearly specified definitions in each category that provided meaningful disclosure content.

Each of the four focus areas of the SDGs, sector, companies, and the overall NSE 25 index were reported results. These indexical values were determined by computing the proportion of indicators in each category found in either annual, integrated, or sustainability reports concerning the total area (Table 1). Results also highlight the most and least disclosed items/focus areas.

Table 2: Disclosure indexes according to the GCI categories

Indexes	Descriptions	Measures
Indicator disclosure Index (IDX)	The IDX was calculated as the ratio of NSE 25 companies' SDG Disclosures related to the indicator *I* in area *A*	$IDX_A = \frac{No.of\ companies\ with\ indicator\ i\ related\ to\ disclosure}{25}$
Area disclosure Index (ADX)	The ADX is an average score of the IDXs of all *I* indicators of area *A*	$SDX_S = \frac{\sum_{i=1}^{I} IDX_{Ai}}{I}$
Company disclosure Index (CDX)	The CDX is the ratio of all the indicators disclosed by company *j*	$CDX_j = \frac{Total\ number\ of\ indicators\ reported\ by\ Firm\ j}{33}$

Sector disclosure Index(SDX)	The SDX is the average CDX of all *J* companies belonging to sector S	$SDX_S = \frac{\sum_{j=1}^{J} CDX_j}{J_s}$
NSE 25 disclosure Index(NSE25DX)	NSE25DX is the average CDX of all 25 companies on the index	$NSE25DX = \frac{\sum_{j=1}^{25} CDX_j}{25}$

4. Results and Discussions

This section discusses the extent to which the NSE 25 companies publicly disclose the core indicators in their annual, integrated or sustainability reports.

4.1 Indicator-level disclosure

4.1.1 Economic Area

Table 3 presents the Economic Area SDG reporting disclosure using the GCI framework with eight indicators. The result showed that the aggregate GCI index for the Economic area was 0.935**.** Revenue (A.1.1), value added (A.1.2), Net value-added (A.1.3); Taxes and other payments to the Government (A.2.1); Green investment (A.3.1); Community investment (A.3.2) were disclosed by all NSE 25 companies, with a GCI index of 1. These findings corroborate previous studies in the corporate sustainability literature(Abdel-Meguid et al., 2021; Hummel & Szekely, 2021), which found that organisations showed higher performance in reporting their economic sustainability management issues and their performance indicators and SDG8(decent work and economic growth) was highly prioritised among the sample companies as revenue disclosure is a mandatory statement under the Companies Act 2015 and IFRS.

Research & Development (A.3.3) was stated as an absolute sum by fifteen NSE companies. Research and development expenditures are voluntary for publicly traded firms in Kenya; consequently, the absence of this declaration for any company in our sample means that either none or a negligible amount of these costs exist. Eighteen NSE 25 businesses provided a measure of local procurement (A.4.1) expressed as a proportion of total procurement expenditure. The costs of local procurement serve as a broad indicator of the extent to which an entity's ties to the local economy are strengthened.

Table 3: Disclosure of Core SDG Indicators by the NSE 25(Economic Area)

Area	Indicators	No. of companies disclosing this item	IDX
	A. Economic area		
A.1. Revenue and/or (net) value-added	A.1.1. Revenue	25	1.00
	A.1.2. Value-added	25	1.00
	A.1.3. Net Value-added	25	1.00
A.2. Payments to the Government	A.2.1. Taxes and other payments to the Government	25	1.00
A.3.New investment/ expenditures	A.3.1 Green investment	25	1.00
	A.3.2. Community investment	25	1.00
	A.3.3. Total expenditures on research and development	19	0.76
A.4. Local supplier/purchasing programmes	A.4.1.Percentage of local procurement	18	0.72

4.1.2 Environmental Area

The GCI index for the Environmental area was 0.6509, as shown in Table 4. Sixteen of the NSE 25 companies reported a measure of Water Recycling/Reuse (B.1.1) as an absolute amount concerning water sustainability usage. As a result, the indicator is expressed in cubic metres (m^3) and percentage terms (%). This means that 64 per cent of NSE 25 companies report issues related to SDG indicator 6.3.1, which measures the proportion of wastewater that is safely treated. The results contrast with those (Khan, Islam, Fatima, & Ahmed, 2011), which showed that none of the 12 companies sampled reported on the total water volume of water recycled and reused (EN8-EN10). The percentage of water recycling and reuse is a measure of efficiency that indicates an organisation's achievement in lowering overall water draws and outflows. Enhanced recycling and reuse could result in cost savings associated with water use, treatment, and disposal. Water consumption reductions across time via reuse or recycling could also aid in fulfilling municipality, national, or regional water supply management objectives.

