



SUSTAINABILITY REPORTING AND THE VALUE OF QUOTED PHARMACEUTICAL COMPANIES IN NIGERIA

By

EDIAGBORUME, Edward Onayomake

Department of Accounting, Faculty of Management Sciences, Delta State University, Abraka, Nigeria



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Abstract

This study examined the relationship between sustainability reporting and firm value among listed pharmaceutical companies in Nigeria, utilizing panel data spanning from 2010 to 2023. The independent variables are economic, social, and environmental reporting. Data were extracted from annual financial statements of seven publicly traded pharmaceutical firms included in the study. The collected data underwent several statistical analyses. The findings indicate that economic sustainability reporting has a significant and positive impact on firm value, with a p-value of 0.0000, which is below the 0.05 threshold. In contrast, environmental sustainability reporting showed a positive but statistically insignificant effect, with a p-value of 0.2210. Social sustainability reporting, however, also demonstrated a positive and statistically significant influence on firm value, with a p-value of 0.0360. Hence, the study recommends that pharmaceutical firms strengthen their economic sustainability practices, as they have a demonstrable effect on enhancing firm value, potentially attracting investors and improving market performance. Given the lack of statistical significance found in the relationship between environmental sustainability efforts and firm value, stakeholders should be cautious about relying solely on environmental factors when assessing the investment potential of listed pharmaceutical firms.

Keywords: Sustainability Reporting, Firm Value, Economic Sustainability, Tobin's Q, Sustainable Development.

1.0 Introduction

As the need for businesses to conduct themselves responsibly and honestly grows, sustainability reporting has emerged as a key component of corporate governance globally. Companies have been directed in including social, environmental, and economic elements into their reporting by the Global Reporting Initiative (GRI) and other international frameworks. However, the use of sustainability reporting is still relatively new in developing nations like Nigeria, especially in non-financial industries. Given the growing significance of the Sustainable Development Goals (SDGs), Nigerian pharmaceutical companies which are essential to the nation's healthcare system are being urged more and more to adopt sustainability reporting.

Even with the growing support, there is still a great deal to learn about how sustainability reporting directly affects company value, especially in the pharmaceutical sector. Although banking institutions in Nigeria have demonstrated a favorable correlation between sustainability disclosures and

business value, there is currently a dearth of evidence from other industries, according to a study by Abubakar, Jacob, and Alhassan (2023). Additionally, less than 30% of businesses in non-financial industries make thorough sustainability disclosures, according to KPMG's 2022 study on sustainability reporting in Nigeria. This suggests that there is room for more research in this field.

The significance of sustainability reporting in the Nigerian pharmaceutical sector is highlighted by its capacity to draw in investment and boost operational effectiveness. Companies with good sustainability policies typically have better market valuations because of enhanced investor trust, especially in emerging nations, according to research by Sadiq and Uwadiah (2023). It hasn't been fully examined, nevertheless, to what degree these findings apply to pharmaceutical businesses in Nigeria.

By investigating the relationship between sustainability reporting which includes social, environmental, and economic aspects and the firm value of pharmaceutical businesses listed in Nigeria, this study seeks to close this information gap.



Pharmaceutical firms need excellent governance in addition to the three sustainability reporting pillars mentioned above to make sure that their corporate strategy takes into account the social and environmental concerns of present and future stakeholders. Sustainability Reporting, then, refers to the identification and integration of such social and environmental elements into pharmaceutical businesses' strategic operations and governance. Investors and stakeholders will have a better knowledge of how sustainability initiatives contribute to enhanced business performance and value generation in the Nigerian pharmaceutical industry according to the study's findings.

