



**BOARD INDEPENDENCE AND SUSTAINABILITY DISCLOSURE OF LISTED
MANUFACTURING FIRMS IN NIGERIA:
MODERATING ROLE OF FIRM AGE**

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Abstract

Sustainability disclosure plays an important role in improving the transparency of information, the involvement of stakeholders, and the long-term responsibility of corporations, especially in growing economies such as Nigeria. This study examines the moderating role of firm age and the effect of board independence on the sustainability disclosure of listed manufacturing firms in Nigeria. Purposive sampling was employed to select 16 out of 34 listed manufacturing companies that regularly issued sustainability reports between 2013 and 2023. An ex post facto research design was adopted. Panel-corrected standard errors were employed to test the hypotheses, and the results revealed that sustainability disclosures are negatively and significantly affected by both board independence. Further, the study establishes that firm age interacts with board independence and has a positive and significant effect on sustainability disclosure. Therefore, this study recommends that regulators like Security and Exchange Commission should mandate Environmental, Social, and Governance training and workshops for independent directors to enhance board participation in sustainability and improve disclosure quality.

Keywords: board independence, firm age, firm size, sustainability disclosure

1. Introduction

Sustainability disclosure, which refers to the transparent reporting of the environmental, social, and governance (ESG) practices, is one of the most important indicators of the willingness of a business to pursue the United Nations Sustainable Development Goals (SDGs) (Mok & Bakri, 2023). Such disclosures boost the confidence of stakeholders, future investments, and corporate transparency (Aliyu, 2019). In Nigeria, sustainability reporting is practised by a lot of listed companies with the main aim of projecting a positive image to investors as well as to adhere to the requirements set by international reporting (Onumoh, 2024). Nevertheless, such disclosures are largely qualitative and narrative in nature and usually do not include quantifiable data like levels of specific emissions, waste minimisation, or social impact data. It is especially superficial in the manufacturing industry, where the resource-consuming processes of manufacturing

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play a significant role in the economy of Nigeria and also in the environmental destruction through pollution and resource exploitation (Mok & Bakri, 2023).

The dependency on shallow and qualitative reporting is quite problematic. It contributes to greenwashing, in which unsubstantiated assertions weaken the credibility and prevent your stakeholders from objectively assessing ESG performance. Such lack of reliability and measurability of data may lead to information asymmetry and a lack of accountability and transparency, which may discourage foreign investment and raise financing costs, as well as make effective management of risk challenging (Onumoh, 2024).

In the case of Nigerian manufacturing companies, closing this gap is essential, since strong quantitative disclosures would be consistent with the currently growing global standards (including International Sustainability Standards Board (ISSB) frameworks), favourable stakeholder trust would be developed, and tangible contributions toward the national sustainability goals would become possible. Therefore, strengthening sustainability reporting practices is crucial for enhancing corporate value, attracting ethical capital, and fostering inclusive and sustainable economic development in Nigeria.

Board independence is an aspect of good corporate governance. Board independence is supposed to offer impartial control, diminish managerial opportunism, and make sure companies provide their stakeholders with the best interests (Stone, 2021). However, this relation may be weak based on the characteristics of firms in the process, including the age of firms affecting the dynamics of boards and managerial decisions (Dah & Jizi, 2018).

The firm's age can serve to moderate the relationship between board independence and sustainability disclosure, given that it has a role in affecting the corporate culture, as well as stakeholder networks and governance maturity. Although established firms might have better-organized governance and well-organized disclosure structures, they might also be reluctant to adopt change. In contrast, smaller companies may be more likely to embrace current ESG norms but, because of their limited governance capabilities, do not carry them out effectively (Githaiga & Kosgei, 2023).

