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Article

Sustainability Reporting and Liquidity Position of Listed Firms in Nigeria

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Abstract: The effect of sustainability reporting on the liquidity position of listed entities in Nigeria was investigated using quantitative approach and data extracted from the annual reports of 76 listed companies spanning fourteen years (2010-2023). The sustainability reporting variables included economic, environmental, social, and governance disclosures, while the performance indicator comprised liquidity. Panel regression analysis, specifically the random effects model, was conducted based on the Hausman test results, ensuring robust and reliable findings. Liquidity, as proxied by the Acid Test Ratio (ATR), was significantly influenced by sustainability reporting dimensions, with economic, environmental, social, and governance disclosures exhibiting varying effects. Economic disclosures negatively impacted liquidity, suggesting that firms emphasizing financial transparency may allocate resources to long-term investments or debt servicing rather than maintaining liquid assets. Environmental disclosures also had a significant negative effect on liquidity. Social disclosures negatively impacted liquidity, indicating that investments in community engagement, employee welfare, and other social initiatives might constrain a firm's ability to maintain liquid assets. Governance disclosures, on the other hand, exhibited a strong positive relationship with liquidity, emphasizing their role in fostering financial discipline and resource optimization. While governance disclosures support the argument that transparency enhances stakeholder confidence and financial outcomes, the negative effects of economic, environmental, and social disclosures highlight the short-term cost implications of addressing diverse stakeholder interests. These findings suggest that firms must carefully balance the competing demands of liquidity management and sustainability reporting to achieve optimal outcomes.

Keywords: Liquidity; Liquidity Position; Listed Entities; Sustainability Reporting; Nigeria

1. Introduction

Sustainability reporting is increasingly central to corporate strategy. Okwuosa and Adesina [1] note that companies are moving beyond traditional approaches to corporate performance by adopting greener solutions. Providing sustainability reports to stakeholders boosts confidence and, over time, enhances overall corporate performance [2, 3]. Yet many organizations face persistent performance challenges, including financial instability, liquidity problems, profitability constraints, investment setbacks, and reputational decline [4, 5]. In developing countries such as Nigeria, adaptation to sustainability reporting remains gradual [1].

The absence of sustainability reporting has contributed to significant environmental and social harm. Onyeagoziri et al. [6] describes the Niger Delta's degradation caused by oil spills, which have disrupted fishing and destroyed ecosystems. Without accountability, such practices jeopardize livelihoods. Okwuosa and Adesina [1] recommend making sustainability reporting compulsory to hold corporate actors responsible. The Guardian [7] reported a July 2018 tanker explosion on the Lagos–Ibadan Expressway, killing over 20 people and destroying property. The incident, traced to the use of a leaking tanker, exemplifies unsustainable decisions where cost-cutting is prioritized over human safety. Such cases reinforce the need to assess whether sustainability improves organizational performance.

The destruction of Nigeria's cultural heritage further illustrates the problem. PWC [8] stresses that businesses can enhance sustainability by promoting local culture, yet many practices erode cultural traditions. Aondoakaa [9] notes that pollution in the Niger Delta has virtually erased fishing culture, reflecting broader failures in corporate accountability. Public awareness of sustainability remains low, especially at the grassroots level, compounding the challenge. Non-compliance with sustainability standards has led some companies to fail entirely [1]. Sustainable companies, in contrast, attract more customers and revenue, while unsustainable ones face declining profitability, liquidity, and financial stability [10, 11].

Globally, numerous studies have examined sustainability reporting's impact on performance, including research in Asia [11], Spain [12], New Zealand [13], the United Kingdom [4, 14], the United States [15], China [16], Ghana [17, 18], and Nigeria [19]. However, most focus primarily on financial outcomes, overlooking broader performance metrics.

In Nigeria, sector-specific studies Effiong et al. [20]; Ndukwe [21]; Ezeokafor and Amahalu [22]; Akpan and Emenyi [23]; Adeniran and Olorunfemi [24]; Temitope and Godwin [25]; Ogochukwu and Grace [5], have provided valuable insights but cannot fully represent the national corporate landscape. This gap underscores the need for cross-sector analysis. A further limitation in prior Nigerian research is the reliance on the Global Reporting Initiative (GRI) framework, which was developed for advanced economies. The Nigerian Exchange Group (NGX) sustainability guidelines, designed specifically for Nigerian corporate realities, offer a more context-appropriate measurement tool [1]. The absence of NGX-based measurement in past studies is a key literature gap this research addresses.

Additionally, many empirical works Okoye and Ndum [2]; Korolo and Korolo [26]; Okon et al. [27]; Coelho, Jayantilal, and Ferreira, [28]; Akpan and Simeon [23]; Olabode [29] report inconclusive findings, often due to conceptual gaps such as failure to incorporate non-financial dimensions of performance or overemphasis on profitability. This study addresses these gaps by incorporating both financial and non-financial performance indicators to assess the influence of sustainability reporting on the liquidity position of listed Nigerian entities.

