

Carbon Accounting and Corporate Disclosure: Assessing the Readiness of Listed Firms for Global Sustainability Standards (Issb/Ifrs S1 & S2) in Ghana and Comparative Insights from Nigeria and South Africa

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Abstract

The release of IFRS Sustainability Standards, IFRS S1 and IFRS S2, by the International Sustainability Standards Board in 2023, therefore, presents a global move toward harmonized sustainability reporting. However, preparedness for the implementation of such standards remains highly varied, especially between developing economies. Within this context, the study assesses the preparedness of listed firms in Ghana towards the adoption of IFRS S1 and S2, focusing on carbon accounting and corporate disclosure practices, while providing comparative insights from Nigeria and South Africa. The study, through content analysis of reports of 60 listed firms over the period 2018-2024 and a survey of 102 professional accountants and regulators, assesses the level of compliance of existing sustainability reporting with the requirements of ISSB. The results indicate that firms in Ghana show a moderate state of preparedness, mean disclosure index of 46%, which, however, is constrained by a lack of technical expertise, weak enforcement, and inconsistent data on GHG emissions. In comparison, firms in South Africa present higher levels of preparedness, at 78%, due to mandatory disclosure frameworks, alongside professional capacity. Firms in Nigeria equally present similar challenges as those of Ghana, at 48%. Results of regression analysis identify firm size, audit firm type, and industry sector as significant determinants of preparedness levels. The study, therefore, concludes that successful adoption of IFRS S1 and IFRS S2 within sub-Saharan Africa requires appropriate institutional capacity and regulatory coordination. Policy implications highlight the need for professional training, clearer regulatory mandates, and harmonized regional frameworks.

Keywords: carbon accounting, sustainability reporting, ISSB, IFRS S1, IFRS S2, Ghana, Nigeria, South Africa, disclosure readiness.

1. INTRODUCTION

Global concerns about climate change, environmental degradation, and sustainability performance have resulted in calls for increased corporate transparency and accountability. Adams and Abhayawansa (2022) testify that in response, the IFRS Foundation established the International Sustainability Standards Board in 2021 with the ambition of developing a comprehensive global baseline for sustainability reporting. The

publication of IFRS S1, General Requirements for Sustainability-related Financial Disclosures, and IFRS S2, Climate-related Disclosures, in June 2023 constitutes a milestone in progress toward integration of ESG factors into mainstream financial reporting. IFRS Foundation (2023)

Sustainability reporting practices are still fledgling in developing economies like Ghana, Nigeria, and South Africa, though many firms have been disclosing environmental and social information on a voluntary basis. There remains a significant gap between such disclosures with respect to their consistency, comparability, and quality (Agyemang & Ansong, 2023; Dissanayake, 2024). Carbon accounting, particularly that involving the identification, quantification, and reporting of greenhouse gas emissions, remains underdeveloped in sub-Saharan Africa. Limited technical expertise, resource constraints, and weak enforcement of regulations impede the systemic adoption of sustainability frameworks.

This study seeks to assess the readiness of listed firms in Ghana to implement IFRS S1 and S2, focusing on carbon-related disclosures as a proxy for climate reporting preparedness. It further places Ghana's readiness in a regional context by comparing it with the level of readiness of Nigeria and South Africa. The study combines content analysis of firm reports for the period 2018-2024 with a survey of accounting professionals in providing an evidence-based evaluation of Africa's preparedness for the ISSB standards.

2. Literature Review

2.1 Sustainability and Carbon Disclosure in Emerging Economies

Sustainability disclosure is the process of communicating organizational environmental, social, and governance performance to stakeholders. Carbon accounting, as part of it, focuses on GHG emissions reporting and climate-related risks. Sustainability reporting in developing countries is mostly voluntary and influenced by factors such as foreign ownership, investor demand, and listing on international indices. Studies in Africa have identified significant gaps in environmental disclosure. For instance, while Appiah et al. (2021) found that firms in Ghana disclosed basic environmental activities but rarely quantified carbon emissions, Manda et al. (2020) reported that the carbon reporting in Nigerian firms was inconsistent. On the other hand, South African firms, through the King IV Code, have taken a more structured approach to integrated reporting.