Nigeria has a wide range of listed manufacturing firms that are accused of poor and even inconsistent sustainability reporting, including PZ Cussons and Dangote Cement (Onumoh, 2024). Weak board control and minimal experience of governance are the aspects that can affect the quality of ESG reporting, particularly in younger or transforming firms. In addition, there is no empirical information that can guide regulators and corporate boards on whether older companies are better placed to make more use of the independence of the board in making better disclosure. It is therefore, practically applicable to the stakeholders interested in customizing the corporate governance reforms following the firm-specific attributes such as age.

Sustainability disclosure has become an issue in recent years and plays an important role in improving the transparency of information, the involvement of the stakeholders, and the long-term responsibility of corporations, especially in growing economies such as Nigeria. Even though the regulatory bodies have been trying to encourage the process of environmental, social, and governance (ESG) reporting, which is provided by the Nigerian Exchange Group (NGX), and pressure on sustainability disclosures among the listed manufacturers in Nigeria, it is insufficient and variable (Onumoh et al., 2024). This calls

for the efficacy of structures of boards, particularly board independence, in advancing significant sustainability activities. Independent directors are supposed to provide objective supervision and encourage transparency, although the level of their impact on the sustainability disclosure within the manufacturing industry in Nigeria has not been studied yet.

There are inadequate studies on how firm-specific characteristics, like firm age, can moderate the connection between board independence and the sustainability disclosure (Mok & Bakri, 2023). Aged firms can possess more adult governance organization and stakeholder responsibilities, and juvenile firms can present more adaptability to the ESG tendencies. But there is a lack of empirical studies combining these complexities, leaving knowledge gap that constrains the boards, regulators, and policymakers on how to come up with governance structures that resonate with the interests of various stakeholders as previous studies such as Azman et al. (2020), Wisdom et al. (2021), and Abdullatif et al. (2023) did not consider firm age as moderating. Due to the environmental problems experienced in Nigeria and the socio-economic significance of the manufacturing sector on sustainability and stability, it is necessary to establish the role of board independence on firm age, particularly on disclosure of sustainability within the context of stakeholder theory (Freeman, 1984).

Previous studies present valuable knowledge but provide significant gaps that are filled by this study. Geographical, population, sectoral, and period gaps exist, where most of the study focused on other countries, sectors, and short periods (AbdulLatif et al., 2023; Azman et al., 2020; García-Sánchez et al., 2017). Wisdom et al. (2021) accessed 20 manufacturing companies in Nigeria through the use of ordinary least squares (OLS) regression, leaving a methodological gap.

This study fills this gap by adopting panel correction standard errors (PCSE) which is more robust capable of taking care of heteroscedasticity, multicollinearity, and autocorrelation. This study formulated the following hypotheses in a null form based on the objective of this study:

- H₀₁:** Board independence does not have a significant effect on the sustainability disclosure by listed manufacturing firms in Nigeria.
- H₀₂:** The age of firms does not have a significant effect on the sustainability disclosure of listed manufacturing firms in Nigeria.
- H₀₃:** The age of the firm does not have a significant moderating role on the effects of board independence on the sustainability disclosure of listed manufacturing firms in Nigeria.

This research has important benefits for major stakeholder groups. To the researchers, it helps to add to the existing literature about the effectiveness of independence of directors and sustainability-related disclosure by introducing firm age as an additional variable operating as a moderator, which has not been well addressed so far in the Nigerian setting. It further enhances theoretical knowledge through the use of stakeholder theory in evaluating the degree of board independence and sustainability disclosure.

To the practitioners, especially the board members and corporate managers, this study empirically conveys the effect of governance systems and organizational maturity on sustainability disclosure, hence leading to strategic choices during the composition of the board and during the determination of disclosure rules. To policymakers and regulatory bodies such as the Financial Reporting Council of Nigeria and the Securities and Exchange Commission, this research paper offers evidence, which is data-based, to guide the policy

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concerning improving sustainability practice to enhance transparency amongst manufacturing businesses in Nigeria.