Main Objective: To assess the influence of sustainability reporting on the liquidity position of listed Nigerian entities.

2. Materials and Methods

2.1. Research Design

This study adopts an ex-post facto research design, which investigates events that have already occurred and been recorded [30, 31]. Both descriptive statistics and panel data analysis were employed. Data were obtained from the Nigeria Exchange Group (NGX) fact book, comprising time-series (t) and cross-sectional (i) elements assembled into a panel dataset. Analysis was conducted in Stata 13.0 using multiple regression based on the ordinary least squares (OLS) method, alongside descriptive statistics such as mean, median, maximum, minimum, and standard deviation.

2.2. Population and Sampling

The NGX lists 393 securities, including 151 companies as of 2023 year-end. KPMG [32] reports that only about half consistently produce sustainability reports. Based on NGX records, 76 companies met the criterion of continuous sustainability reporting from 2010 to 2023. A census sampling technique was used, making the entire population of 76 firms the sample for this study.

Justification for sample: These are firms that met the criterion of continuous sustainability reporting from 2010 to 2023.

2.3. Sources of Data

The study used secondary data. The sources of data include audited annual reports and accounts of companies in the Nigeria Stock Exchange Fact Book. Other sources include textbooks, academic journals, internet and conferences reports. Data was collected from annual reports published in the Nigeria exchange group fact book using Excel. The annual reports was reviewed and all relevant data was extracted and populated on Excel for necessary calculations. Annual reports are generally considered by management and owners of the company to be the best source of Information on the activities of any organization at any point in time. Top Managers of companies consider annual reports as a key medium of communicating the company's performance [33].

2.4. Method of Data Collection

The method adopted for this study is purely quantitative. Quantitative data collection is a method of gathering numerical data that can be translated into statistical information. This method ensures that numerical value is assigned to every observation. All data used for the purpose of this was numeric and those that were not numeric were assigned numerical numbers using simple disclosure index (SDI).

2.5. Model Specification

In order to test for the relevance of the hypotheses regarding the impact of Sustainability Reporting on Corporate performance using Liquidity position of companies listed on the Nigeria Exchange Group, the Regression model which examines the effect of the multiple independent variables on the dependent variables was adapted from the study of Adeniran, Stephens and Akinsehinwa [34]. Therefore, the perceived functionally relationship shall be specified as follows:

$$Yit = \beta\_0 + \beta\_1 X\_it + \varepsilon\_it \quad (1)$$

$$ATR = f(ECM, EVM, SOC, GOV) \quad (1a)$$

The hypothesis which states that sustainability reporting does not have a significant effect on the Liquidity position (ATR) of listed entities in Nigeria, we have;

$$ATR\_it = \beta\_0 + \beta\_1 \text{ X } ECM\_it + \beta\_2 \text{ X } EVM\_it + \beta\_3 \text{ X } SOC\_it + \beta\_4 \text{ X } GOV\_it + \varepsilon\_it \quad (2)$$

Where:

Y is the dependent variable which describes liquidity position.

X is the independent variables which represent the components of Sustainability Reporting.

ε = is the error term capturing other explanatory variables not explicitly included in the model.

β0 = is the intercept or constant.

β1, β2, β3 and β4 are the coefficient of the regression.

it = (i = no of cross section and t = time periods).

ATR = Acid test ratio.

ECM = Economic disclosures.

SOC = Social disclosures.

EVM = Environmental disclosures.

GOV = Governance disclosures.

2.6. Measurement of Variables

Sustainability reporting was measured using the approved NGX sustainability guidelines. Corporate performance was assessed using both financial and non-financial measures. Financial performance was represented by liquidity, measured through the Acid Test Ratio (ATR), while non-financial performance was assessed via corporate image status (CIS). The dependent variable was ATR, with independent variables comprising economic (ECM), social (SOC), environmental (EVM), and governance (GOV) disclosures. These were measured in line with NGX guidelines and prior studies. Disclosure indices were computed based on occurrence and level (quantitative/qualitative) of reporting: a score of 1 was assigned for disclosure of any indicator and 0 for non-disclosure, with a maximum possible score of 4 for complete disclosure.

2.7. Data Validation

Data were sourced from audited annual reports, ensuring reliability and compliance with independent verification standards.

2.8. Method of Data Analysis and Statistical Treatment

Multiple regression analysis was conducted using Stata 13.0 to determine the effect of sustainability reporting on corporate performance. Descriptive statistics (minimum, maximum, mean, standard deviation, skewness, kurtosis, and Jarque-Bera) were used for data overview in quantitative and qualitative forms. F-test and Hausman test determined whether fixed or random effects were more appropriate: if $p > 0.05$, fixed effects were adopted; if $p \leq 0.05$, random effects were used. Hypotheses were tested at a 0.05 alpha level, with significant p-values and F-statistics leading to rejection of the null hypothesis. Correlation tests confirmed the absence of autocorrelation, and diagnostic tests verified model efficiency.

