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Sustainability Reporting and Market Value of Deposit Money Banks in Nigeria

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Abstract
Sustainability reporting has emerged as a key component of corporate disclosure, providing stakeholders with non-financial information that complements traditional financial statements in assessing firm value and long-term viability. In the banking sector, increasing investor attention to environmental, social, and economic performance indicators reflects a broader shift toward integrating sustainability considerations into market valuation and investment decision-making processes. Sustainability reporting (SR) through environmental (ESM), social (SSM), and economic (EM) metrics has increasingly become one of the non-financial information sets that investors rely on in determining market value (MV) of firms. Indicators such as Tobin's Q(TBQ) is critical indicator of how investors can assess the performance, risk profile, and future prospects of deposit money banks. However, there is limited evidence on the differential effects of environmental, social, and economic metrics on market value within the Nigerian banking sector. This study to empirically examined whether sustainability disclosures by Nigerian deposit money banks are value-relevant and whether they translate into favorable market perceptions.

The Study adopted *ex post facto* research design. Cross-sectional observations of 13 banks and time series data of 10 years spanning from 2015 to 2024 was used to analyse the effect of SR on MV of Nigeria banks. Data were obtained from published financial statements and accounts of selected banks. The study adopted both descriptive and inferential (multiple regression) statistics to analyse the data at 5% level of significance.
Findings revealed that joint Sustainability Reporting metrics (environmental (ESM), social (SSM), and economic (EM) metrics have significant effect on market value TBQ (Adj. R^2 = 0.87, F(6,124) = 53.0 , P<0.05); Specifically, ESM has significant effect on market value (λ_1 = -0.007, t= 2.1927, P = 0.0304) SSM has insignificant effect on market value (λ_2 = -0.0005, t = -0.1089, P = 0.9134), EM has in significant effect on market value (λ_3 =0.0055, t = 1.1201, P = 0.2650)
The study concludes that environmental sustainability reporting has a negative and significant effect on Tobin's Q of Nigerian deposit money banks, while social and economic metrics, as well as bank size, are insignificant, and excessive liquidity reduces market valuation, highlighting -investors' preference for short-term profitability. It is therefore recommended that banks adopt cost-efficient environmental practices and strengthen sustainability disclosures by clearly linking social and governance initiatives to measurable financial benefits such as deposit growth and reduced non-performing loans to enhance investor confidence
Keywords: Sustainability reporting, environmental, social, economic, Tobin's Q, price-to-book ratio, return-on-equity, return-on-asset
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1.1 Introduction

Market value represents a critical indicator of how investors assess the performance, risk profile, and future prospects of commercial banks (Brealey et al., 2020). In efficient capital markets, market value is expected to reflect not only financial fundamentals but also non-financial information that signals long-term sustainability, ethical conduct, and resilience to emerging risks. However, in Nigeria, the market value of deposit money banks has exhibited noticeable volatility and inconsistency, often diverging from reported accounting performance. This raises concerns about the adequacy and relevance of information available to investors in pricing bank shares. One emerging source of such information is sustainability reporting, encompassing environmental, social, and economic metrics. Despite increased emphasis on sustainability disclosures by regulators and stakeholders, it remains unclear whether these disclosures meaningfully influence the market value of Nigerian

deposit money banks, thereby constituting a core problem that this study seeks to address (Nwaigwe et al., 2022; Udeme et al., 2024).

A major aspect of the problem lies in the persistent uncertainty surrounding the value relevance of sustainability reporting in Nigeria's banking sector. While sustainability disclosures are theoretically expected to enhance transparency, reduce information asymmetry, and improve investor confidence, empirical evidence from Nigeria remains inconclusive. Some banks invest substantial resources in reporting environmental, social, and economic activities, yet their market valuations do not always reflect these efforts. This disconnect raises questions about whether sustainability reporting is perceived by investors as credible, decision-useful, or merely symbolic. Emeka-Nwokeji and Osisioma (2019) argued that sustainability reporting in Nigeria often lacks depth and comparability, limiting its usefulness to market participants and weakening its potential impact on market value.

Environmental metrics constitute one of the most challenging dimensions of sustainability reporting for Nigerian deposit money banks. Although banks are not direct polluters, their lending and investment activities expose them to significant environmental risks through financed emissions and environmentally sensitive sectors. Nigerian banks increasingly disclose information on environmental policies, green financing, and internal environmental management practices. However, the problem is that these disclosures are often qualitative, fragmented, and weakly linked to measurable financial outcomes. As a result, investors may struggle to incorporate environmental information into valuation decisions, thereby diluting its effect on market value. Atanda et al. (2021) highlight that environmental disclosures in Nigerian firms are frequently inconsistent and lack standard benchmarks, making it difficult to assess their real economic implications.

Social metrics present another dimension of concern in the sustainability–market value relationship. Nigerian deposit money banks operate in a socio-economic environment characterized by high unemployment, financial exclusion, and income inequality. Consequently, banks increasingly report on social initiatives such as financial inclusion programs, employee welfare, community development, and customer protection. Despite the social importance of these initiatives, their translation into improved market value remains uncertain. Abiola et al. (2024) note that while social disclosures may enhance corporate reputation, investors in emerging markets like Nigeria often prioritize short-term financial returns over long-term social considerations. This creates a gap between extensive social reporting and observable improvements in market valuation, raising doubts about the economic relevance of social metrics in investment decisions.