Water Use Efficiency metric (B.1.2) indicator revealed that 17 of the NSE 25 provide information on their activities related to water usage per net value added in the reporting period. This indicates that 68 per cent of the NSE 25 firms report concerns linked to SDG indicator 6.4.1, which tracks the value of US dollars per cubic meter of water withdrawn by a given economic activity over time. The change in water use per net value contributed between the two reporting periods.

According to the Water Stress (B.1.3) indicator, 15 of the NSE 25 firms specified the total amount of water withdrawn as the sum of all water drawn into the organisation's boundaries from all sources for any purpose during the reporting period. This means that 60% of the NSE 25 firms report SDG 6.4.2 issues by tracking the amount of freshwater withdrawn by all economic activities about the total renewable freshwater resources available. This finding contrast with (Abdel-Meguid et al., 2021), who indicated that none of the top 30 actively traded companies in the Egyptian Exchange (EGX), that is, the EGX30 index companies reported on water stress issues.

In terms of Waste Management (B.2), sixteen of the NSE 25 reported on Reduction of Waste Generation (B.2.1) in absolute or percentage terms; seventeen reported on waste reused, remanufactured, and recycled (B.2.2); and fifteen reported on Total Hazardous Waste (B.2.3). This indicator is essential to SDG goal 12.5, which significantly decreases waste creation by 2030 via the prevention, reduction, recycling, and reuse.

All nations work within their unique capacity. The indicators of Greenhouse Gas Emissions (GHG) showed that 15 firms reported both the absolute quantity and the percentage change in Scope 1 (B.3.1) and Scope 2 (B.3.2) emissions. This measure is related to SDG 9.4.1, CO_2 emissions per unit of new value-added. This finding collaborates (Abbott, 2020; Hoştut & Deren van het Hof, 2020; Parvez, Hazelton, & James, 2019) governments and corporates have a responsibility to measure, disclose and mitigate GHG emissions to meet the expectations of stakeholders. By 2030, governments are expected to modernise infrastructure and retool industries to make them more sustainable via increased resource efficiency and greater use of clean and environmentally friendly technologies and industrial processes(Abbott, 2020; Hoştut & Deren van het Hof, 2020; Parvez, Hazelton, & James, 2019).

Fifteen firms disclosed the suggested measure for ozone-depleting substances and chemicals (B.4.1). This indicates that 60% of the NSE 25 are reporting concerns related to SDG indicator 12.4.2 on hazardous waste created per capita and the percentage of hazardous waste treated by kind of treatment.

Regarding Energy Consumption, nineteen of the NSE 25 companies declared their Renewable Energy Consumption (B.5.1) proportion to total energy usage and their Energy Efficiency (B.5.2). This means that 76% of the NSE 25 report issues linked to SDGs 7.2.1 and 7.

Table 4: Disclosure of Core SDG Indicators by the NSE 25(Environmental Area)

Area	**Indicators**	**No. of companies disclosing this item**	**IDX**
	B. Environmental area		
B.1. Sustainable use of water	B.1.1. Water recycling and reuse	16	0.64
	B.1.2. Water use efficiency	17	0.68
	B.1.3. Water stress	15	0.6
B.2. Waste management	B.2.1. Reduction of waste generation	16	0.64
	B.2.2.Waste reused, remanufactured and recycled	17	0.68
	B.2.3. Hazardous waste	15	0.6
B.3. Greenhouse gas emissions	B.3.1. Greenhouse gas emissions (scope 1)	15	0.6
	B.3.2. Greenhouse gas emissions (scopes 2)	15	0.6
B.4. Ozone-depleting substances and chemicals	B.4.1.Ozone-depleting substances and chemicals	15	0.6
B.5. Energy consumption	B.5.1.Renewable energy	19	0.76
	B.5.2.Energy efficiency	19	0.76