2.9. A Priori Expectation

It was hypothesized that all sustainability reporting variables would have a positive effect on ATR, implying that increases in ECM, SOC, EVM, and GOV would result in corresponding increases in ATR.

Table 1. List of 76 Samples selected.

S/No	Name of Companies	S/No	Name of Companies
1	Academy Press Plc.	11	Capital Oil Plc. [Dip]
2	Afromedia Plc. [Mrf]	12	Champion Brew. Plc. [Bls]
3	Aluminium Extrusion Ind. Plc. [Bls]	13	Chams Holding Company Plc.
4	Associated Bus Company Plc.	14	Chellarams Plc.
5	Austin Laz & Company Plc. [Rst]	15	Conoil Plc.
6	Berger Paints Plc. [Cg+]	16	Custodian Investment Plc. [Cg+]
7	Beta Glass Plc.	17	Cutix Plc.
8	C & I Leasing Plc.	18	Cwg Plc.
9	Cadbury Nigeria Plc.	19	Daar Communications Plc.
10	Cap Plc.	20	Dangote Cement Plc. [Cg+]
21	Dn Tyre & Rubber Plc. [Dip]	31	Guinness Nig Plc. [Cg+]
22	Ekocorp Plc. [Bmf]	32	Honeywell Flour Mill Plc. [Bls][Cg+]
23	Ellah Lakes Plc.	33	Ikeja Hotel Plc.
24	Eterna Plc.	34	Industrial & Medical Gases Nigeria Plc.
25	Eunisell Interlinked Plc.	35	International Breweries Plc. [Bls]
26	Fidson Healthcare Plc.	36	Japaul Gold & Ventures Plc.
27	Flour Mills Nig. Plc. [Cg+]	37	John Holt Plc.
28	Ftn Cocoa Processors Plc. [Rst]	38	Juli Plc.
29	Golden Guinea Brew. Plc. [Bls]	39	Julius Berger Nig. Plc. [Cg+]
30	Greif Nigeria Plc. [Dip]	40	Lafarge Africa Plc. [Cg+]
41	Learn Africa Plc.	51	Neimeth International Pharmaceuticals Plc. [Cg+]
42	Livestock Feeds Plc.	52	Nestle Nigeria Plc. [Cg+]
43	May & Baker Nigeria Plc.	53	Nigerian Brew. Plc. [Cg+]
44	Meyer Plc.	54	Nigerian Enamelware Plc.
45	Morison Industries Plc.	55	Oando Plc. [Mrf]
46	Mrs Oil Nigeria Plc.	56	Okomu Oil Palm Plc.
47	Multi-Trex Integrated Foods Plc. [Dwl]	57	P Z Cussons Nigeria Plc. [Cg+]
48	N Nig. Flour Mills Plc.	58	Pharma-Deko Plc. [Mrf]
49	Nascon Allied Industries Plc.	59	Premier Paints Plc. [Mrf]
50	Ncr (Nigeria) Plc.	60	Presco Plc.
61	R T Briscoe Plc.	69	Trans-Nationwide Express Plc.
62	Red Star Express Plc. [Cg+]	70	Tripple Gee and Company Plc.
63	S C O A Nig. Plc.	71	U A C N Plc.
64	Smart Products Nigeria Plc. [Mrf]	72	Unilever Nigeria Plc. [Cg+]
65	Tantalizers Plc.	73	Union Dicon Salt Plc. [Dwl]
66	Thomas Wyatt Nig. Plc. [Mrs]	74	University Press Plc.
67	Totalenergies Marketing Nigeria Plc.	75	Updc Plc. [Bls]
68	Tourist Company of Nigeria Plc. [Dip]	76	Vitafoam Nig Plc.

Source: Author's construct (2024).

3. Results

3.1. Descriptive Analysis

Descriptive statistics provide an initial summary of the data, offering insights into the central tendencies, dispersion, and distribution of the variables. This section will elucidate the basic characteristics of the dataset, including mean, median, standard deviation, and range, helping to understand the variability and distributional properties of both the sustainability reporting and corporate performance (See Table 2).

Table 2. Summary of Descriptive Statistics.

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis	Jarque-Bera	Observations
ATR	7.523	5.726	1.238	40.256	1.923	7.940	3.614	N = 1064
ECM	2.849	0.572	2.272	4.000	1.427	4.593	3.469	N = 1064
EVM	2.843	1.021	0.000	4.000	-0.703	5.589	4.884	N = 1064
SOC	3.071	1.066	1.897	4.000	5.366	45.158	39.940	N = 1064
GOV	2.790	0.539	2.272	4.000	1.449	4.397	4.064	N = 1064

Source: Author's Computation Using Stata 13.0.