The economic metric dimension of sustainability reporting also presents unresolved problems. Economic disclosures typically cover value creation and distribution, contributions to economic development, support for small and medium enterprises, and transparency in tax practices. In theory, such disclosures should signal financial stability and sustainable profitability, thereby enhancing market value. However, in Nigeria, economic sustainability reporting is often intertwined with mandatory financial disclosures, making it difficult for investors to distinguish between routine compliance and genuine sustainability-driven performance. Oboro and Onuorah (2022) observe that economic sustainability information in Nigerian corporate reports is frequently generic and backward-looking, limiting its usefulness in forecasting future value and influencing market prices.

Another critical problem relates to the inconsistency and lack of standardization in sustainability reporting practices among Nigerian deposit money banks. Although some banks adopt international frameworks such as the Global Reporting Initiative, others rely on internally developed reporting formats, resulting in significant variation in scope, quality, and depth of disclosures. This heterogeneity undermines comparability across banks and reduces investors' ability to benchmark sustainability performance effectively. Onoh et al. (2023) emphasize that the absence of uniform sustainability reporting standards in Nigeria weakens market confidence in disclosed information and may explain why sustainability reporting does not consistently translate into higher market value.

The Nigerian capital market itself poses structural challenges that complicate the sustainability–market value relationship. The market is characterized by relatively low liquidity, limited analyst coverage, and a high proportion of retail investors, many of whom may lack the expertise or incentives to incorporate sustainability information into valuation decisions. As a result, even when banks provide detailed sustainability disclosures, the market may not efficiently price this information. Uwhevwe-Togbolo et al. (2024) argued that weak market efficiency and limited ESG awareness among investors in Nigeria reduce the immediate impact of sustainability reporting on market value, creating a persistent gap between disclosure efforts and market outcomes.

A related problem is the credibility of sustainability reporting in Nigeria. In many cases, sustainability disclosures are unaudited and lack independent assurance, raising concerns about greenwashing and selective reporting. Investors may therefore discount sustainability information, perceiving it as public relations content

rather than a reliable indicator of long-term performance. Emeka-Nwokeji and Osisioma (2019) contend that without robust assurance mechanisms, sustainability reporting may fail to command investor trust and, consequently, may have little or no effect on market valuation. This credibility gap represents a significant obstacle to realizing the potential value relevance of sustainability disclosures in the Nigerian banking sector.

Empirical findings on sustainability reporting and market value in Nigeria are also characterized by methodological inconsistencies, further compounding the problem. Different studies employ varying proxies for market value, different sustainability indices, and different estimation techniques, leading to mixed and sometimes contradictory results. Nwaigwe et al. (2022) and Udeme et al. (2024) report that while some sustainability dimensions show positive associations with market value, others are insignificant or even negative, depending on model specification and sample period. This lack of consensus creates uncertainty for bank managers, investors, and regulators regarding the actual benefits of sustainability reporting.

In addition, there is limited evidence on the differential effects of environmental, social, and economic metrics on market value within the Nigerian banking sector. Many existing studies aggregate sustainability reporting into a single index, thereby masking the unique contributions and potential trade-offs among the three dimensions. Atanda et al. (2021) and Abiola et al. (2024) suggest that investors may respond differently to environmental, social, and economic disclosures, yet empirical research in Nigeria has not adequately disentangled these effects. This gap limits understanding of which sustainability dimensions are most value-relevant in the Nigerian context.

1.2 Objective of the Study

To examine the effect of sustainability reporting on market value of listed Deposit Money Banks in Nigeria?

1.3 Research Questions

What is the effect sustainability reporting metrics on market value of listed Deposit Money Banks in Nigeria?

2.0 Literature Review

2.1 Review of theoretical Literature

2.1.1 Stakeholder Theory: The theory posits that a firm's success depends on its ability to create value for a wide range of stakeholders rather than focusing exclusively on shareholders. According to Freeman (1984), stakeholders are any group or individual who can affect or be affected by the achievement of the firm's objectives. This framework shifts the corporate purpose from profit maximization to value creation and sustainability across economic, social, and environmental dimensions. By balancing these interests, firms are more likely to achieve long-term success and legitimacy (Donaldson & Preston, 1995).

2.1.2 Signaling Theory: Signaling Theory is one of the most significant frameworks in economics, finance, and organizational behavior for explaining how parties with unequal information communicate credibly. The theory was first propounded by Michael Spence (1973) in his landmark article Job Market Signaling, published in The Quarterly Journal of Economics. Spence developed the theory to address issues of information asymmetry, a situation where one party in a transaction possesses more or better information than the other.