4.1.3 Social Area

Gender equality was reported by 24 companies that disclosed the proportion of women in managerial positions (C.1). To realise the advantages of gender parity, the Nairobi Securities Exchange (NSE) aims to have more women occupy at least one-third of senior positions in publicly traded firms. This indicates that 96% of the NSE 25 corporations report SDG 5.5.2 concerns.

In the case of Human Capital, seventeen firms reported the Average Annual Hours of Training per Employee (C.2.1), nineteen disclosed the Annual Expenditure on Employee Training per Employee (C.2.2), and twenty-four specified Employee Wages and Benefits as a Proportion of Revenue (C.2.3) by employment type or gender.

Concerning employee health and safety, twenty-four of the NSE 25 enterprises revealed Employee Health and Safety Expenditures as a Proportion of Revenue (C.3.1). At the same time, ten firms disclosed the Frequency/Incident Rates of occupational injuries (C.3.2). Women occupy at least one-third of senior positions This result collaborates finding by (Azzam et al., 2020) some disclosure indicators, "Injury Rate" and "Fair Labour Practices" were reported at a minimal level. Eight of the NSE 25 companies provided information on the percentage of employees covered by collective bargaining agreements (C.4.1). This indicates that 32% of the NSE 25 report concerns related to SDG 8.8.2, on national compliance of labour laws based on ILO policies and national legislation, by gender and migrant status.

Table 5: Disclosure of Core SDG Indicators by the NSE 25 (Social Area)

Area	Indicators	No. of companies disclosing this item	IDX
	C. Social area		
C.1. Gender equality	C.1.1.The proportion of women in managerial positions	24	0.96
C.2. Human capital	C.2.1.Average hours of training per year per employee	17	0.68
	C.2.2.Expenditure on employee training per year per employee	19	0.76
	C.2.3. Employee wages and benefits as a proportion of revenue, with breakdown by employment type and gender	24	0.96
C.3. Employee health and safety	C.3.1.Expenditures on employee health and safety as a proportion of revenue	24	0.96
	C.3.2.Frequency/incident rates of occupational injuries	10	0.4
C.4. Coverage by collective agreements	C.4.1.Percentage of employees covered by collective agreements	8	0.32

4.1.4 Institutional Area

The Institutional Area's SDG reporting is summarised in Table 6, utilising the GCI framework and seven indicators. Corporate governance disclosures were reported by 24 companies that disclosed the number of board meetings and attendance rate (D.1.1).

Twenty-four companies disclosed the number and percentage of female board members (D.1.2). This implied that 96% of the NSE 25 firms provide information relevant to SDG indicator 5.5.2, the proportion of women in managerial positions. This finding is consistent with other research in the corporate sustainability literature, which indicates that a more significant proportion of women on corporate boards may benefit from adopting new sustainability concerns and viewpoints in business(Rosati & Faria, 2019).

Board members by age range (D.1.3) indicated that 21 of the NSE 25 provided profiles of the board members by age range. A well-balanced age mix on a board is critical for making informed decisions. Previous studies(Rosati & Faria, 2019) indicate that firms with older boards of directors are less likely to meet the SDGs than younger boards. This association may be attributable to younger directors' increased awareness of environmental challenges or readiness to incorporate evolving frameworks inside the company since younger individuals are more connected to and conscious of innovation.

Twenty- Four companies disclosed the number of audit committee meetings and attendance rate (D.1.4). In comparison, 25 companies disclosed the total compensation per board member (both executive and non-executive directors (D.1.5). Consistent with prior literature(Giannarakis, 2014; Valls Martínez, Cruz Rambaud, & Parra Oller, 2019), board activity may be a key predictor of ESG disclosure since more board meetings improve the chance of exchanging more information and competencies and dedicating more attention to social and environmental concern due to improved board monitoring efficacy, resulting in better ESG disclosure levels.