3.2. Liquidity Position (ATR)

The Acid Test Ratio (ATR) measures a firm's ability to meet short-term liabilities with its most liquid assets. The sample mean of 7.523 suggests high liquidity on average, possibly reflecting conservative financial management. However, the substantial standard deviation (5.726) indicates marked variation across firms—some maintaining large liquidity buffers, others operating closer to minimum thresholds. The minimum ATR of 1.238, while above the critical value of 1, points to possible liquidity strain in certain firms. The maximum of 40.256 may signal inefficiencies, such as overcapitalization or idle assets. Overall, while liquidity appears healthy in many cases, the wide spread suggests differing capacities to finance sustainability initiatives.

3.3. Economic Disclosures (ECM)

ECM has a mean of 2.849 (SD = 0.572), indicating relatively uniform reporting among sampled firms, likely due to baseline compliance with NGX or industry norms. However, the low mean raises concerns over reporting depth, suggesting firms may be focused on fulfilling minimum obligations rather than pursuing comprehensive economic disclosure. The range (2.272 to 4.000) shows limited differentiation, implying ECM is underutilized as a strategic tool for competitive positioning. The skewness (0.568) reflects a moderate positive skew most firms report at lower levels, but a few outperform. Kurtosis (3.861) suggests leptokurtic distribution, with data clustered near the mean but some higher outliers. The Jarque-Bera statistic (2.993) does not reject normality, though slight deviation is noted.

3.4. Social Disclosures (SOC)

SOC averages 3.071 (SD = 1.066), with moderate variability. The minimum value (1.897) indicates some firms report minimally, potentially due to limited CSR investment or strategic neglect. The

maximum of 4.000 reflects firms actively aligning with societal expectations, reaping reputational and operational benefits. The large gap underscores uneven adoption of social practices in Nigeria's corporate sector. SOC is strongly positively skewed (5.366), with most scores low but some extreme highs. The extremely high kurtosis (45.158) shows a concentrated distribution with significant outliers, suggesting a small number of highly proactive firms.

3.5. Environmental Disclosures (EVM)

EVM's mean (2.843) and SD (1.021) indicate moderate variability in environmental reporting. The minimum score of 0.000 shows complete omission by some firms, raising concerns about environmental accountability and regulatory oversight. The maximum (4.000) indicates some alignment with international sustainability trends. Skewness (-0.703) shows a moderate left skew, meaning more firms have higher-than-average scores but with some extremely low values. Kurtosis (5.589) indicates a leptokurtic distribution, with clustering around the mean and notable outliers.

3.6. Governance Disclosures (GOV)

GOV has a mean of 2.790 (SD = 0.539), showing a relatively standardized approach to governance reporting. This likely stems from regulatory mandates on board structure, audits, and compliance. However, the low mean suggests most firms report at baseline rather than leveraging governance transparency strategically. The range (2.272–4.000) reflects some stronger performers but limited differentiation overall. Skewness (1.449) reveals a moderate positive skew, with most firms clustered at lower governance levels. Kurtosis (4.397) indicates concentration around the mean with occasional high outliers.

3.7. Correlation Analysis

Correlation analysis assessed the strength and direction of pairwise relationships between variables, offering preliminary insight into how sustainability reporting dimensions relate to corporate performance. This also served as a check for multicollinearity among variables (see Table 3). The results provide a foundation for subsequent regression analysis, helping to identify which disclosure dimensions are most predictive of performance.

3.8. Liquidity Position and Sustainability Reporting

The Table 3 contains pairwise correlation output for liquidity position and sustainability reporting.

Table 3. Pairwise correlations for Liquidity Position (ATR).

Variables	(1)	(2)	(3)	(4)	(5)
(1) ATR	1.000				
(2) ECM	0.177	1.000			
(3) EVM	-0.102	0.569	1.000		
(4) SOC	0.095	0.544	0.206	1.000	
(5) GOV	0.215	0.965	0.540	0.570	1.000

Source: Author's Computation (2024).

3.9. Liquidity Position (ATR) and Economic Disclosures (ECM)

The correlation coefficient between ATR and ECM is 0.177 (Table 3), indicating a weak positive relationship. This suggests that firms with stronger liquidity are somewhat more likely to engage in economic disclosures. A healthy liquidity position can provide the resources and operational stability needed to meet stakeholder expectations, comply with disclosure requirements, and invest in reporting processes. Such firms may also be better positioned to communicate long-term economic sustainability, reinforcing market confidence. However, the relatively weak correlation implies that while liquidity supports economic reporting, other determinants such as regulatory requirements, market competition, and managerial priorities exert stronger influence.