This paper analyses the linkage between board independence and quality of sustainability disclosure in listed manufacturing companies in Nigeria between the years 2012 and 2023, with the moderating variable being the age of a firm. The reason why the manufacturing sector is of interest is its high level of environmental and social impact, such as resource consumption, emissions, and waste production, which make the disclosure of sustainability the most significant issue in the context of stakeholder responsibility and regulatory adherence.

The focus on listed companies on the Nigerian Exchange Group will guarantee that the secondary data in annual reports and sustainability disclosures is reliable and publicly available, and it will make comparisons between firms strong. The selected period (2012-2023) supports the extensive longitudinal analysis covering the changing tendencies in sustainability reporting practices, changes in corporate governance (including the Nigerian Code of Corporate Governance 2018) and the shift towards the standardised disclosures amid the gradual adoption of the ISSB Standards (IFRS S1 and S2) in Nigeria.

2. Literature Review

In this section addresses the conceptual framework, theoretical framework, and empirical review. The sustainability disclosure (dependent variable), board independence (independent variable), firm age (moderating variable), and firm size (control variable) are discussed in the conceptual framework (see Figure 1 below).

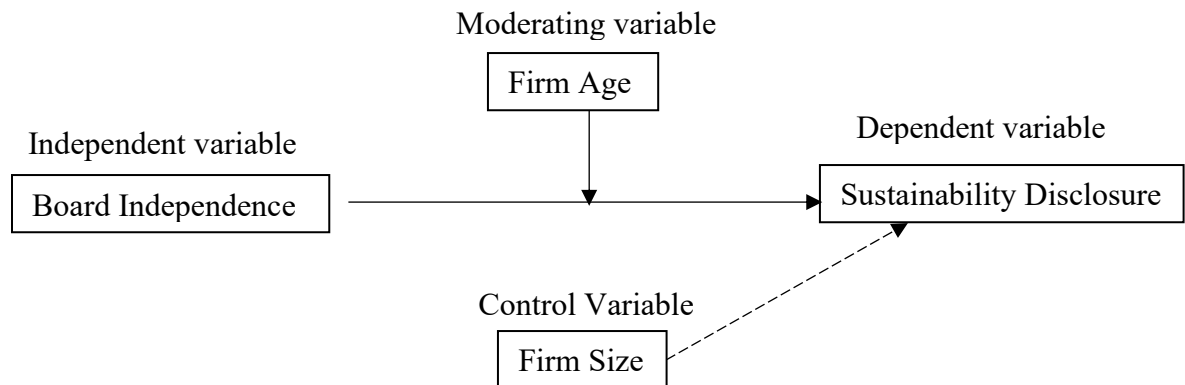


Fig. 1: Conceptual Framework

Source: Fieldwork, 2025

Sustainability Directory (2025) considered the concept of sustainability disclosure as a process, which implies a multi-faceted communication that constitutes the interplay between the organizational actions, expectations of society, and incentives to such regulations, as opposed to the data report (Sustainability Directory, 2025). It is abstract and conceptual in nature, addresses move motivated by strategy, norm processes, and political economy, but does not much address how it is to be measured operationally, and details the specific contents of ESG disclosure that are to be made.

The concept of sustainability disclosure is the quality and level of the ESG disclosures made by the exchange-traded manufacturing firms in the form of annual reports

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and standalone sustainability/corporate social responsibility (CSR) reports, and also through measures of the environment (e.g., emissions and waste), social (e.g., labor standards and community involvement), and governance (e.g., policies and ethics codes). The definition is compatible with the stakeholder theory; the companies disclosed information because it satisfied the demand of the stakeholders, explained the reasons why the operations took place, and reduced the information asymmetry.

The Sustainability Directory (2025) believed that the structural independence and relationship independence between a board and management or major shareholders that provides an independent oversight of its affairs was the independence of the board. It brings out the essential principles, yet it is still quite a generic definition; it does not bring about norms and limits of independence.