1.2. Statement of the Research Problem

Businesses, especially those in Nigeria's pharmaceutical industry, are under pressure to integrate sustainability principles into their operations as a result of the increased attention on sustainability in recent years on a worldwide scale. The degree to which sustainability reporting influences the value of pharmaceutical businesses listed in Nigeria, however, is not well supported by empirical data. Shareholders and stakeholders in Nigeria's pharmaceutical industry are very interested in quoted companies and their financial performances. The question of whether sustainability reporting, in all of its economic, environmental, and social facets, has a noticeable effect on the value of quoted pharmaceutical companies in Nigeria emerges as sustainability reporting becomes more and more crucial for preserving a company's competitive edge and investor confidence. There is a lack of knowledge regarding how sustainability reporting impacts the value of quoted pharmaceutical companies in Nigeria, despite research on relationship between sustainability practices and business performance in other industries and geographical areas. Stakeholders find it challenging to assess if sustainability initiatives contribute to pharmaceutical companies' valuation or are essentially token gestures for agreement-making due to the dearth of sector-specific research. By examining the ways in which the economic, environmental, and social aspects of sustainability reporting impact the value of listed pharmaceutical companies in Nigeria, this study aims to close this gap. By doing this, the study will provide insight into how sustainability initiatives might improve the financial performance of businesses in this crucial area of the Nigerian economy.

1.3. Research Objectives

The main aim of this study, is to investigate the effect of sustainability reporting on the firm value of quoted pharmaceutical companies in Nigeria. The specific objectives of this study include:

- i. To investigate how much economic sustainability reporting(ECN) influences the firm value of pharmaceutical businesses that are quoted.
- ii. To ascertain how much environmental sustainability reporting(ENV) influences the firm value of pharmaceutical businesses that are quoted in Nigeria;

- iii. To assess how much social sustainability reporting(SOC) influences the firm value of pharmaceutical companies that are quoted in Nigeria.

2.0 REVIEW OF RELATED LITERATURE

2.1 Conceptual review

2.1.2. Concept of Corporate Sustainability Reporting (SR)

According to its etymology, corporate sustainability reporting (SR) is comparable to corporate social responsibility and triple-bottom-line reporting. To distinguish Corporate Sustainability Reporting from its sibling term, Corporate Social Responsibility (CSR), we will continue to use SR as the acronym for this study. Sustainability reporting, according to Dustin (2024), gives businesses a way to reveal their effects on the environment and society, encouraging accountability and empowering stakeholders to make wise decisions. Therefore, corporate sustainability reporting is the process by which businesses tell stakeholders about their economic, social, and environmental performance. By incorporating non-financial data that clarifies how business operations impact the economy, society, and environment, it goes beyond conventional financial reporting. Organizations can tell stakeholders about their sustainability initiatives and results while exhibiting accountability and transparency in their operations through sustainability reporting.

Additionally, as stakeholders like investors, regulators, consumers, and the general public demand greater corporate accountability, sustainability reporting has grown in significance. Businesses can increase stakeholder trust, improve their reputation, and promote long-term company sustainability by sharing sustainability-related information. Environmental preservation, worker welfare, community involvement, and moral governance are some of the topics that sustainability reports frequently address. Many organizations adhere to globally recognized frameworks, like the Global Reporting Initiative, the Sustainability Accounting Standards Board, and the International Sustainability Standards Board, which offer guidelines for measuring and reporting sustainability performance, in order to guarantee consistency and comparability in reporting.

Through these frameworks, Corporate Sustainability Reporting serves as a strategic tool that helps organizations integrate sustainability considerations into their decision-making processes while promoting transparency and responsible business practices.

2.1.3. Dimensions of Sustainability Reporting

2.1.3.1. Economic Dimension of Sustainability Reporting (SR)

This aspect of sustainability reporting focuses on achieving sustainable economic development by making efficient use of resources and capital, meeting people's basic needs and requirements, raising living standards by increasing the profits from goods and services, and achieving economic justice (Godard, 2010). The economic concept of sustainability also

highlights how crucial it is to strike a balance between a country's or an organization's present financial requirements and the needs and welfare of future generations. Community investments, financial implication, detailed plan obligations, climate risks and government financial aid are just a few of the topics covered by the economic dimension of SR (economic performance index). The economic dimension therefore emphasizes how organizations generate and distribute economic value while ensuring that their activities contribute positively to long-term economic stability and development.

Furthermore, the economic dimension of sustainability reporting evaluates the extent to which corporate activities influence the economic well-being of stakeholders such as employees, investors, governments, and local communities. It includes disclosures relating to revenue generation, operational costs, employee wages, taxes paid to government, investments in infrastructure, and financial assistance received from public institutions. Frameworks such as the Global Reporting Initiative also emphasize economic performance indicators that help organizations measure their contributions to economic growth and societal prosperity. By reporting on these indicators, organizations demonstrate transparency in their financial impacts while aligning their operations with sustainable economic development goals.