3.10. Liquidity Position (ATR) and Environmental Disclosures (EVM)

The correlation between ATR and EVM is -0.102, which reflects a weak negative relationship. This suggests that firms with higher liquidity may be slightly less inclined to engage in environmental reporting. One possible interpretation is that such firms may channel their financial strength toward short-term operational priorities rather than long-term environmental initiatives, particularly in contexts where regulatory enforcement is limited. This result may also signal a lack of integration between financial management and environmental sustainability in corporate strategies.

3.11. Liquidity Position (ATR) and Social Disclosures (SOC)

The correlation between ATR and SOC is 0.095, indicating a very weak positive relationship. While firms with greater liquidity theoretically have more capacity to invest in social initiatives such as employee welfare, diversity programs, or community development, this result suggests that liquidity alone is not a strong driver of social reporting. It is possible that the benefits of such disclosures are underappreciated or that social reporting is pursued primarily for compliance rather than strategic purposes.

3.12. Liquidity (ATR) and Governance Disclosures (GOV)

The correlation between ATR and GOV is 0.215, which represents a weak to moderate positive relationship. This suggests that firms with stronger liquidity tend to place more emphasis on governance transparency and accountability. A solid liquidity position can reinforce investor confidence, and governance disclosures may be viewed as an important mechanism for protecting that confidence and mitigating risk. The relatively stronger association compared to other disclosure dimensions indicates that governance is perceived as more directly tied to financial stability and market perception.

3.13. Overall Liquidity and Sustainability Linkages

Overall, liquidity is positively associated with economic, social, and governance disclosures, while its relationship with environmental disclosures is negative. This pattern suggests that firms may prioritize sustainability dimensions with more immediate financial, operational, or reputational payoffs, while environmental initiatives often requiring longer-term investment, may receive lower emphasis in liquidity-rich contexts.

3.14. Multicollinearity Test (Variance Inflation Factor (VIF))

The Variance Inflation Factor (VIF) test was used to assess collinearity among the independent variables: ECM, GOV, SOC, and EVM. A VIF value above 10 typically signals severe multicollinearity, whereas values close to 1 indicate minimal correlation between predictors [35, 36]. The VIF results in Table 4 confirm that the predictors in this study are independent, ensuring the validity and reliability of the regression estimates:

Table 4. Multicollinearity Test (Variance Inflation Factor (VIF)).

Variable	VIF	1/VIF (Tolerance Value (TV))
ECM	3.380	0.296
GOV	4.630	0.216
SOC	1.510	0.662
EVM	1.510	0.662
Mean VIF|1/VIF	2.758	0.458

Source: Author's Computation (2024). Benchmark: VIF<10, TV>0.2.

The Variance Inflation Factor (VIF) analysis assessed multicollinearity among economic, governance, social, and environmental disclosures. Governance disclosures had the highest VIF (4.630), indicating moderate overlap, likely with economic disclosures (VIF 3.380) due to shared emphases on transparency and accountability. Social and environmental disclosures (VIF 1.510 each) showed low multicollinearity, confirming their independence. The mean VIF (2.758) indicates no significant multicollinearity concern, as all values remain well below the critical threshold of 10. These results support a robust regression model where predictors retain distinct contributions, minimizing risks of inflated standard errors and preserving reliability of coefficient estimates (Table 4).

3.15. Panel Regression Analysis

The study used the Panel least square estimation technique to analyse the effect of sustainability reporting on liquidity position; the result of the regression is presented in Table 5.

3.15.1. Model

H_0: Sustainability reporting does not have a significant effect on the liquidity position of listed entities in Nigeria.

$$ATR_{it} = \beta_0 + \beta_1 X ECM_{it} + \beta_2 X EVM_{it} + \beta_3 X SOC_{it} + \beta_4 X GOV_{it} + \varepsilon \quad (3)$$

Table 5. Panel Effect Regression for Model Three.

Variable	Fixed Effects	Random Effects
ECM	-2.761	-2.740
	(1.192)	(1.148)
	[0.021] **	[0.017] **
EVM	-1.334	-1.360
	(0.201)	(0.194)
	[<0.001] ***	[<0.001] ***
SOC	-0.424	-0.428
	(0.199)	(0.192)

	[0.034] **	[0.026] **
GOV	7.304 (1.213) [<0.001] ***	7.311 (1.169) [<0.001] ***
C	0.105 (0.173) [0.545]	0.109 (0.638) [0.864]
R-squared	0.969	0.655
Adjusted R-squared	0.966	0.653
F-statistic	387.721 [<0.001] ***	501.636 [<0.001] ***
Durbin-Watson Stat	2.545	2.368
Number of obs	1064	
Hausman Test	Chi-Sq. = 2.685 [0.612]	-
Cross-Section Dependence Tests	Pesaran CD = 2.845 [>0.05] **	

*Notes: ( ): Standard errors. [ ]: p-values. *** p < 0.01, ** p < 0.05, * p < 0.10. Dependent variable: Liquidity position (ATR). Source: Author's computation.*