2.2 Theoretical Framework

The stakeholder theory, proposed by Freeman (1984), provides a strong theoretical foundation for understanding the relationship between sustainability reporting and the market value of deposit money banks (DMBs). The theory argues that the long-term success and value of a firm depend on its ability to effectively manage relationships with its diverse stakeholders, including shareholders, employees, customers, regulators, and the broader community. In the context of DMBs, stakeholder theory suggests that sustainability reporting is not merely a compliance exercise but a strategic communication tool that enhances legitimacy, trust, and, ultimately, firm value. According to Freeman (1984), firms exist within a network of stakeholder relationships, and their decisions must consider both financial and non-financial expectations. In the banking sector, stakeholders demand ethical conduct, transparency, and responsible lending practices. Sustainability reporting which discloses a bank's environmental, social, and governance (ESG) activities serves as a mechanism to meet these expectations. Through sustainability reports, DMBs communicate their commitment to social responsibility, environmental stewardship, and good governance, thus enhancing their corporate reputation and attracting socially responsible investors (Donaldson & Preston, 1995).

2.3 Empirical Review

Cemil and Ali (2017) investigated whether sustainability reporting influences firm value among companies listed on Borsa Istanbul. Using data from 297 firms and adopting an ex post facto and descriptive design, the study relied on secondary data from annual and sustainability reports, with disclosure quality assessed using Global Reporting Initiative guidelines. Quantitative methods such as correlation and regression analysis, alongside qualitative content analysis, were employed. The findings showed increased adoption and improved quality of sustainability reporting, although external assurance remained limited**.** Emeka-Nwokeji and Osisioma (2019) examined the impact of sustainability disclosures on firm value in Nigeria, using Tobin's Q as a measure of market value. The study applied descriptive statistics, correlation, principal component analysis, and pooled OLS regression. The results showed that overall sustainability disclosure positively and significantly influenced firm value. At a disaggregated level, environmental and governance disclosures had significant positive effects, while social disclosures showed a negative but insignificant relationship with firm value Sadiq et al. (2020) examined the effect of environmental, social, and governance (ESG) practices and disclosures on firm value using 122 firms listed on Bursa Malaysia from 2011–2019. The study addressed endogeneity by employing instrumental variables such as CSR committee presence, earnings forecast dispersion, and ownership concentration, and applied a two-stage regression approach. The findings showed that ESG strengths positively influenced firm value, while ESG disclosure and ESG concerns had negative effects, suggesting that not all aspects of ESG reporting and performance enhance market valuation Nwaobia and Ihejieto (2020) investigated the link between sustainability reporting and financial performance of listed Deposit Money Banks in Nigeria using an ex post facto design and a purposive sample of 10 out of 13 banks. The findings showed that sustainability reporting had no significant direct effect on profitability, measured by Return on Assets. However, firm characteristics such as size and age significantly moderated the relationship, indicating that sustainability reporting becomes more impactful on financial performance when these factors are considered Okolie and Igaga (2020) examined how sustainability reporting affects the financial performance of Deposit Money Banks in Nigeria using ROA, ROE, and EPS as performance measures. The study analyzed 17 listed banks over the period 2012–2018, using data from audited financial statements and sustainability reports, and applied descriptive statistics and multiple regression analysis. The findings revealed a significant positive relationship between sustainability reporting and financial performance. The economic dimension had the strongest direct effect on profitability, while environmental and social disclosures contributed more to long-term value, brand reputation, and stakeholder trust Constantinescu et al. (2021) examined the relationship between ESG factors and firm value by evaluating companies from multiple stakeholder perspectives, including customers, employees, suppliers, government, and the community. Using two linear regression models, the study assessed how ESG disclosures influence firm valuation. The findings showed that ESG disclosure is significantly associated with firm value, with the relationship being either positive or negative depending on context. Overall, the study concluded that ESG information serves as an important non-financial signal that firms can use to attract investors and enhance market perception Thayaraj and Karunarathne (2021) assessed how economic, environmental, and social disclosures affect the financial performance of listed firms in Sri Lanka, while also comparing local reporting practices with global standards. The study found that sustainability disclosure levels among Sri Lankan firms were relatively low compared to international benchmarks, largely due to the voluntary nature of reporting. Many firms provided incomplete or qualitative disclosures, reflecting limited awareness and commitment, which constrained the potential impact of sustainability reporting on financial performance. Haider and Sohail (2021) examined the effect of sustainability reporting on the financial performance of firms listed on Tadawul, using Tobin's Q and regression analysis.The results showed that firm value (Tobin’s Q) was significantly influenced by leverage, earnings per share, and firm size. However, sustainability reporting itself had no significant impact on financial performance, indicating limited value relevance of SR among the sampled firms Okon et al. (2023) examined whether sustainability reporting improves financial performance among oil and gas firms in Nigeria using an ex post facto design and secondary data from annual reports and the Nigerian Exchange Group. The study applied Robust Panel Least Squares regression to test the effects of sustainability disclosure dimensions. The findings showed that social, health and safety, and environmental disclosures each had a significant positive impact on Return on Capital Employed. This indicates that firms with stronger sustainability practices and transparent disclosures achieved better capital efficiency, profitability, and long-term value, confirming the value-enhancing role of sustainability reporting in the Nigerian oil and gas sector Dincer et al. (2023) investigated the effect of sustainability reporting on firm performance using panel data regression (pooled OLS) for 46 companies listed on Borsa Istanbul over 2016–2020, with 920 firm-quarter observations. The study employed two performance measures: Tobin's Q and Return on Assets, alongside variables such as firm size, leverage, growth, and environmental impact level. The results showed that sustainability reporting had a significant positive effect on ROA, indicating improved profitability and operational efficiency. The study concluded that firms with stronger sustainability disclosures tend to achieve better short-term financial performance due to improved stakeholder trust, efficiency, and reputation Okafor (2023) examined how sustainability reporting affects the market value of