2.1.3.2. Environmental Dimension of Sustainability Reporting (SR)

This aspect of SR provides biological populations with protection (land, air, and water), conservation of important resources, access to limitless resources, and an increase in their ability to adjust to events and environmental shifts (Dembo, 2017). Activities related to environmental sustainability concentrate on how emissions, waste, hazardous materials, and resource use affect the physical environment. This pillar highlights how the environment can sustain a certain standard of environmental quality. Fuel consumption, energy reduction, green finance, greenhouse emissions, suppliers' environmental risk, and clients' environmental risk are only a few of the topics covered by the environmental components of SR (environmental performance index). The environmental dimension therefore focuses on how organizational operations influence natural ecosystems and the measures taken by companies to minimize negative environmental impacts.

Furthermore, the environmental dimension of sustainability reporting emphasizes responsible environmental management and the adoption of sustainable practices that help reduce environmental degradation. Organizations disclose information on their environmental policies, environmental risk management, waste management practices, energy efficiency, and initiatives aimed at reducing carbon emissions. By reporting these environmental indicators, companies demonstrate their commitment to environmental stewardship, resource conservation, and the promotion of sustainable environmental practices.

2.1.3.3. Social Dimension of Sustainability Reporting (SR)

The social dimension of social responsibility (SR) within the pharmaceutical sector focuses on how the operations of pharmaceutical firms and their stakeholders affect societal factors such as social justice, equality, human and labor rights, and cultural tolerance. Furthermore, the Social Dimension of SR guarantees that pharmaceutical companies closely monitor their suppliers to prevent their involvement in human rights abuses and child labor. The social responsibility factor encompasses a wide range of topics, including but not limited to local community development initiatives, diversity in governance, health and safety, and employee benefits. Additional factors include anti-corruption policies, and possible adverse effects on society along the supply chain. The social dimension therefore emphasizes how organizations manage relationships with employees, communities, customers, and other stakeholders while ensuring that their operations promote social well-being and ethical standards.

Furthermore, the social dimension of sustainability reporting assesses the impact of corporate activities on people and communities. It involves disclosures on issues such as employee welfare, workplace safety, labor relations, human rights protection, and corporate contributions to community development. Companies are also expected to report policies and practices that promote diversity, inclusion, equal opportunities, and ethical conduct within their operations and supply chains. By reporting these social indicators, organizations demonstrate accountability, strengthen stakeholder relationships, and contribute to sustainable social development.

2.2.0 Theoretical Underpinning

This study was anchored on two theories namely: Stakeholder theory and Signaling theory

2.2.1 Stakeholder Theory

Stakeholder theory, proposed by Freeman (1984), challenges the shareholder-focused view by emphasizing that firms should consider broader stakeholder interests. Stakeholder theory argues that a firm should not operate solely for the benefit of its shareholders but should also consider the interests of other groups that are affected by its activities. According to Freeman, stakeholders include employees, customers, suppliers, investors, government, and the local communities in which the firm operates. These groups play important roles in the success and sustainability of organizations, and their interests must be considered in corporate decision-making.

The fundamental assumption of stakeholder theory is that organizations are accountable to a broad range of stakeholders whose support is necessary for the survival and long-term success of the firm. The theory assumes that firms create value by effectively managing relationships with these stakeholders rather than focusing exclusively on financial returns to shareholders. It further assumes that corporate managers have a responsibility to balance the competing interests of different stakeholder groups while ensuring that

business operations are conducted in an ethical, transparent, and socially responsible manner. As a result, organizations are expected to disclose relevant information about their activities, including social, environmental, and economic impacts, to enable stakeholders to evaluate their performance and make informed decisions.

Stakeholder theory is particularly relevant to this study because sustainability reporting provides a mechanism through which companies communicate their economic, environmental, and social performance to stakeholders. By disclosing sustainability information, firms demonstrate accountability and transparency, which can strengthen stakeholders' confidence and improve corporate reputation. In the context of quoted pharmaceutical companies in Nigeria, sustainability reporting helps investors, regulators, and the public assess how responsibly these companies operate and how their activities contribute to societal well-being. Consequently, effective sustainability reporting may influence stakeholders' perceptions and investment decisions, thereby affecting the overall firm value of the companies.