The Model 3 examines the effect of sustainability reporting on the liquidity position of listed Nigerian firms. Hausman test results (Chi-Sq. = 2.685, p = 0.612) favour the random effects model, with Durbin-Watson statistics (2.545 fixed; 2.368 random) and Pesaran CD test (CD = 2.845, p > 0.05) indicating no autocorrelation or cross-sectional dependence. Economic disclosures (ECM) show a significant negative impact on liquidity (β = −2.740, p = 0.017), suggesting resource allocation toward growth over cash reserves. Environmental (EVM) and social disclosures (SOC) also reduce liquidity (β = −1.360, p < 0.001; β = −0.428, p = 0.026), possibly due to compliance and CSR costs.

Conversely, governance disclosures (GOV) exhibit a strong positive effect (β = 7.311, p < 0.001), implying that robust governance enhances liquidity through disciplined financial management. Overall, while environmental, economic, and social commitments may temporarily constrain liquidity, effective governance appears to mitigate such pressures, reinforcing financial stability.

3.15.2. Decision

The random effects model records an adjusted R^2 of 0.653, while the fixed effects model shows a higher 0.966, indicating stronger explanatory power when accounting for firm-specific factors. Both models have highly significant F-statistics (p<0.001), leading to rejection of the null hypothesis. Sustainability reporting significantly influences liquidity (ATR), with environmental and social initiatives reducing liquidity and governance enhancing it, underscoring the need to balance sustainability with liquidity management for long-term stability.

Model Three is therefore restated as follows:

$$ATR_{it} = 0.109 - [2.740 \text{ X } ECM_{it}] - [1.360 \text{ X } EVM_{it}] - [0.428 \text{ X } SOC_{it}] + [7.311 \text{ X } GOV_{it}] + \varepsilon \quad (4)$$

3.15.3. Further Diagnostic Test

Heteroskedasticity occurs when the variance of the residuals is not constant across observations, which can lead to inefficient estimates and invalid statistical inferences in regression analysis. The

diagnostic test results in Table 6 assess the presence of heteroskedasticity across the models using the F-statistic, its corresponding probability (Prob. F), and the observed R^2 values**.**

Table 6. Heteroskedasticity Results Table.

Model	F-statistic	Prob. F	Obs*R-squared
ATR	14.802	0.431	56.338

Source: Author's Computation (2024).

The heteroskedasticity test results for Liquidity Position (ATR) reveal no significant evidence of heteroskedasticity. For the model, the Prob. F values exceed conventional significance thresholds ($p > 0.05$), indicating that the null hypothesis of homoskedasticity cannot be rejected. Specifically, the ATR model records Prob. F = 0.431, confirming homoskedasticity and thereby enhancing the reliability of the regression estimates. This supports the validity of the statistical inferences drawn from the models, ensuring robust coefficient estimates and standard errors. Meeting this key linear regression assumption strengthens the overall credibility of the study's conclusions.

4. Discussion

This study examined the effect of sustainability reporting on the liquidity position of listed entities in Nigeria. The results obtained aligned with Buallay [4], who argued that economic disclosures often signal a firm's prioritization of operational efficiency over short-term liquidity preservation. In Nigeria's volatile macroeconomic environment—marked by inflationary pressures and currency fluctuations - firms may face a pronounced trade-off between liquidity and financial growth. Conversely, the finding diverges from Effiong et al. [20], who reported a positive relationship between economic disclosures and liquidity in more stable markets, underscoring the contextual sensitivity of this relationship.

Environmental disclosures show a significant negative impact on liquidity, supporting Reddy and Gordon [13], who found that compliance with environmental standards and sustainability investments can strain liquid resources. This contrasts with Mendi et al. [37], who identified a positive link between environmental disclosures and liquidity in developed economies, where supportive regulatory frameworks and incentives mitigate these financial pressures.

Social disclosures also exert a negative influence on liquidity, suggesting that expenditures on community engagement, employee welfare, and similar initiatives may constrain firms' liquid asset levels. This contrasts with Alhassan et al. [38], who found long-term liquidity benefits from social responsibility through enhanced stakeholder trust and operational efficiency.

Empirically, the study's findings are consistent with prior literature in some respects while diverging in others, reflecting the multifaceted and context-dependent effects of sustainability reporting on liquidity. The observed negative impacts of economic and environmental disclosures align with Buallay [4] and Reddy and Gordon [13], respectively, while Ogochukwu and Grace [5] support the positive role of governance disclosures. However, the negative association between social disclosures and liquidity contradicts Alhassan et al. [38], highlighting that the financial implications of social initiatives may vary significantly across different economic and institutional settings.