listed consumer goods firms in Nigeria, focusing on environmental, social, and economic disclosure dimensions. The study used 17 out of 21 firms listed on the Nigerian Exchange Group, applying an ex post facto design with secondary data from annual reports and sustainability disclosures. Content analysis and lagged regression were used to assess the relationship between disclosures and share prices. The findings showed that environmental and social disclosures had no significant impact on market value, suggesting limited investor sensitivity to these dimensions. However, economic disclosures had a significant positive effect on share prices, indicating that investors place greater value on financially oriented sustainability information such as profitability and economic contribution. Ali (2024) examined the effect of sustainability reporting on firm value among 60 environmentally sensitive firms in Nigeria, including oil and gas, manufacturing, construction, and industrial companies. Using an ex post facto panel design over 2018–2022 and multiple regression analysis in STATA, the study assessed the relationship between sustainability disclosures, profitability, and firm value. The results showed that sustainability reporting had a significant positive effect on firm value, indicating that more comprehensive disclosures are associated with higher market valuation. Profitability also had a positive effect and strengthened the relationship between sustainability reporting and firm value, suggesting that investors place greater trust in sustainability information when firms are financially strong Astuti (2024) examined the impact of sustainability report disclosure on the firm value of companies listed on the Indonesia Stock Exchange. The sample comprised 22 firms that participated in the Asia Sustainability Report Rating (ASRRAT) from 2018 to 2020. To analyze the data, multiple linear regression techniques were applied using SPSS 22, allowing the study to assess the relationship between sustainability reporting practices and firm valuation, proxied by Tobin's Q. The findings revealed that sustainability report disclosure did not have a statistically significant effect on firm value. Additionally, the results indicated that consecutive participation in ASRRAT over the observed period did not meaningfully influence firm value. These findings suggest that, for the sample examined, the mere disclosure of sustainability initiatives or repeated recognition in sustainability rankings may not directly translate into enhanced market valuation, highlighting the need for firms to couple sustainability reporting with strategic actions that create tangible financial and reputational benefits. Desai (2024) examined the impact of ESG disclosure on the firm value of 940 Indian-listed firms using cross-sectional regression analysis. Market-to-book value and Tobin's Q served as performance measures, while ESG disclosure was derived from annual reports. Results indicated that ESG disclosure positively influenced firm value, although the effect was weaker for carbon-sensitive firms. The findings highlighted the importance of ESG reporting for managers and policymakers and provided early evidence of its value impact in a rapidly growing economy Msomi et al. (2025) examined the impact of Environmental, Social, and Governance (ESG) disclosures on firm value among non-financial companies in South Africa using Tobin's Q as the performance measure. The study analyzed 642 firm-year observations from 2017–2022 and applied Fixed Effects, Random Effects, and GMM estimation techniques to address endogeneity concerns. The results showed that ESG disclosure had a significant positive relationship with firm value, indicating that markets reward transparency and sustainability practices. Firm size and liquidity also improved value, while leverage reduced it. Sectoral analysis further revealed that ESG disclosure increased value in non-manufacturing firms but had a negative effect in manufacturing firms due to concerns about compliance costs and operational implications. Naibaho and Shahab (2025) examined the effect of corporate governance and sustainability reporting on firm performance using 100 Fortune 500 firms in the industrials, materials, and energy sectors from 2019–2023. The study measured performance using Tobin's Q and Return on Assets, with sustainability reporting assessed through SDG disclosure and external assurance, and governance variables such as CEO duality, board size, and ownership structure. The results showed that ownership concentration had a positive effect on both performance measures. However, SDG disclosure negatively affected ROA but had no significant effect on Tobin's Q, while other governance variables and external assurance were not significant. Overall, the study highlighted mixed effects of sustainability reporting and identified ownership concentration as a key driver of firm performance.

3.0 METHODOLOGY

3.1 Research Design, Scope, Data and Sources

The study adopts an ex-post facto research design, relying on historical data to examine the relationship between sustainability reporting and firms' market value without manipulating variables. The population comprises all 14 deposit money banks operating in Nigeria as of December 31,2025, representing the entire sector under study.
A census sampling technique is employed, including all banks to ensure comprehensive coverage and enhance the validity and generalizability of the findings.
Data are obtained from published financial statements, utilizing both time series and cross-sectional data to analyze trends over time and variations across banks.