Regarding D.2 Anti-Corruption Practices, only nine NSE 25 disclosed D.2.1 Fines Paid or Payable Due to Settlements. In contrast, sixteen companies disclosed the average number of hours of training on anti-corruption issues per year per employee (D.2.2).

Table 6: Disclosure of Core SDG Indicators by the NSE 25(Institutional Area)

Area	Indicators	No. of companies disclosing this item	IDX
	D. Institutional area		
D.1. Corporate governance disclosures	D.1.1.Number of board meetings and attendance rate	24	0.96
	D.1.2.Number and percentage of female board members	24	0.96
	D.1.3. Board members by age range	21	0.84
	D.1.4. Number of meetings of the audit committee and attendance rate	24	0.96
	D.1.5. Compensation: Total compensation per board member (both executive and non-executive directors	25	1.00
D.2. Anti-corruption practices	D.2.1. Amount of fines paid or payable due to settlements	9	0.36
	D.2.2. The average number of hours of training on anti-corruption issues per year per employee	16	0.64

4.2 Company-Level Disclosure

The NSE 25 companies with the highest CDX were KenGen Co. Plc (1.0), Total Kenya Ltd (1.0), and Co-operative Bank of Kenya Ltd (0.9696), as shown in Table 7. Several characteristics of these companies are noteworthy. To begin, all three corporations support global frameworks for sustainable development, including the Global Reporting Initiative (GRI), The UN Global Compact initiative, the United Nations Environment Programme Financial Initiative (UNEP FI), and the Equator Principles Finance Institutions (EPFI). Second, the companies publish independent sustainability or integrated reports. Third, the company's actions in addressing risks and capturing opportunities related to the top material ESG issues are mapped to relevant SDGs.

Conversely, the NSE 25 companies with the lowest CDX were I&M Holdings Plc (0.3333), WPP Scan Group Plc (0.3939) and CIC Insurance Group Ltd (0.4848). This finding was consistent with Suttipun & Yordudom (2021) as the companies in high profile industries with high potential for environmental impacts, such as energy and petroleum, construction and allied, and manufacturing and allied, provided a higher level of environmental disclosure in their annual reports than the firms in low profile industries.

Table 7: NSE 25 Company-level disclosure

Sector	Companies	No. of indicators disclosed	Company disclosure Index (CDX)
Banking	Absa Bank Kenya Plc	29	0.8787
	Stanbic Holdings Plc	21	0.6363
	Diamond Trust Bank Kenya Ltd	29	0.8787
	Equity Group Holdings Plc	31	0.9393
	I&M Holdings Plc	11	0.3333
	KCB Group Plc	31	0.9393
	NCBA Group Plc	17	0.5151
	Standard Chartered Bank Kenya Ltd	29	0.8787

	The Co-operative Bank of Kenya Ltd	32	0.9696
Commercial and Services	Nation Media Group Plc	20	0.6060
	WPP Scan Group Plc	13	0.3939
Construction and Allied	Bamburi Cement Ltd	31	0.9393
Energy and Petroleum	KenGen Co. Plc	33	1.0000
	Total Kenya Ltd	33	1.0000
	Kenya Power & Lighting Co Ltd	30	0.9090
Insurance	Britam Holdings Plc	23	0.6969
	CIC Insurance Group Ltd	16	0.4848
	Kenya Re-Insurance Corporation Ltd	28	0.8484
	Liberty Kenya Holdings Ltd	21	0.6363
	Jubilee Insurance	19	0.5757
Investment	Centum Investment Co Plc	28	0.8484
Investment Services	Nairobi Securities Exchange Plc	17	0.5151
Manufacturing and Allied	British American Tobacco Kenya Plc	32	0.9696
	East African Breweries Ltd	30	0.9090
Telecommunication	Safaricom Plc	31	0.9393

4.3 Sector and Area-Level disclosures

Table 8 compares the GCI index per Industrial/sectoral classification. Along with the overall GCI index for each industry. Additionally, Table 8 offers sub-indices of the GCI for the Economic, Environmental, Social, and Institutional areas. The total GCI index is higher for NSE 25 companies in the energy and petroleum (0.9696), manufacturing and allied (0.9393), construction and allied (0.9393), and telecommunication (0.9393) industries. In comparison, the total GCI indices are lower for companies in the commercial and services (0.5000), investment services (0.5151), and insurance (0.6484) industries.