5. Conclusions

The study examined the effect of sustainability reporting on the liquidity position of listed entities in Nigeria. Using a quantitative approach, data were obtained from the annual reports of 76 listed companies over fourteen years (2010–2023). Sustainability reporting variables included economic, environmental, social, and governance disclosures, with liquidity measured by the Acid Test Ratio (ATR). Panel regression analysis, specifically the random effects model, was applied based on Hausman test results.

Findings reveal that economic disclosures negatively affected liquidity, suggesting that firms prioritizing financial transparency may channel resources toward long-term investments or debt repayment rather than maintaining liquid assets. Environmental disclosures also showed a negative relationship with liquidity, reflecting the high costs of proactive environmental measures, particularly in capital-intensive sectors like oil and gas.

Similarly, social disclosures had a negative impact, indicating that investments in CSR activities, such as community development and employee welfare, can constrain liquidity. In Nigeria, societal pressures to address poverty and unemployment intensify these demands, especially for firms with limited budgets.

In contrast, governance disclosures exhibited a strong positive association with liquidity, underscoring their role in promoting financial discipline, efficient resource allocation, and stakeholder confidence. However, in the Nigerian setting, weak regulatory enforcement and superficial compliance may limit these benefits to firms with genuine governance commitments.

The results partially align with stakeholder and legitimacy theories: while governance transparency supports financial stability, economic, environmental, and social initiatives impose short-term financial burdens.

Overall, the study highlights the trade-off between sustainability efforts and liquidity management in Nigeria. High sustainability costs, limited access to affordable financing, weak enforcement mechanisms, and heightened CSR expectations create an environment where genuine sustainability practices may disadvantage firms financially, necessitating a strategic balance between ethical responsibility and financial resilience.

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References

[1] Okwuosa I. I., & Adesina J. B. (2021). An examination of the quality of sustainability disclosure among listed firm in Nigeria. European journal of Business Research, 25, 15-46.

[2] Okoye, E. I., & Ndum, N. B. (2020). Effect of sustainability reporting on economic value added of manufacturing firms listed on Nigeria stock exchange. Journal of Economics, Management and Trade, 26, 15-33.

[3] Olabode, O. (2022). The principle of sustainability reporting and financial performance of selected firms in Nigeria, Gusau Journal of Accounting and Finance, 2, 15-22.

[4] Buallay, A. (2020). Sustainability reporting and firm's performance: comparative study between manufacturing and banking sectors, International Journal of Productivity and Performance Management, 69, 431-445.
[5] Ogochukwu, U., & Grace, O. (2022). Disclosure of sustainability reporting and their effect on shareholders wealth maximization of listed Nigerian Companies. Academy of Accounting and Financial Studies Journal, 26, 1-12.
[6] Onyeagoziri, O. J., Corrinne, S., & Tom, R. (2021). A system dynamics approach for understanding community resilience to disaster risk. Jamba, 13(1), 1037. https://doi.org/10.4102/jamba.v13i1.1037
[7] The Guardian Nigeria Newspaper (2018). Tanker outburst on Lagos-Ibadan expressway. Available at https://guardian.ng/tag/lagos-ibadan-expressway/
[8] PwC (2023). PwC Surveys Investors on Corporate Sustainability Reporting. Available at: https://sustainabilitymag.com/sustainability/pwc-surveys-investors-on-corporate-sustainability--reporting/
[9] Aondoakaa, K. (2015). Impact of sustainability reporting on financial performance of companies listed on the Nigeria stock exchange. PhD Thesis University of Nigeria Nsuka, 1, 1-56.
[10] Nwobu, O. (2015). The relationship between corporate sustainability reporting and profitability and shareholders fund in Nigerian banks. Journal of Accounting and Management, 5, 3-18.
[11] Puneeta, G., & Rupali, M. (2020). Does extent of sustainability reporting influence financial performance? Evidence from five Asian economies. International Journal of Environment, Workplace and Employment, 45, 234-562.
[12] Yaghoub, A. Xiaoni, L., & Xavier, C. (2020). Does GRI sustainability reporting pay off? An empirical investigation of publicly listed firms in China. Business and Society Journals, 24, 234-653.
[13] Reddy, N., & Gordon, K. (2022). The impact of sustainability reporting on financial performance: empirical study using listed firms. Journal of Asia Entrepreneurship and sustainability, 13, 123-168.
[14] Buallay, A. (2022). Sustainability reporting in food industry: an innovative tool for enhancing financial performance. British Food Journal, 6, 1939-1958.
[15] Busch, T., Bauer, R., & Orlitzky, M. (2021). Sustainable development and financial markets: Old paths and new avenues. Business & Society, 60(5), 1099-1130.
[16] Lahouel, B. B., Gaies, B., Zaied, Y. B., & Jahmane, A. (2019). Accounting for endogeneity and the dynamics of corporate social–corporate financial performance relationship. Journal of Cleaner Production, 230, 352–364.
[17] Laskar, N. (2019). Does sustainability reporting enhance firms' profitability? A study on selected companies from India and South Korea. Indian Journal of Corporate Governance, 12, 2-20.
[18] Amankwah, D. O., & Agyemang, O. O. (2020). The relationship between policy dividends and firms' performance on Ghana stock exchange. International Journal of accounting and Financial Research, 6, 378-397
[19] Adeniran, A. O., & Awe, G. T. (2025). Strategic analysis of Tata motors in the United Kingdom: recommendations for Nigeria market. Management Analytics and Social Insights, 2(2), 86-94. https://doi.org/10.22105/masi.v2i2.67
[20] Effiong, S. A., Oti, P. A., & Akpan, D. C. (2019). Triple bottom line reporting and shareholder's value in oil and gas marketing firms in Nigeria. Academy of Accounting and Financial studies Journal, 23, 1528-2635.
[21] Ndukwe, A. G. A. (2009). Corporate risk reporting practices and their determinants: A study of selected quoted firms in Nigeria. Nigeria Research Journal of Accountancy, 1, 54-202.
[22] Ezeokafor, F. C., & Amahalu, N. N. (2019). Effect of sustainability reporting on corporate performance of quoted oil and gas firms in Nigeria. Journal of Global Accounting, 6, 22-34.
[23] Akpan, D. C., & Emenyi, E. O. (2020). Effect of triple bottom line reporting on financial and operating performance: Implications for Nigeria oil and gas sector. FUO Quarterly Journal of Contemporary Research, 8, 64-95.
[24] Adeniran, A.O., & Olorunfemi, S. O. (2020). The essence of knowledge management in the air transportation sector. International Journal of Human Capital and Urban Management, 5(2), 175-186.
[25] Temitope, O. B.,and Godwin, E. O. (2021). Sustainability Reporting and Financial Performance of Nigerian Deposit Money Banks. Journal of Forensic Accounting & Fraud Investigation. Association of Forensic zAccounting Researchers, 6, 144-164.