3.2 Model Specifications

Model to assess the effect of sustainability metrics on Tobin's Q of deposit money banks in Nigeria

$TBQit = \lambda_0 + \lambda_1 ESMit + \lambda_2 SSMit + \lambda_3 ESSMit + \lambda_4 SIZEit + \lambda_5 LIQit + \varepsilon it$…… (3.1)

Where;

TBQ = Tobin's Q

ESM= Environmental sustainability Metrics

SSM = Social sustainability Metrics

EM = Economic sustainability Metrics

SIZE = Bank size

LIQ = Liquidity

i = Identifier for the individual banks in the cross section

t = Regular time interval at which the variables will be considered

3.3 Descriptive Analysis

Table 4.1 below presents the results of the descriptive statistics detailing the characteristics of the dependent variables Tobin's Q (TBQ as well as the independent sustainability variables Environmental Metrics (ESM), Social Metrics (SSM), and Economic Metrics (GM). It also includes the descriptive properties of the control variables: Bank Size (LOGSIZE) and Liquidity (LIQ). The descriptive statistics provide profound insight into the central tendencies (Mean, Median), the degree of volatility (Standard Deviation), the distribution symmetry (Skewness, Kurtosis), and the normality of the data (Jarque-Bera) across the sampled commercial banks over the period of study.

Table 4.1: Descriptive Statistics of the Variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Jarque-Bera	Probability	Obs
TBQ	1.0082	0.9800	1.3500	0.9100	0.0788	85.2451	0.0000	130
ESM	2.5231	3.0000	3.0000	1.0000	0.6844	26.3797	0.0000	130
SSM	2.7308	3.0000	3.0000	1.0000	0.4788	52.1262	0.0000	130
EM	2.9077	3.0000	3.0000	2.0000	0.2906	362.7253	0.0000	130
LOGSIZE	7.9852	8.0964	10.4631	3.9512	1.2721	12.5260	0.0019	130
LIQ	49.8729	46.9000	123.0000	27.9400	16.9264	158.2017	0.0000	130

Source: Author's Computation from E-Views (2026).

Tobin's Q (TBQ), which serves as a primary forward-looking proxy for market value, recorded a mean value of 1.008. A Tobin's Q ratio marginally above 1.0 indicates that, on average, the capital market values Nigerian deposit money banks slightly higher than the replacement cost of their physical assets. This suggests that investors recognize some intangible value such as brand equity, risk management, and potentially sustainability practices within the sector. The values range from a minimum of 0.91 to a maximum of 1.35, revealing that while some banks trade at a discount (undervalued), top-tier institutions command a healthy market premium. The standard deviation is relatively low at 0.078, indicating that market perceptions, while varied, cluster closely around the mean. However, the Jarque-Bera probability of 0.0000 confirms the data is not normally distributed, reflecting market skewness toward a few highly valued banks.

The sustainability reporting indices; Environmental (ESM), Social (SSM), and Economic (EM) metrics were measured on a 0 to 3 disclosure score scale. The descriptive statistics reveal a very high level of compliance across the sector.

i. **Economic Metrics (GM)** recorded the highest mean score of 2.90, with a minimum score of 2.0. This indicates that almost all sampled banks have achieved near-perfect compliance with corporate governance disclosures.
ii. **Social Metrics (SM)** followed closely with a mean of 2.73, while Environmental Metrics (EM) had the lowest relative mean of 2.52.

The fact that the median for all three-sustainability metrics is exactly 3.0 suggests that maximum disclosure has become the industry norm, largely driven by mandatory guidelines such as the Nigerian Sustainable Banking Principles (NSBP) enforced by the Central Bank of Nigeria. Consequently, all three variables display negative skewness (e.g., GM skewness is -2.81), meaning the data is heavily concentrated at the top end of the scale with a "long tail" stretching toward lower scores. The Jarque-Bera probabilities for all sustainability metrics are 0.0000, confirming non-normality due to this heavy leftward skew.

Bank Size (LOGSIZE), representing the natural logarithm of total assets, has a mean value of 7.98. The minimum value of 3.95 compared to the maximum of 10.46 highlights the structural diversity within the sample, encompassing both massive systemically important banks and smaller regional entities. The standard deviation of 1.27 indicates moderate size variation.

Liquidity (LIQ) demonstrates a robust mean of 49.87%. This figure significantly exceeds the 30% statutory minimum liquidity ratio mandated by the Central Bank of Nigeria, suggesting that commercial banks operate with substantial buffers to shield against macroeconomic shocks. However, liquidity management strategies vary drastically, evidenced by a standard deviation of 16.92, a minimum ratio of 27.94% (briefly dipping below the regulatory threshold), and a highly conservative maximum of 123.0%. The Jarque-Bera probability (0.0000) confirms that the liquidity distribution across the 130 observations is non-normal.

4.0 Results and Discussion

4.1 Correlation Analysis Results

Table 4.2 below presents the Pearson Correlation Matrix, which evaluates the strength and direction of the linear relationships among the dependent variable (TBQ,) and the independent variables (ESM, SSM, EM), alongside the control variables (LOGSIZE, LIQ). This analysis is vital for identifying preliminary associations between sustainability reporting and market value, as well as detecting potential multicollinearity among the explanatory variables before proceeding to regression estimations.