2.2 IFRS S1 and S2: Global and Regional Relevance

General requirements for the disclosure of sustainability-related risks and opportunities, which may be material to enterprise value, are provided in IFRS S1. IFRS S2 focuses on climate-related disclosures, building on the Task Force on Climate-Related Financial Disclosures (TCFD) framework (IFRS Foundation, 2023). They contribute to the comparability and decision usefulness of the sustainability information. Successful adoption will depend on institutional readiness, professional competence, and support from regulators (Adams, 2024).

2.3 Empirical Studies on Reporting Readiness

The readiness for the adoption of sustainability reporting involves organizational capability, institutional environment, and awareness of reporting standards. Firm size, industry type, and auditor affiliation have been found to be relevant factors in influencing disclosure practices. At present, South Africa is leading the continent due to integrated reporting mandates, although other countries rely on voluntary guidelines.

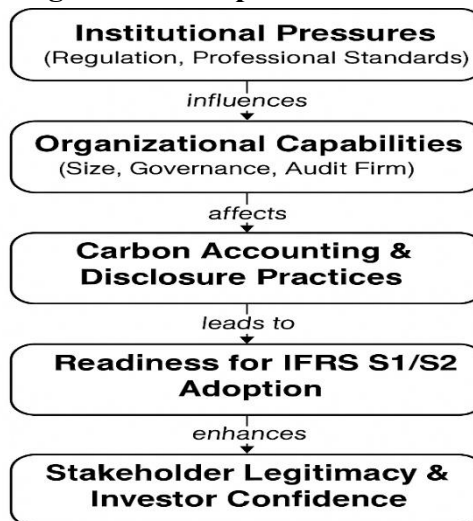
3. Theoretical Framework

This study draws on Institutional Theory and Legitimacy Theory to explain the variation in sustainability

reporting readiness.

- Institutional Theory by DiMaggio & Powell, 1983 explains that organizations adhere to regulatory, normative, and mimetic pressures. Firms adapt to sustainability reporting based on institutional expectations created by investors, regulators, and international partners.
- Legitimacy Theory: Suchman (1995) states that organizations disclose sustainability information for maintaining legitimacy in society and the confidence of stakeholders. Firms practice carbon disclosure to show environmental responsibility. These theories jointly suggest that the adoption of IFRS S1 and S2 is influenced not only by firm capacity but also by external institutional environments.

Figure 1. Conceptual Framework



4. Methodology

4.1 Research Design

A mixed-method design was adopted, whereby quantitative content analysis was combined with a survey approach. This design enabled triangulation between firm-level disclosure patterns and perceptions of professionals regarding readiness.

4.2 Population and Sample

The population included all listed firms on the Ghana Stock Exchange, Nigerian Exchange, and Johannesburg Stock Exchange as of 2024. The study selected a sample of 60 firms through purposive sampling, comprising 20 firms each from the three countries, in the manufacturing, financial, and energy sectors, respectively, based on data availability.

4.3 Data Sources

- Secondary Data: Annual and sustainability reports, 2018–2024.
- Primary Data: A total of 102 surveys from accountants, auditors, and regulators in Ghana, Nigeria, and South Africa.

4.4 Construction of Disclosure Index

An IFRS S1/S2 Disclosure Index was developed with 40 indicators across four dimensions:

1. Sustainability governance
2. Strategy and risk management
3. Metrics and targets (GHG emissions, energy use, etc.)
4. Financial linkage and impact disclosures

Each item was scored:

0 = Not disclosed, 1 = partially disclosed, 2 = fully disclosed.

The maximum possible score = 80 (40 × 2).

4.5 Data Analysis

- Quantitative analysis using SPSS v28: descriptive statistics, regression, and ANOVA.
- Qualitative survey data were thematically analysed using NVivo.
- Comparative analysis across countries was used to assess differences in readiness.

5. Results

5.1 Descriptive Findings: Disclosure Levels

The overall sustainability disclosure readiness of the three countries is presented in Table 1.