[26] Korolo, E. O., & Korolo, A. S. (2023). Sustainability reporting and corporate financial performance of quoted telecommunication companies in Nigeria. Gusau International Journal of Management and Social Sciences, 6, 19-38.
[27] Okon, L. J, Philip, I. B., & Okpokpo, O. S. (2023). Sustainability reporting and financial performance. AKSU Journal of Administration and Corporate Governance (AKSUJACOG), 3, 1-44.
[28] Coelho, R., Jayantilal, S., & Ferreira, J. (2023). The impact of social responsibility on corporate financial performance: A systematic literature review. Corporate Social Responsibility and Environmental Management, 30, 1535–1560.
[29] Olabode, O. (2023). Sustainability reporting and financial performance of listed Manufacturing firms in Nigeria. Gusau Journal of Accounting and Finance, 3, 33-39.
[30] Ekwueme, C. (2011). Social responsibility accounting: an overview, in M.A. Mainoma (Ed.) Contemporary issues in accounting development, a publication of the Association of National Accountants of Nigeria (ANAN) MCPD 2011.
[31] Adeniran, A. O., Asifat, J. T., Familusi, O. B., & Folorunso, S. S. (2024). Critical analysis of research methods and misperceptions of statistical analysis. International Journal of Innovation in Management Economics and Social Sciences, 4(3), 29-50. https://doi.org/10.59615/ijimes.4.3.29
[32] KPMG (2022). Sustainability reporting survey: A Guide and a survey, Retrieved from www.kpmg.com on 22nd October, 2011.
[33] Zhang, Y., & Yang. Q. (2021). The impact of environmental management on firm economic performance: The mediating effect of green innovation and the moderating effect of environmental leadership. Journal of Cleaner Production, 292, 126-357.
[34] Adeniran, A. O., Stephens, M. S., & Akinsehinwa, F. O. (2020). Factor analysis of passengers' satisfaction at Murtala Muhammed Airport (MMA2). Aeronautics and Aerospace Open Access Journal, 4(1), 13–24. https://doi.org/10.15406/aaoaj.2020.04.00101
[35] Adeniran, A. O. (2019). Application of Likert scale's type and Cronbach's alpha analysis in an airport perception study. Scholar Journal of Applied Science Research, 2(4), 01-05.
[36] Adeniran, A., O., & Fakunle, O., S. (2025). Adoption of Likert-type scales for airline service quality assessment. Systemic Analytics, 3(1), 20-26.
[37] Mendi, E., Zohreh, H., Mozghan, S., & Hossein, M. (2024). Effect of sustainability reporting on financial performance. Interdisciplinary Journal of Management Studies, 17, 3-25.
[38] Alhassan, I., Islam, K. M. A., & Haque, M. S. (2021). Sustainability reporting and financial performance of listed industrial goods sector in Nigeria. International Journal of Accounting & Finance Review, 9, 46-56.

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