Table 4.2: Correlation Matrix

Variable	TBQ	MBR	EM	SM	GM	LOGSIZE	LIQ
TBQ	1.000000						
EM	0.155227	0.160184	1.000000				
SM	0.079706	0.050610	0.764188	1.000000			
EM	0.134962	0.083193	0.634429	0.599995	1.000000		
LOGSIZE	-0.019504	-0.256950	0.544773	0.529879	0.418980	1.000000	
LIQ	0.188687	0.333606	0.186136	0.170544	0.088535	0.231941	1.000000

Source: Author's Computation from E-Views (2026).

The correlation matrix reveals positive, albeit generally weak, relationships between the sustainability reporting metrics (ESM, SSM, EM) and the market value proxies (TBQ and MBR).

i. Environmental Metrics (EM) exhibit a weak positive correlation with Tobin's Q (0.1552) and Market-to-Book Ratio (0.1601).
ii. Social Metrics (SM) show an even weaker positive relationship with TBQ (0.0797) and MBR (0.0506).
iii. Economic Metrics (EM) follow a similar pattern, correlating positively but weakly with TBQ (0.1349)

These preliminary findings suggest that while there is an associative link where higher sustainability disclosures align with marginally better market valuations; the strength of this linear relationship is not pronounced. This supports the theoretical assertion discussed in Chapter Two that in emerging markets like Nigeria, sustainability reporting often serves as a qualitative "signal" rather than a primary mathematical driver of stock price. Investors may acknowledge these disclosures, but they do not overwhelmingly base their valuation multipliers on them in isolation.

Regarding the independent variables themselves, a critical observation is the strong positive correlation between Environmental Metrics (ESM) and Social Metrics (SSM) at 0.7641. Economic Metrics (EM) also correlate strongly with ESM (0.6344) and SSM (0.5999). This high degree of collinearity is expected, as banks that adopt comprehensive sustainability frameworks typically report robustly across all ESG dimensions simultaneously. While correlations above 0.70 warrant caution regarding multicollinearity, the variables will be retained in the regression models to assess their distinct dimensional impacts, though Variance Inflation Factor (VIF) diagnostics may be necessary if standard errors appear inflated during estimation.

The control variable, Bank Size (LOGSIZE), presents an interesting dichotomy. It exhibits a negative correlation with both market value proxies: TBQ (-0.0195). This suggests that larger Nigerian banks tend to trade at lower valuation multiples relative to their massive asset bases, potentially reflecting a "size discount" due to perceived inefficiencies or systemic risks associated with managing massive portfolios. This confirms that larger banks are both more profitable and possess the institutional capacity to lead in comprehensive sustainability reporting.

4.2 Inferential Analysis Results

To ensure the statistical reliability of the estimates and to select the most appropriate econometric techniques, the inferential analysis begins with Pre-estimation diagnostics. This involves conducting Unit Root Tests to ascertain the stationarity properties of the panel data series, followed by Cointegration Tests to check for long-run equilibrium relationships among the non-stationary variables.

4.3 Unit Root Test

In panel data econometrics, running regressions on non-stationary variables can lead to spurious results where output shows high R-squared values and significant t-statistics, but the relationship is economically meaningless. To prevent this, the study employed the Levin, Lin & Chu (LLC) panel unit root test to determine the order of integration for each variable.

The tests were conducted primarily at the level, and where variables were found to be non-stationary, they were tested at the first difference. Table 4.3 below summarizes the test results based on the t-statistics and their corresponding probability values.

Table 4.3: Summary of Panel Unit Root Tests (Levin, Lin & Chu)

Variable	Level Statistic (Prob.)	1st Diff. Statistic (Prob.)	Order of Integration
TBQ	-8.59085 (0.0000)		I(0)
ESM	-3.48750 (0.0002)		I(0)
SSM	-2.93331 (0.0017)		I(0)
EM	-0.06289 (0.4749)	-3.45823 (0.0003)	I(1)
LOGSIZE	7.84783 (1.0000)	-5.14591 (0.0000)	I(1)
LIQ	-2.89166 (0.0019)		I(0)

Source: Author's Computation from E-Views (2026).

4.4 Probability of LLC Test Result in Parenthesis

The interpretation of the stationarity properties is strictly guided by the probability values presented in parentheses in Table 4.3. The Levin, Lin & Chu (LLC) panel unit root test assumes a common unit root process across cross-sections and operates on the null hypothesis that the series contains a unit root (i.e., it is non-stationary). The decision rule is to reject the null hypothesis if the probability value (p-value) is less than the 5% level of significance (0.05).

Applying this rule, the probability values for Tobin's Q (TBQ), Environmental Metrics (ESM), Social Metrics (SSM), and Liquidity (LIQ) at level are 0.0000, 0.0155, 0.0002, 0.0017, and 0.0019 respectively. Since these values are significantly below the 0.05 threshold, the null hypothesis of a unit root is rejected. This confirms that these variables are Stationary at Level, or Integrated of Order Zero I(0). Econometrically, this implies that the

data for market valuation and environmental/social disclosures are mean-reverting and stable, allowing them to be included in standard regression models (such as Fixed or Random Effects) without modification.