2.2.2 Signaling Theory

Signaling theory, first introduced by Spence (1973), helps us understand how companies communicate important but hidden information to the outside world. Often, investors and stakeholders cannot directly see how well a company manages social, environmental, or governance responsibilities. Sustainability reports act as a signal, showing that a company is responsible, forward thinking, and committed to long-term success (Connelly et al., 2011). In the context of Nigerian pharmaceutical companies, these reports send a clear message to investors: the company cares about ethical practices, patient safety, and environmental responsibility. By sharing this information openly, companies can build trust, stand out from competitors, and potentially increase their market value. Signaling theory fits this study perfectly because it explains how and why sustainability reporting can influence investors' perception and, ultimately, the firm's value.

2.2.3 Theoretical Linkage between Sustainability Reporting and Firm Value

Stakeholder theory links to the study by explaining that Nigerian pharmaceutical companies report on sustainability to meet the expectations of key stakeholders like investors, regulators, and patients. Signaling theory complements this by showing that such reports act as credible signals to the market, enhancing investor confidence and potentially increasing firm value. Together, they explain why companies report and how it affects their market performance

2.3. Empirical Review

Alamoudi (2025) investigated the impact of sustainability reporting on firm value using panel data from publicly listed firms in BRICS countries between 2017 and 2022. Firm value was proxied by Tobin's Q and price-to-book ratio, while sustainability reporting was measured through ESG disclosure scores. Using fixed and random effects regression techniques, the study found that sustainability reporting positively and

significantly influences firm value, particularly through social performance disclosures.

Nnedu (2025) conducted a systematic review of empirical studies on sustainability reporting and firm performance covering the period 2018–2024. The review synthesized findings from 65 studies across multiple continents, showing that greater sustainability disclosure is generally associated with improved firm value, enhanced market performance, and increased investor confidence. The study emphasized that firm value benefits are strongest where environmental and social disclosures are comprehensive and comparable across firms.

Munir and Pratama (2025) explored the influence of environmental performance disclosure on firm value among 120 firms in Southeast Asia for the period 2019–2023. Firm value indices included price-to-book ratio and Tobin's Q, and environmental disclosure was measured via content analysis of sustainability reports. The study found a positive and significant association between environmental disclosure and firm value, suggesting that investors reward firms that demonstrate strong environmental responsibility.

Atanda, Busari, and Kola (2024) examined the effect of ESG sustainability reporting on firm market performance for 50 companies listed on the Nigerian Exchange Group from 2019 to 2023. Firm value was proxied by share price and Tobin's Q, while ESG reporting was measured using GRI-aligned scores. Regression analysis showed that sustainability reporting positively influenced market performance, but the impact varied by disclosure dimension, with social disclosure exhibiting the strongest effect.

Suhartini, Dewi, and Wijaya (2024) examined the relationship between sustainability reporting, corporate governance, and firm value for 150 manufacturing firms listed on the Indonesia Stock Exchange from 2018 to 2022. Firm value was proxied by Tobin's Q and ROA, and sustainability reporting was assessed using ESG disclosure indicators. Results from hierarchical regression revealed that sustainability reporting alone was not significant, but when combined with strong corporate governance, the positive effect on firm value was strengthened.

Igbinovia and Agbadua (2023) investigated the effect of ESG reporting on the firm value of manufacturing firms in Nigeria between 2017 and 2021. Firm value was measured by Tobin's Q and market value of equity, while ESG reporting scores were derived from annual sustainability disclosures. The results indicated that ESG reporting did not directly influence firm value unless moderated by competitive advantage, implying that reporting effectiveness depends on internal firm dynamics.

Qamruzzaman, Md., Jahan, and Karim (2021) assessed voluntary disclosure on firm value using a panel regression model applied to 26 manufacturing firms in Bangladesh between 2017 and 2019. Firm value was proxied by earnings per share (EPS), market value of assets (MVA), and Tobin's Q, while voluntary disclosure was measured through indicators such as corporate governance reports, CSR

disclosures, and financial transparency. The findings revealed that voluntary disclosure has varying impacts on firm value depending on the disclosure content and context.