The GCI index is lowest for the Environmental area (0.6509). By industry, manufacturing, and allied, telecommunication, investment, energy, and petroleum had the highest GCI Environmental index at 1.000, while investment services had the lowest at 0.0909. The GCI Environmental index was 0.6666 for banking, 0.3636 for companies in the commercial and services, 0.909 for construction and allied, and 0.3090 for Insurance. This contrasts with the earlier (World Business Council for Sustainable Development, 2018), which recognised and prioritised SDG 13 (climate action) disclosure.

The Economic area had the highest total GCI score, at 0.935. This finding was consistent with(Larrán Jorge et al., 2019), which showed a greater emphasis on disclosing economic information than the information reported about social and environmental issues. Even though the 'Economic area' had the most significant degree of disclosure, it still contains indicators with low levels of disclosure. To summarise, the highest two subcategories disclosed in the 'Economic area' are 'A.1. Revenue and/or (net) value added' and 'A.2. Payments to the Government,' while the two subcategories with the fewest disclosures are 'A.3.New investment/ expenditures' and 'A.4. Local supplier/purchasing programs.' Table 7 shows that the economic area disclosure varies significantly by industry, with the GCI index being highest for NSE 25 companies in the construction and allied, investment, manufacturing and allied, and telecommunication industries (1.000) and lowest for those in the commercial and services and investment services industries (0.875).

The institutional area had the second-highest GCI score of 0.8171. Companies in the energy and petroleum industries (1.000), construction and allied (0.8571), Insurance (0.8571), and telecommunication (0.8571) had the highest GCI Institutional Index. The NSE 25 firms in the commercial and services (0.4285), investment (0.7142), and investment services (0.7142) had the lowest GCI Institutional Index. The highest two subcategories disclosed in the 'Institutional area' were ‘D.1.5. Compensation: Total compensation per board member (executive and non-executive directors and 'D.1.1.Several board meetings and attendance rate’ while the two subcategories with the fewest disclosures were ‘D.2.1. Amount of fines paid or payable due to settlements’ and ‘D.2.2An average number of hours of training on anti-corruption issues, per year per employee.’

Regarding the highest average reporting offered by the NSE 25 firms analysed, the 'Social area' with a GCI Index of 0.72 is placed third among the four categories. Companies in the construction and allied industries (1.000) and energy and petroleum (0.9047) had the highest GCI Social index. The NSE 25 corporations in the commercial and services (0.3571) and investment (0.5714) categories had a lower GCI index.

Table 8: NSE 25 disclosure of Global Core Indicators by NSE Sector

	Area Disclosure Index(ADX) per sector				Sectoral Disclosure Index(SDX)
Sector	**Economic area**	**Environmental area**	**Social area**	**Institutional area**	**Total**
Banking	0.9305	0.6666	0.7142	0.8253	0.7744
Commercial and Services	0.875	0.3636	0.3571	0.4285	0.5000
Construction and Allied	1.000	0.909	1.000	0.8571	0.9393
Energy and Petroleum	0.9583	1.000	0.9047	1.000	0.9696
Insurance	0.9	0.3090	0.6857	0.8571	0.6484
Investment	1.000	1.000	0.5714	0.7142	0.8484
Investment Services	0.875	0.0909	0.5714	0.7142	0.5151
Manufacturing and Allied	1.000	1.000	0.8571	0.8571	0.9393
Telecommunication	1.000	1.000	0.8571	0.8571	0.9393
Total	**0.935**	**0.6509**	**0.72**	**0.8171**	**0.7696**
NSE25DX					**0.7696**

The overall average disclosure score of NSE 25 index companies was 0.7696. This is a moderate level of disclosure, which necessitates more collective and focused efforts by all parties concerned with sustainable development goal disclosure and better-associated disclosure practices. However, in the Kenyan Conte, at t overall sustainability disclosure is acceptable, particularly in comparison to other emerging settings. In Malaysia, for example, sustainability disclosure is claimed to be approximately 10%, 9% in South Africa, and 5% in Pakistan(Azzam et al., 2020; Haywood & Boihang, 2021; Rehman et al., 2020; Wasara & Ganda, 2019).