Economic Metrics (EM), and Bank Size (LOGSIZE) at level were 0.9994, 0.4966, 0.4749, and 1.0000 respectively. Since these values exceed 0.05, the study failed to reject the null hypothesis at level. However, upon taking the first difference, the probability values for these variables plummeted to 0.0000 or 0.0003, making them highly significant. Thus, these variables are confirmed as Integrated of Order One I(1).

4.5 Hausman Specification Test

To ensure the robustness of the econometric analysis and to select the most appropriate estimator for the panel data, the Hausman specification test was conducted as shown in table 4.4. This diagnostic test is critical in panel data analysis as it helps to differentiate between the Fixed Effects Model (FEM) and the Random Effects Model (REM). The decision is based on the correlation between the unique errors (unit effects) and the regressors. The null hypothesis of the test states that the Random Effects model is preferred (consistent), while the alternative hypothesis supports the Fixed Effects model.

Table 4.4: Summary of Specification Hausman Test Results

Model	Dependent Variable	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	Decision
Model 1	TBQ	49.652123	5	0.0000	Fixed Effects

Source: Author's Computation using E-Views (2026).

For the first model with Tobin's Q (TBQ) as the dependent variable, the Hausman test yielded a Chi-Square statistic of 49.652123 with a probability value of 0.0000. Since 0.0000 < 0.05, the null hypothesis is rejected at the 5% significance level. This indicates that the Fixed Effects Model (FEM) is the most appropriate estimator for analyzing the impact of sustainability reporting on Tobin's Q, as it effectively controls for unobserved bank-specific heterogeneity.

4.6 Panel Regression Results

This study examined the effect of sustainability reporting metrics on Tobin's Q (TBQ) of Deposit Money Banks in Nigeria. Tobin's Q serves as a forward-looking proxy for the market value and investor perception of the banks as shown in table 4.5. Based on the Hausman specification test results (Table 4.5), which yielded a Chi-Square statistic of 49.652123 and a probability value of 0.0000, the null hypothesis was rejected. Consequently, the Fixed Effects Model (FEM) was employed to estimate this relationship, as it effectively controls for unobserved, time-invariant heterogeneity among the individual banks. Table 4.6 below presents the regression results.

Table 4.5: Panel Regression Results for TBQ (Fixed Effects)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	1.108193	0.099554	11.13157	0.0000
ESM	-0.007891	0.003599	-2.192721	0.0304
SSM	-0.000548	0.005033	-0.108970	0.9134
EM	0.005537	0.004943	1.120177	0.2650
LOGSIZE	0.017169	0.046614	0.368318	0.7133
LIQ	-0.002177	0.000838	-2.596470	0.0107
R-squared	0.889439	Mean dependent var	1.025077	
Adjusted R-squared	0.872658	S.D. dependent var	0.092596	
F-statistic	53.00110	Durbin-Watson stat	1.803400	
Prob(F-statistic)	0.000000			

Source: Author's Computation using E-Views (2026).

The R-squared value of 0.889439 indicates that approximately 88.94% of the variations in Tobin's Q (TBQ) are explained by the independent variables (Environmental, Social, and Governance metrics) and the control variables (Bank Size and Liquidity), alongside the cross-sectional fixed effects. The Adjusted R-squared of 0.872658 further penalizes for the addition of variables, confirming an exceptionally strong explanatory power. The F-statistic of 53.00110 with a probability value of 0.000000 proves that the overall regression model is statistically highly significant at the 1% level. This signifies that the combined influence of the explanatory and control variables on the market value multiplier is econometrically valid.

Examining the specific sustainability metrics, the coefficient of Environmental Metrics (ESM) is -0.007891 with a probability value of 0.0304. Since 0.0304 is less than the 0.05 threshold, this result is statistically significant at the 5% level. The negative coefficient dictates an inverse relationship between environmental reporting and Tobin's Q. Specifically, a unit increase in environmental disclosure corresponds to a 0.0078 decrease in the market value multiplier, holding other factors constant. This finding suggests that, within the Nigerian capital market, the substantial capital expenditures required for stringent environmental compliance, green financing, and carbon footprint reduction are perceived by investors as a strain on immediate liquidity and shareholder value. Rather than awarding a premium, the market slightly penalizes these short-term financial outflows.

Conversely, Social Metrics (SM) and Economic Metrics (GM) recorded coefficients of -0.000548 and 0.005537, accompanied by probability values of 0.9134 and 0.2650, respectively. Since both probability values significantly exceed 0.05, their individual effects on Tobin's Q are not statistically significant. This indicates that standalone social and governance disclosures do not independently dictate the forward-looking market valuation of Nigerian deposit money banks. This lack of significance may stem from the fact that governance and social reporting have become standardized, boilerplate regulatory requirements rather than distinct competitive advantages that drive stock premiums.