Cuong, Thi, Nga, and Hong (2021) examined sustainability practices on financial performances using data from 116 listed companies in Sweden for the year 2019. Financial performance was measured using Tobin's Q, ROE, ROCE, and EY, while sustainability performance was assessed using CSR disclosure. Using E-Views 11, the study found that sustainability practices positively and significantly influence financial performance across all indicators.

Dzomonda and Olawale (2021) explored relationship between water sustainability and financial performances. Using panel regression, financial performance was proxied by market-based metrics, while water sustainability was measured through metrics such as recycled water, rainwater harvested, and reduction in water use.

Ifada, Indriastuti, Ibrani, and Setiawanta (2021) evaluated the influence of financial performances on environmental performances and disclosure among firms listed on the Indonesia Stock Exchange between 2017 and 2019. Environmental performances and independent commissioners were used as regressors, while firm size and financial performance served as regressands. The findings indicate that both environmental performances and firm size positively affect financial performances and, subsequently, enhance environmental disclosure.

Abdul and Maha (2021) analyzed the determinants of environmental, social, and governance (ESG) disclosure across Asian publicly listed firms from 2005 to 2017, using a cross-sectional model. ESG scores were the dependent variable, while profitability, firm size, leverage, and Tobin's Q were used as explanatory variables. The findings revealed that firm characteristics, including economic performance and size, significantly and positively influence ESG disclosure.

Muafi, Fitri, and Faizaty (2020) investigated the role of corporate governance in social and environmental responsibility disclosure among 42 Indonesian state-owned enterprises using path analysis. Government involvement, organizational commitment, and media exposure were treated as regressors, with CSR disclosure as the outcome variable. The results showed that these governance elements have a direct effect on improving CSR and environmental responsibility disclosures.

Aifuwa and Hope (2020) assessed the effect of sustainability reporting on firm performance in developing economies between 2014 and 2019. Using content analysis, financial performance was measured via profitability (ROA, ROE) and earnings per share (EPS), while sustainability disclosure was assessed using the GRI framework. The study found that sustainability reporting has a significant and positive impact on firm performance.

Buallay (2020) explored how national sustainability reporting laws moderate sustainability disclosure and firm performance across 3,000 firms in 80 countries from 2008 to 2017. Firm

performance was measured through ROA, ROE, and Tobin's Q, and sustainability disclosure was based on ESG dimensions. Result disclosed a negative relationship between sustainability disclosure and operational performance (ROA), suggesting that regulation alone may not enhance firm efficiency.

Girón, Amirreza, Antonella, and Eva (2020) using data from the Global Reporting Initiative and Orbis, this study analyzed 366 companies from Asia and Africa to explore how sustainability reporting affects economic performance. Firm performance was assessed via profit margins, leverage, and Tobin's Q, while sustainability reporting was measured through SDG alignment, external assurance, and disclosure levels. Results indicated a significant positive association between sustainability reporting and economic performances indicators.

2.4. Gap in literature

Despite the increasing importance of sustainability reporting globally, there is a notable lack of empirical research examining its impact on firm value within the Nigerian pharmaceutical sector. Most existing studies focus on financial institutions or general non-financial industries and their findings were mostly positive, negative and mixed, leaving a significant gap in understanding how economic, environmental, and social disclosures specifically influence the performance of pharmaceutical companies.

By demonstrating the connection between sustainability reporting and company value in the Nigerian pharmaceutical business, this study seeks to close this knowledge gap and offer useful information to stakeholders as well as to the scholarly community.

3.0 Methodology

This study adopted an *ex post facto* research design. This design was selected because the variables involved are secondary, verifiable, non-manipulative, and have already occurred in the past. The population consists of all seven (7) pharmaceutical firms listed on Exchange Group in Nigeria(NGX) as of December 31, 2023. Due to the small size of the population, a **census approach** was adopted, including all seven firms in the sample.

Secondary data were utilized for the analysis. The data were extracted from the annual reports of the seven quoted pharmaceutical companies within the specified timeframe.

3.1 Model Specification

To meet the study objectives, the model specified in Equation 1 is adapted from the work of Asuquo, Dada, and Onyeogaziri (2018). However, unlike their study which focused on manufacturing firms in Nigeria, this research centers on pharmaceutical companies. Furthermore, this study incorporates **Tobin's Q as the dependent variable**, serving as a proxy for firm value.