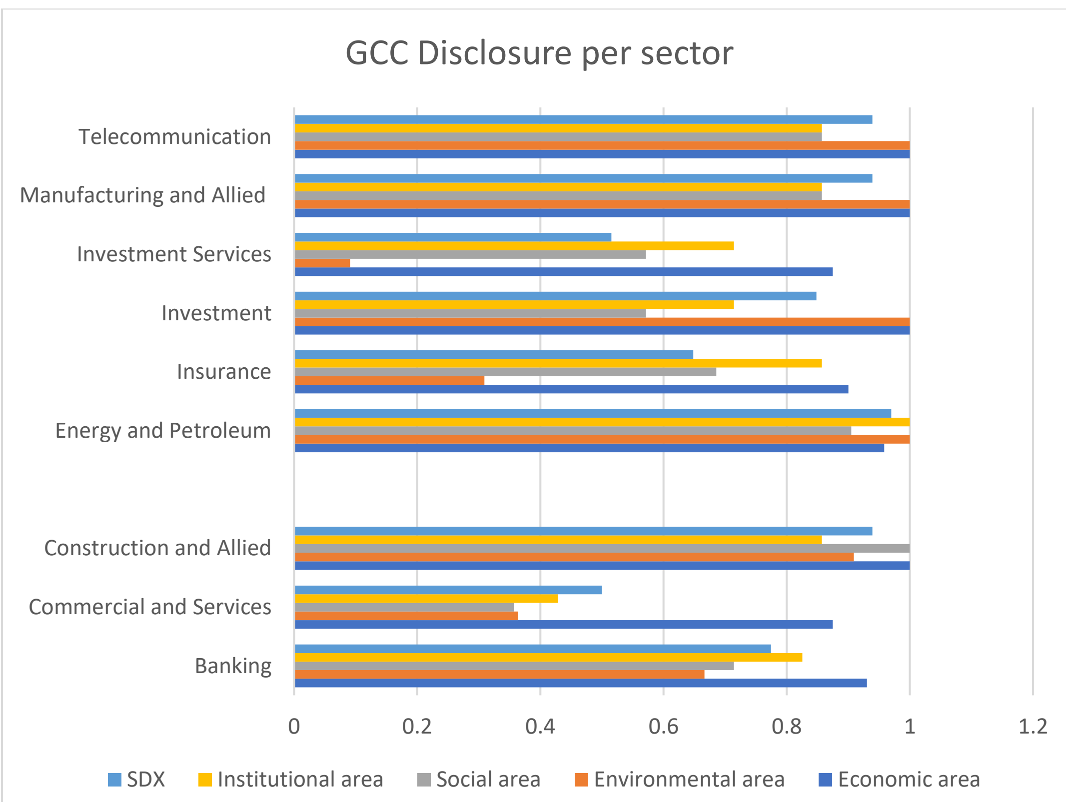

Fig 1: GCC Disclosure per sector

Further, the production companies had the highest SDG disclosure (0.94525) compared to the service companies (0.715125).

Table 9: Production versus service companies NSE 25 disclosure of Global Core Indicators

	Area Disclosure Index(ADX) per cluster				Cluster Disclosure Index(SDX)
Cluster	**Economic area**	**Environmental area**	**Social area**	**Institutional area**	**Total**
Production companies	0.9861	0.9696	0.9206	0.9047	0.94525
Service Companies	0.9300	0.5716	0.6262	0.7327	0.715125

5. Conclusion and Implication

This paper investigated how Kenyan-listed companies disclosed company actions relevant to the UN SDGs. The research employed a sample of annual and sustainability reports drawn from NSE 25 listed firms using the ISAR GCI benchmark 33 SDG indicators.