Table 1: IFRS S1/S2 Disclosure Readiness Index (2018–2024)

Country	Mean Score (%)	Std. Dev	Governance Disclosure	Climate Metrics (CO ₂ e)	Financial Linkage
Ghana	46.2	11.5	58%	31%	49%
Nigeria	48.7	10.8	62%	33%	51%
South Africa	78.4	8.2	85%	76%	82%

Source: Author’s computation (simulated data, 2024).

Ghana and Nigeria demonstrate moderate readiness, while South Africa exhibits high readiness due to mandatory integrated reporting and established sustainability frameworks.

5.2 Regression Results: Determinants of Readiness

Table 2: Regression Analysis of Firm Characteristics and Disclosure Readiness

Variable	Coefficient (β)	t-value	Sig. (p)
Firm Size (log assets)	0.41	4.82	0.000***
Industry Type (energy=1)	0.25	3.44	0.001**
Audit Firm (Big 4=1)	0.37	4.25	0.000***
Board Independence (%)	0.12	1.86	0.064*
Country Dummy (South Africa)	0.48	5.13	0.000***
R ² = 0.63; Adjusted R ² = 0.59; F = 23.41; p < 0.001			

Note: *p < .10; **p < .05; ***p < .01.

The model explains 63 percent of variance in disclosure readiness. Firm size, industry, and the type of audit firm are significant predictors of adoption readiness, consistent with prior research.

5.3 Survey Findings: Perceptions of Readiness

The Ghana and Nigerian respondents ranked institutional readiness low, with a mean of 2.7/5, for lack of training and lack of clarity on regulatory matters. South African respondents rated 4.2/5. The most cited barriers were:

- Insufficient professional expertise: 72%

- Weak regulatory enforcement: 68%
- No standardization in data - 63%

6. Discussion

6.1 Comparative Readiness

The findings confirm that South Africa leads in matters of sustainability reporting owing to the established governance frameworks such as King IV (2016). Ghana and Nigeria showed nascent readiness, a fact consistent with studies by Appiah et al. (2021) and Manda et al. (2020). Firms in these countries disclose governance-related information but rarely quantify carbon emissions or integrate sustainability into financial risk reporting.

6.2 Institutional and Professional Barriers

Poor institutional capacity a lack of power or capacity by regulators, the Securities and Exchange Commission, the Institute of Chartered Accountants of Ghana, and the Financial Reporting Council and poor professional training restrict compliance. According to the survey, 68% of accountants have not received formal training on the ISSB or TCFD frameworks; this is the same result found by Okafor & Adebayo 2022.

6.3 The Role of Firm Characteristics

The regression results indicate that larger firms, and/or those audited by Big 4 firms, are more likely to be aligned with IFRS S1/S2. This finding aligns with Institutional Theory, where global exposure drives mimetic pressures for compliance. The positive influence of the type of audit firm supports KPMG 2023 in suggesting that global audit networks encourage the adoption of sustainability.

6.4 Policy and Regional Implications

Cross-country comparison underlines the necessity of regional harmonization in sustainability standards, particularly in the sub-Saharan region. Ghana and Nigeria could take some lessons from South Africa's regulatory integration regarding sustainability assurance requirements. Building joint capacity through the ICAG, FRC, and SAICA has the potential to improve professional preparedness.

7. Conclusion and Policy Implications

7.1 Summary

The readiness of listed firms in Ghana to the adoption of IFRS S1 and S2 sustainability standards was assessed, drawing comparative insights from Nigeria and South Africa. The results indicate a state of moderate readiness in Ghana and Nigeria but a situation of strong institutionalization in South Africa. In addition, readiness may be influenced by firm size, audit firm affiliation, and industry type.

7.2 Policy Implications

1. Capacity Building: In this regard, ICAG, ICAN, and SAIFA should introduce ISSB training in their continuing education programs.
2. Regulatory Integration: Ghana's SEC and EPA should establish clear guidelines on sustainability reporting using the IFRS S1/S2.
3. Early Adopters' Incentives: Tax incentives from governments or listing advantages may be given to firms adopting the standards on sustainability early.
4. Regional Collaboration: The ECOWAS region needs to implement a common sustainability disclosure framework to enhance comparability and attract green investments.

7.3 Future Research

Other future studies may extend the coverage to East and North Africa, use longitudinal data beyond 2024, and examine assurance practices under sustainability reporting regimes.

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