The model for this study is specify as:

$$T.Q = f(ECN, ENV, SOC,) \text{-----}$$

$$\text{-----}(3.1)$$

Their model was re-stated as: Tobin's $Q = \beta_0 + \beta_1 ECN_{it} + \beta_2 ENV_{it} + \beta_3 SOC_{it} + \mu_{it}$ (3.2)

Where:

T.Q = Tobin's Q

ECN = Economic sustainability reporting

ENV = Environmental sustainability reporting

SOC = Social Sustainability reporting

β_0 = Constant Value

$\beta_1, \beta_2, \beta_3$ = Parameter Estimates

μ_{it} = is the error term

3.2. Measurement of the Study Variables

Table 3.1 below shows how the variables of interest were operationalized:

Table 3.1: Operationalization of Study Variables

S/N	Variable	Acronyms	Variable types	Measurement	Sources	Indicators	Apriori Expectations
1	Tobin's Q	T.Q	Regress	(EMV+D)/EBV Where: EMV = value of market equity (EMV = closed price x outstanding share) D = Book value for liabilities EBV = Equity book value	Clarissa, and Rasmini, (2018).		Nil
2	Economic sustainability reporting	ECN	Regressor	$ECN = \sum_{i=1}^N xi$ Where: xi = number of indicator items disclosed. N = disclosed indicators item.	Clarissa, and Rasmini, (2018).	Operating capacity, solvency, and Ability to resist risks. If a firm reports any of the listed items, it scores 1 otherwise, 0	Positive
3	Environmental sustainability reporting	ENV	Regressor	$ENV = \sum_{i=1}^N xi$ Where: xi = number of indicator items disclosed. N = disclosed indicators item.	Clarissa, and Rasmini, (2018).	Vitality Carbon emissions from water Management of waste Stewardship of products and services in compliance biodiversity. If a company reports on any of the mentioned items, it scores a value of 1 otherwise, 0	Positive
4	Social sustainability reporting	SOC	Regressor	$SOC = \sum_{i=1}^N xi$ Where: xi = number of indicator items disclosed. N = disclosed indicators item.	Clarissa, and Rasmini, (2018).	Employment of minorities, a number of lawsuits filed by employees, Customers; and regulatory agencies. If a firm report on any of the listed	Positive

						items, it is assigned a value of 1 otherwise, 0.	
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Source: Authors Computation (2025)

3.3 Method of Data Analysis

The study used panel data methodology for its efficiency and ability to handle both time series and cross-sectional data. The Hausman test determined the suitable model: if $p > 0.05$, the REM is preferred; if $p < 0.05$, the FEM is chosen. Diagnostic tests including descriptive statistics, VIF for multicollinearity, and Ramsey RESET test for model specification were performed using EViews 9.0.

4.0. Data Analysis

4.1.0. Analysis of Descriptive Statistics on sustainability reporting and performance.

Table 4.1: Summary of Descriptive Statistics

	T.Q	ECN	ENV	SOC
Mean	0.240760	0.588462	0.620876	0.586923
Median	0.021000	0.750000	0.714300	0.600000
Maximum	4.907200	1.000000	0.857100	0.800000
Minimum	0.105500	0.000000	0.142900	0.200000
Std. Dev.	1.319749	0.194053	0.171261	0.162533
Observations	98	98	98	98

Source: Authors Computation using Eview, (2025)

Table 4.1 presents the descriptive statistics for Tobin’s Q (T.Q), Economic (ECN), Environmental (ENV), and Social (SOC) reporting based on 98 observations. Tobin’s Q shows a low mean (0.240760) and a relatively high standard deviation (1.319749), indicating substantial variability in firm performance across the sampled firms. Furthermore, environmental reporting, disclosed a min. and max. values of 0.1429 and 0.8571, respectively. However, given its standard deviation (0.171261) is less than its mean value (0.620876), indicates that there exist a low variability in the data suggesting a consistent pattern in environmental reporting across the sample. Again social sustainability reporting range from 0.2000 to 0.8000 as its min. and max. values. The result reported a mean and a standard deviation values for social sustainability reporting as 0.586923 and 0.162533 respectively implying that the data is closely centered around the average, reflecting a homogeneous distribution. For economic sustainability reporting, the values range from 0.0000 to 1.0000. The average is calculated at 0.588462, with a S.D of 0.194053. As the S.D is less than the mean, this also suggests that the data points are not widely spread, reinforcing the conclusion that the variable exhibits homogeneity. Overall, while sustainability disclosures appear fairly stable, firm performance varies considerably among firms.