According to Norges Bank Investment Management (2025), it was formal governance; a majority of independent directors of the board, shareholders, and business relations dominated the board; there was an independent audit committee; and the independence of directors was clearly defined, including how the independence was established. This definition is clear and operational but fits more with the insights of institutional investors; it might be too strict and formalistic in the situations when governance codes vary, including the Nigerian firms.

This paper defines board independence as the ratio of non-executive directors to the total number of non-executive directors who are not connected to the management, major stockholders, suppliers, or auditors (its independence depends on whether they satisfy the requirements of local corporate governance codes). It also portrays structural separation and functional oversight, in accordance with stakeholder theory: independent directors secure interest to the stakeholders through the reduction of the conflict of interest and improvement of transparency.

Firm age in the literature on corporate finance is most typically operationally defined as the year of incorporation (or initial public offering) minus the reporting year (i.e., the number of years since incorporation or IPO) and has been argued to modulate the effects of governance on such outcomes as capital structure (ScienceDirect, 2018). That operational definition is objective and replicable and, in the process, makes firm maturity a chronological aspect, oblivious to the qualitative factors of its maturity, like a change in governance structures or institutional learning.

According to Memon and Samo (2019) and Han and Kim (2020), collections in synthesis in the assets of corporate governance literature, the firm age reinforces the partnership between the social and financial performance, where aged firms are well-established with routines, networks, and more advanced styles of governance. This implied definition only focuses on the effects of maturity, but it is broad; it is not very specific in order to be measured (how many years is old? Where are the thresholds at which capabilities change (at what point does capability change)?

Firm age, in this study, is the quantification in terms of years between the official incorporation or IPO of a firm and the end of the reporting year. It is presented as a continuous moderator variable in the models of the regressions to ensure the determination of the effect of two factors on maturity (age) watch as it influences the influence of board independence on the sustainability disclosure. Such operationalization draws on the stakeholder theory, as higher duration firms could engage more on stakeholders and better figure out disclosure patterns.

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The study is based on Stakeholder Theory as explained by Freeman (1984), which states that firms should not only satisfy shareholders to achieve success and legitimacy but also consider the expectations of a broader group of stakeholders such as employees, customers, government, communities, and the environment. The stakeholder theory is a proper way of analyzing this research based on the impact of board independence as well as the age of firms on their sustainability disclosure practices in Nigeria among listed manufacturing companies. Sustainability-related disclosure can show that a firm is committed to ethical, social, and environmental responsibilities as a significant means to provide accountability and transparency to its stakeholders (Bansal et al., 2018). Stakeholder-wise, disclosing sustainability through comprehensive reporting improves the reputation of a firm, as well as contributing to establishing trust with its interested groups (Buallay, 2019).

Independence of the board is considered important within this framework because they are more likely to advocate for the interests of external stakeholders, ensure transparency in the activities of the respective enterprise, and promote better non-financial disclosure in environmental and social areas (Aluchna & Aras, 2020). Stakeholder theory suggests that a board with independent members is better equipped to balance profit-making and societal and stakeholder interests. Also, this relationship is influenced by the age of the firm, where the older a firm is, the better the established relations with other stakeholders and the higher the level of scrutiny and expectations of the sustainability performance (Hamdan & Mushtaha, 2018). Thus, sustainability practices are more likely to be preferred in long-established firms to preserve legitimacy and strengthen the confidence of the stakeholders.

In the past, other empirical surveys have settled on stakeholder theory to justify the correlation between the structure of governance and disclosure. As an example, Manes-Rossi et al. (2018) determined there was a positive relation between governance quality (especially the presence of independent directors) and sustainability reporting among European businesses. Likewise, Kilic and Kuzey (2018) also confirmed that the theory is relevant because stakeholder pressures had a meaningful impact on the sustainability disclosures of firms in Turkey. Since the Nigerian manufacturing companies are functioning in an environment where there is an increase in the awareness of the stakeholders concerning the environmental and social issues, this theory can be used accordingly to explain why the manufacturers with a more independent and long operating history may be more committed towards sustainability transparency.