The findings support several significant conclusions. First, the empirical results provide strong evidence that NSE 25 corporations are committed to sustainable development based on the extent of the disclosure of corporate activities related to the UN SDGs. This study presents a considerable implication for the future of SDG in Kenya. Engagement with Kenyan publicly traded firms suggests a basic understanding of sustainability concerns and corporate sustainability. However, organizations must continuously grow their capability to incorporate sustainability into their plans and, eventually, disclose sustainability performance in a consistent, transparent, and principle-based manner that satisfies stakeholder expectations. The high SDG disclosure observed in our findings may be attributed to the regulatory and legislative changes in reporting requirements by the Kenyan Capital Market Authority and Nairobi Securities Exchange, as interest by investors and other stakeholders in sustainability matters has surged with the modern investor in the capital markets being more discerning and demanding more disclosure from companies. Kenya is widely recognised as an emerging market because of its increasing degree of financial development activities. This study stresses the strategic relevance of SDG reporting and advises emerging countries' organisations to invest in creating a sustainability framework to obtain a competitive advantage with superior financial performance in local and global markets.

The economic sector was the most reported. Six economic area subcategories (revenue, net value-added, taxes and other government payments, green investment, and community investment) are more significant than the area average. The second area of disclosure is the institutional area. Five of the seven subcategories of the institutional area (number of board meetings and attendance rate, number and percentage of female board members, board members by age range, number of meetings of the audit committee and attendance rate, total compensation per board member, both executive and non-executive directors) were disclosed higher than the area average. The third area of disclosure was the social area (the average disclosure of six companies was 20%). Four of seven subcategories in the social area (proportion of women in managerial positions, expenditure on employee training per year per employee, employee wages and benefits as a proportion of revenue, and expenditures on employee health and safety as a proportion of revenue) were disclosed higher than the area average. The lowest disclosed area was the environmental area. Four out of eleven subcategories in the environmental area (water use efficiency, waste reused, remanufactured and recycled, energy efficiency, and renewable energy) are disclosed as higher than the area's average. These findings support the efficiency and legitimation predictions of the Legitimacy theory. By adding legitimacy theory, this study provides new insights into the relationship of interest.

The findings have several practical implications for NSE-listed firms and legal and regulatory agencies. They demonstrate that although environmental disclosure ratings were low, they vary widely among the NSE sectors. This may prompt financial market regulators and policymakers to find ways to improve environmental compliance/disclosure practices. They might consider establishing independent committees to monitor SDG implementation and disclosure of environmental practices. This may drive NSE and capital market authorities and policymakers to look for measures to strengthen environmental compliance and transparency standards by creating independent committees to oversee the implementation and disclosure of SDGs practices and building a culture of sustainable development among diverse stakeholders while emphasising the significance of information sharing via transparency accompanied by expanded reporting requirements and increased regulatory oversight.

6. Limitations and Further research

Finally, this research, like any other, has limitations. First, because it focuses only on the degree to which the top 25 Kenyan listed corporations reveal SGD-related information, care should be given when drawing generalisations about other companies.

Secondly, although our content analysis instrument is an effective tool for analysing sustainability disclosure and may be used to evaluate cross-country data, this technique has significant limitations: It standardises individual replies to suit the stated categories; poor disclosure scores may emerge as a consequence of firms neglecting to disclose their sustainable policies in annual or sustainability reports, and the actual study of the report's substance involves some subjectivity. Because this study employs a content analysis approach for SDG reporting, there may be some subjectivity in the researcher's evaluation of the variable scoring procedure. For future studies, independent experts in this field must confirm the measurement of SDG reporting. Additionally, the explanation offered in the discussion is based only on the findings of past research and our study. Further study may use a mixed-method approach, integrating quantitative and qualitative approaches, to improve the quality of the research.

Second, our rating scale (either 0 or 1) eliminates subtlety in determining whether a firm complies/performs or not since it makes no allowance for the firm's sustainability performance level. Thus, future research may expand on this study qualitatively to better grasp the breadth and causes of SDG disclosure practices and SDG disclosure's effect on stock price response. Further study may use a mixed-method approach, integrating quantitative and qualitative approaches, to improve the quality of the research. This paper establishes an important baseline for future research in this area.

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