Regarding the control variables, Bank Size (LOGSIZE) yielded a coefficient of 0.017169 with a probability of 0.7133, demonstrating that the total asset base of a bank does not have a statistically significant effect on its Tobin's Q ratio within this specific fixed-effects framework. However, Liquidity (LIQ) exhibits a negative coefficient of -0.002177 with a probability value of 0.0107, making it statistically significant at the 5% level. The inverse relationship suggests that banks holding excessively high liquid assets experience a slight penalty in their market valuation. Investors likely interpret uninvested excess liquidity as an inefficient allocation of resources, where the bank sacrifices high-yield credit opportunities in favor of overly conservative cash retention.

4.7 Discussion of Results

The first objective of this study sought to examine the effect of sustainability reporting metrics Environmental (ESM), Social (SSM), and Economic (EM) on Tobin's Q (TBQ) of deposit money banks in Nigeria. Tobin's Q represents the forward-looking market value, capturing investor expectations regarding the firm's future profitability and intangible asset value.

The empirical result from the Fixed Effects regression revealed that Environmental Metrics (ESM) have a negative and statistically significant relationship with Tobin's Q (Coefficient = -0.0078, $p < 0.05$). This finding implies that as Nigerian banks increase the quality and depth of their environmental disclosures and compliance, their market value multiplier experiences a marginal decline. Economically, this suggests that the capital market currently perceives the stringent capital expenditures required for environmental sustainability such as investments in green infrastructure, carbon footprint audits, and compliance with the Nigerian Sustainable Banking Principles as an immediate drain on cash flows. Rather than rewarding banks for environmental stewardship, investors in the Nigerian Exchange Group appear to penalize these short-term financial outflows, prioritizing immediate dividend yields over long-term ecological compliance.

This outcome presents a fascinating deviation from traditional Signaling Theory expectations. While Signaling Theory posits that voluntary sustainability disclosures reduce information asymmetry and attract premium valuations, this result indicates a "negative signal" effect. The market interprets heavy environmental expenditure as a signal of reduced short-term profitability. This empirical reality strongly contrasts with findings from developed markets where green premiums exist, but it provides quantitative validation to the observations of Uwuigbe et al. (2018), who noted the complex, often non-linear relationship between sustainability reporting and firm performance in the Nigerian banking sector due to high compliance costs.

Furthermore, the regression output indicated that both Social Metrics (SM) and Economic Metrics (EM) are statistically insignificant drivers of Tobin's Q ($p = 0.9134$ and $p = 0.2650$, respectively). The insignificance of

corporate governance disclosures implies that the capital market does not award a valuation premium for robust governance reporting. This is largely because strict corporate governance guidelines have been heavily mandated and enforced by the Central Bank of Nigeria (CBN) for over a decade. Consequently, high governance scores are viewed as a baseline regulatory expectation rather than a unique competitive advantage. Similarly, social disclosures often manifesting as routine corporate social responsibility (CSR) initiatives do not independently sway the forward-looking expectations of institutional investors assessing bank equity.

Regarding the control variables, the analysis revealed that Bank Size (LOGSIZE) does not significantly influence Tobin's Q in this specific model. However, Liquidity (LIQ) demonstrated a negative and statistically significant relationship (Coefficient = -0.0021, $p < 0.05$). This aligns with the "lazy bank" hypothesis within financial intermediation theory. It suggests that banks maintaining excessively high liquid asset buffers suffer a penalty in their market valuation. Investors rationally interpret overly high liquidity as operational inefficiency a scenario where bank management sacrifices high-yield credit creation and investment opportunities in favor of overly conservative, low-yield cash retention. Thus, the market discounts the forward-looking value of highly liquid but structurally cautious banks.

Ultimately, the findings of this study confirm that while sustainability reporting is a regulatory necessity, the Nigerian stock market currently prices environmental compliance as a cost center rather than a value driver, demanding that banks carefully balance ecological commitments with the relentless investor appetite for short-term financial returns.

5.1 Conclusion

The study concludes that environmental sustainability reporting exerts a negative and significant effect on Tobin's Q of Nigerian deposit money banks, indicating that investors currently perceive environmental compliance costs as reducing short-term profitability rather than enhancing firm value. In contrast, social and economic metrics, alongside bank size, show no significant influence, while excessive liquidity negatively affects market valuation, reinforcing the need for banks to balance sustainability commitments with efficient resource utilization and investor expectations

5.2 Recommendation

It is therefore recommended that bank management should focus on cost-efficient environmental practices that simultaneously reduce operational expenses such as digitalizing operations to cut paper waste and optimizing branch energy consumption thereby aligning ecological compliance with internal cost-saving mechanisms Disclosures should clearly articulate how social investments (like financial inclusion) directly expand the retail deposit base, or how governance frameworks actively reduce non-performing loan ratios

5.3 Suggestion for further studies

Future studies could extend this research by examining long-term effects of environmental sustainability reporting on firm value using dynamic panel models to capture lagged investor responses. Subsequent research may also explore sectoral comparisons across financial and non-financial industries to determine whether the negative perception of environmental compliance costs is unique to deposit money banks or more generalizable. Additionally, further studies could incorporate moderating variables such as corporate governance quality, regulatory intensity, and investor awareness to better explain variations in market valuation responses

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