Normality test

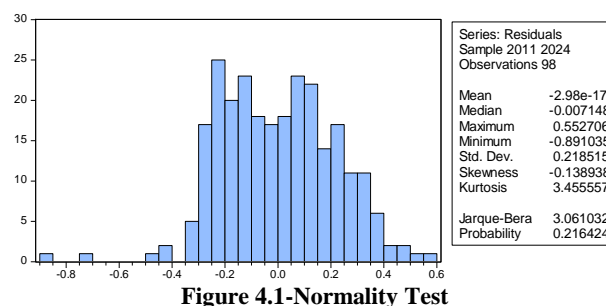


Figure 4.1-Normality Test

Source: Econometric Views Version 9.0 Output (2025)

Figure 4.5 above accounts for the normality test result. Evidently, the normality reported a Jarque-Bera value of 3.061032 with an associated p-value of 0.216424 signals that the series are normally distributed. As such, the study concludes that the model is feasible for policy formulation since it passed on the test of normality.

4.4 Analysis of correlation matrix on determinants of sustainability reporting and firm value

Table 4.2 Correlation matrix

	T.Q	ECN	ENV	SOC
T.Q	1.000000			
ECN	0.055165	1.000000		
ENV	-0.014448	-0.065971	1.000000	
SOC	0.110006	0.145275	-0.032277	1.000000

Source: Authors Computation using Eview, (2025)

From table 4.2 correlation result, it is shown that economic and social sustainability reporting disclose a coefficient values of 0.055165 and 0.110006, respectively. These coefficient values implies that there exist a weak and positive correlation between both sustainability reporting and Tobin's Q. however, environmental sustainability reporting disclose weak and negative relationship with Tobin's Q, reflected by a coefficient of -0.014448

Table 4.3 Variance Inflation Factors

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	0.064783	186.3564	NA
ECN	0.017846	6.674834	1.756732
ENV	0.004372	3.307846	1.672533
SOC	0.003623	6.548964	2.155634

Source: Authors Computation using Eview, (2025)

From table 4.3 result above, there is an indication of absence of multicollinearity among the variables.

4.5. Analysis of regression result on the effect of sustainability reporting on firm value

To capture the effect of sustainability reporting on pharmaceutical companies in Nigeria, the fixed and random effect regression was applied on panel data. The hausman test was applied on the random regression outcome to determine the most efficient estimate, which was selected for interpretation. The hausman test in table 4.4 indicates that the random effect is preferred and therefore selected. The random effect regression is presented on table 4.4 below.

Table 4.4 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.049507	6	0.2345

Source: Econometric Eviews Version 9.0 (2025)

From the table above, the P-value of the chi-square, which stood at 0.2345, implies that random effect model is fit for the study since the p-value is greater than 0.05% level of significant.

Table 4.5 Diagnostic Test

Breusch-Godfrey Serial Correlation LM Test:	
F-Statistics	2.051453
Probability	(0.1521)
Heteroskedasticity Test: Breusch-Pagan-Godfrey	
F-Statistics	1.509344
Probability	0.1837

Source: Researcher's Computation via E-views. 9 (2025)

The P-value stood at 0.1837 from the given result above. this implies that there is absence of Heteroscedasticity. Also, higher chi-square would simply indicate the presence of heteroscedasticity. Since the Breusch Pagan tests clearly revealed that the individual error term has variance zero, we rejected the Pooled OLS estimate in favour of panel estimate. The Breusch-Pagan test indicated the presence of individual-specific variance in the error term, leading us to reject the Pooled OLS model in favor of a panel estimation model that accounts for these effects.

Table 4.6: Ramsey RESET Test

	Value	Df	Probability
t-statistic	1.365969	90	0.1754
F-statistic	1.865871	(1, 90)	0.1754

Source: Econometric Views Version 9.0 Output (2025)

The P-value in the result above stood at 0.1754, this indicates that proves no variables were omitted.