In short, the Stakeholder Theory supports the premise of this research interest in examining the impact of board independence and the moderating role of the age of a firm in terms of its sustainability disclosure. The theory outlines the greater ethical and relationship duties that are associated with the firms, and this fact underlines the greater role of governance and corporate maturity in influencing sustainability communication.

Board independence effect on the quality of sustainability reporting among companies in Malaysia was investigated by Azman et al. (2020) with a sample of 82 companies over 2012-2017, adopting generalized least squares for testing the panel regression. The study found a positive and significant effect of the independence of directors on sustainability disclosure. However, the study provides variable insight; there was a limitation in generalization as it focused on Malaysian listed firms, covered a short

period of 6 years, and non-inclusion of moderator, leaving a population gap, sectoral gap, period gap, and knowledge gap.

García-Sánchez et al. (2017) analyzed independent directors and CSR disclosures from the years 2014 to 2018 by taking ten organizations. Utilizing content analysis and regression analysis, they realized that board independence has a positive effect on sustainability reporting. However, the research was only five years long, without the moderator of firm age, which caused period effects and knowledge gaps. The restrictiveness of the generalization of the study. The study of Wisdom et al. (2021) investigated board independence and environmental disclosure of the 20 listed manufacturing firms in Nigeria for over five years. Using ordinary least squares (OLS) regression analysis, the study found that independence is positively and significantly related to the extent of environmental disclosure. However, the time span of five years and using OLS regression, creating period and methodological gaps, limits the generalization of the study.

In the study conducted by Jibril et al. (2021), the interaction between audit committee attributes, board of directors' independence, and sustainability disclosure for environmental sustainability in Nigerian oil and gas was analyzed. It used descriptive and inferential statistics, especially the correlation coefficient (Pearson coefficient), to establish these relationships. The results showed a significant and negative correlation between board independence and environmental disclosure. The study provides valuable insight but is limited by a sectoral gap and a methodological gap, as the study focused on oil and gas firms and the use of correlation, respectively.

Kamarudin et al. (2025) studied the nonlinear relationship between the board size and board independence and corporate sustainability performance in Pakistan, and the panel regression was used to analyze the moderation effect of the firm age and board independence on the sustainability disclosures in 2016-2018. Their study found that the index of the firms' age was positively and strongly related to their sustainability performance, especially among large firms with independent boards. Nevertheless, the generalizability of the study is limited by geographical, temporal, and sectoral gaps, as the study focused on Pakistan, spanned 3 years, and examined Pakistan's entire firms. The ex-post facto research design was employed since Onumoh et al. (2024) researched board attributes and sustainability disclosure of manufacturing firms listed in Nigeria in the interval between 2012 and 2023. The research found that the impact of board independence is positive and significant on sustainability disclosure. In the research, there is a knowledge gap, as the study did not focus on a moderator.

3. Methodology

The research design selected for this study is an ex-post facto research design, which is particularly suitable for examining the effect of board independence and other governance characteristics on the quality of sustainability disclosure. Such a design is appropriate since it investigates the associations between variables once they have taken place based on recorded events in history and archival materials published without any manipulation or interference from the researcher. The ex-post facto method reduces bias and facilitates causal inference through established statistical methods.

The population of this study will include all of the 34 consumer goods and industrial goods that are listed in the Nigerian Exchange. A purposive sample of 16 firms was

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identified out of this population with the help of an elimination approach. This sampling strategy was introduced to determine the sample that comprises only those firms that (i) have been regularly releasing full-fledged annual financial and sustainability reports during the years of the study (2013-2023) and (ii) have remained listed on the Nigerian Exchange before the year 2013. This criterion of selection increases the reliability and comparability of the secondary data and, at the same time, allows for conducting a strong longitudinal study of the sustainability disclosure trends in the course of the 11 years.