Table 4.7 Random Effect Model

REM was chosen for this study because the Hausman test (Table 4.4) indicated that the null hypothesis could not be rejected (p = 0.2345), implying that the random effects estimator is consistent and efficient compared to the fixed effects model. Additionally, diagnostic tests (Table 4.5) confirmed the absence of serial correlation and heteroskedasticity, satisfying key assumptions for panel regression. The REM is therefore appropriate as it accounts for individual-specific effects across firms while retaining efficiency, allowing the inclusion of variables that do not vary over time.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.59341	0.35077	1.691736	0.5442
ECN	0.35604	0.07266	4.900447	0.0000
ENV	0.22025	0.14551	1.51359691	0.2210
SOC	0.573645	0.258665	2.217714	0.0360
R-squared	0.767836			
Adjusted R-squared	0.685774			
Durbin-Watson stat	1.977554			
F-statistic	2.466578			
Prob(F-statistic)	0.000001			

Source: Econometric Views Version 9.0 (2025)

From table 4.7 result, the F-statistic and its p-value disclosed a value of 2.466578 and 0.000001 respectively, implying that on the overall, the independent variables significantly influence the firm value of pharmaceutical companies since the p-value is lower than the level of significant(0.05). Hence the model is consider a good fit. Furthermore, as shown in the result, R-squared (R²) disclosed a value of 0.767836(77%) signifying that 77% of the changes(variation) in firm value

can be traced to changes in sustainability reporting, while the rest 23% can be explained by other factor in the error term.

4.6. Discussion

According to the statistical findings in Table 4.7 above, the firm value of pharmaceutical businesses in Nigeria is significantly impacted by economic sustainability reporting, with a significance value of 0.000 being less than 0.05. The positive value of 0.356042 for the coefficient indicates a favorable direction of influence. The findings of earlier research on economic sustainability reporting (As suggested by Loh et al. (2017), who also indicated that the financial crisis had an effect), this study showed that sustainability reports had an economic influence on business value. As a result, it is anticipated that the economic aspect will become a crucial consideration when making investment choices. Furthermore, firm value is not impacted by environmental sustainability reporting, according to a significant result of 0.2210 shown by environmental sustainability reporting. Because investors or potential investors cannot directly view the firm's worth, environmental reporting may not have an impact on the firm value proxy as determined by Tobin's Q ratio. The study's findings contradict Buallay (2020) because environmental sustainability reporting does not significantly affect firm value in the Nigerian context, where investors focus more on profit margins and dividends. However, the results are consistent with Menike (2020), Rosdiana (2020), and Azlan, Mohammad, and Behzad (2019), who also found that environmental reporting has little or no direct impact on firm value. Lastly a t-value of 2.2177 indicates that the influence is positive. The test results indicate that the social aspect of revealing sustainable reports on firm value has a result of 0.0360, which is less than 0.05. This suggests that social sustainability reporting has an impact on firm value. Social sustainability reporting might be one of the recommendations that investors use to support their investment decisions, according to the research findings. The findings of Aisyah Farisa and Caesaria (2017) and Gunarsih, Sayekti, and Novak (2020) corroborate this research by also showing that social sustainability reporting positively and significantly influences firm value.

5.0 Conclusion and Recommendation

5.1 Conclusion

For stakeholders, including investors, businesses, and the government, sustainability reporting is becoming more and more significant. It is the duty of company management to disclose sustainability reporting in compliance with relevant standards. The study's findings about this relationship were inconclusive. This study examined a sample of pharmaceutical firms listed on the Nigeria Exchange group that released sustainability reports in 2023 and discovered that firm value is positively impacted by sustainability reports that include social and economic elements. In the meantime, business value is unaffected by environmental sustainability reporting.

5.2. Recommendations

Based on the empirical findings of the study, we recommend as follows:

1. Pharmaceutical companies should enhance their economic sustainability efforts, as these activities demonstrate to current and potential stakeholders that the company is effectively increasing its stock value, making it more attractive for investment and ultimately boosting firm value, supported by statistical evidence.
2. Stakeholders are advised not to rely solely on environmental sustainability reporting when assessing the firm value of listed pharmaceutical companies for investment decisions, as the study found no significant relationship between environmental sustainability and firm value.
3. Finally, managers and directors of listed pharmaceutical firms should regularly evaluate and improve their sustainability reporting practices to ensure accurate and effective disclosure.

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