To conduct this study, annual reports of these companies were used to collect the required data, methods of multiple regression were used, and the data were analyzed using STATA 13 software. In this study the model specification by Onumoh et al. (2024) is adapted and is as follows:

$$SD_{it} = \alpha_i + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BM_{it} + \beta_4 LBS_{it} + \beta_5 FA_{it} + \varepsilon_{it} \quad (i)$$

Where: SD = Sustainability disclosure, BS = Board size, BI = Board independence, BM = Board size, FS = firm size, FA = Firm age, α = intercepts, ε = error terms, $\beta_1 - \beta_5$ = Coefficient, it = firm at time t. Based on proxies for the different variables under study, the above equations have been modified as follows:

$$SRD_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 FA_{it} + \beta_3 FA * BI_{it} + \beta_4 FS_{it} + \varepsilon_{it} \quad (ii)$$

Where: SDR = Sustainability Reporting Index, BI = Board independence, FA = Firm Age, FS = Firm size, β_0 = intercepts, $\beta_1 - \beta_4$ = Coefficient of determination, it = firm at time

The variable definitions and measurements of this study, which include the dependent Variable (sustainability disclosure), independent variable (Board gender diversity), moderator (Firm age), and control variables (firm size), are shown in Table 1.

Table 1

Variables Definition and Measurement

Variables	Definition	Measurement	Sources
<i>Dependent Variable</i>			
Sustainability Disclosure (SD)	Sustainability disclosure is the comprehensive and transparent reporting of a company's ESG practices.	Sustainability Disclosure otherwise 0	Onumoh et al. 1, (2014)
<i>Independent Variable</i>			
Board Independence (BI)	This represents board non-executive directors	Proportion of the number of board independence to board size	AbdulLatif et al. (2023)
<i>Moderating Variable</i>			
Firm Age (FA)	Fage age is the number of years to date the firm has been incorporated.	Number of years since incorporation	Kamarudin et al. (2025)
<i>Control Variable</i>			
Firm Size	Firm size is the firms' total assets	Natural log of total assets	Umukoro et al. (2019)

Source: Fieldwork, 2025

4. Results and Discussion

This presents the results and discussion of the data of this paper, analyzed through STATA 13 software.

Table 2

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Sd	176	.676	.469	0	1
Bi	176	.739	.112	.5	.93
Fa	176	55	17.312	21	100
Fs	176	24.903	1.8	21.33	28.75

Source: STATA 25, 2025

Table 2 has SD average value of 0.676 and standard deviation value of 0.469 showed that sustainability disclosure in the firms is moderate where there is a high variation in its practice as the standard deviation is more than half a mean. Board independence has an average of 0.739 with low deviation of 0.112 as it less than one-third of the mean, which suggests that the bulk of the firms are relatively equal in the aspects of board independence. The firm age has a mean of 55 years with a standard deviation of 17.312, show a low variation as it is around one-third of the mean.

Table 3

Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	Z	Prob>z
sd	176	1.000	0.000	-55.930	1.000
bi	176	0.971	4.188	2.937	0.002
fa	176	0.964	5.312	3.424	0.000
fs	176	0.980	2.884	2.172	0.015

Source: STATA 25, 2025

The results of the test on normality of the obtained data by Shapiro-Francia W test are provided in Table 3. The results indicate that sustainability disclosure ($W = 1.000$, $p = 1.000$) takes a normal distribution because the p-value has exceeded 0.05. Nevertheless, board independence (0.002), firm age (0.000), and firm size p-value (0.015) were all less than 0.05 which results in the variables not being normally distributed. Even though they were not normally distributed, it should not be to a large extent impact the study since the large sample size ($n=176$) would warrant the use of panel data regression, where the asymptotic normality assumption is usually made in large samples.

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Table 4

Pairwise correlations

Variables	Sd	Bi	Fa	Fs
Sd	1.000			
Bi	0.110 (0.145)	1.000		
Fa	0.136 (0.071)	-0.266* (0.000)	1.000	
Fs	0.283* (0.000)	0.069 (0.366)	-0.037 (0.626)	1.000

Source: STATA 25, 2025

According to the pairwise correlation analysis (Table 4), the correlation between the firm size and sustainability reporting index is significant and positive ($r = 0.283$, $p < 0.001$), which means that larger firms report more detailed ESG information. Board independence shows a positive but non-significant correlation with sustainability disclosure ($r = 0.110$, $p = 0.145$), while firm age has a significant negative relationship with board independence ($r = -0.266$, $p < 0.001$) and no significant relationship with disclosure quality. The explanatory variables are not strongly correlated; multicollinearity is not an issue.

Table 5

Diagnostic Test

	VIF	1/VIF
Bi	1.08	.926
Fa	1.077	.929
Fs	1.005	.995
Mean VIF	1.054	.
Hottest	0.000	
Hausman specification test	0.000	

Source: STATA 25, 2025

From Table 5, the VIF mean of 1.054 less than the threshold of 10, and individual inverse of it is below 1, implying absence of multicollinearity. The hottest shows a p-value of 0.000, indicating presence of heteroskedasticity, and this is resolved through regression robust. Lastly, Hausman specification test values in both models are 0.000; this implies that there is more preference for fixed effects models than random effects in the model constructs. But to take care of heteroskedasticity and autocorrelation, this study opts for panel correlation standard errors estimation for both models.

Table 6

Regression Model Summary: Panel Corrections Standard Errors

Sd	Coef.	St. Err.	t-value	p-value
Bi	-2.097	.920	-2.28	0.023
Fa	-.030	.012	-2.57	0.010
fe_bi	.047	.016	3.03	0.002
Fs	.076	.014	6.65	0.000
Constant	.055	.784	0.07	0.945
R-squared		0.146	Number of obs	176
F-test		58.38	Prob > F	0.000

Source: STATA 25, 2025

The R-squared of the model as indicated in Table 6 is 0.146, showing that the model has explained a variation of just about 14.6% of the sustainability disclosure level caused by explanatory variables. The F statistic value of 58.38 and the p value of 0.000 indicate the overall model of this regression is statistically significant and fitted. Implying that the model is well combined in used.

The coefficient of board independence (bi) is -2.097, and the p-value is 0.023; this is significant at the 5 percent level. This means that there is a negative and significant effect of board independence on sustainability disclosure, meaning that an increased level of independence of board members is not necessarily associated with the enhanced sustainability reporting practices. Therefore, **H₀₁ is rejected**. This finding supports the study by Jibril et al. (2021), who found that board independence has a significant and negative effect on sustainability disclosure. However, against the stakeholder theory, and the study García-Sánchez et al. (2017), Azman et al. (2020), Wisdom et al. (2021), AbdulLatif et al. (2023), Onumoh et al. (2024), who realized that board independence has a positive effect on sustainability reporting.

The coefficient of firm age (Fa) has a value of about -0.030, and the p-value is 0.010, which is significant at the 5 percent level as well. This means that the sustainability disclosure of firms is inclined towards being lower with respect to older firms. It may indicate the meaning of avoiding such change or decreased sensitivity to new reporting standards among more mature firms. Therefore, **H₀₂ is rejected**. This is against the study by Kamarudin et al. (2025), who discovered that the index of the firms' age has a positive and significant effect on sustainability disclosure.

Notably, the interaction effect (fe,bi) that measures the moderating effect of the firm age on the interaction between board independence and sustainability disclosure is positive and statistically significant with a p-value of 0.002 and a positive coefficient value of 0.047. This means that firm age plays an important role in regulating the interaction between board independence and sustainability disclosure, and the moderating effect is positive. That is to say, even though an independent board influences the sustainability disclosure in the negative direction, it does so to a smaller extent in older firms, which may be the case because newer firms with independent boards are more institutionalized and more able to handle the expectations of their stakeholders. Therefore, **H₀₃ is rejected**. This is consistent with the stakeholder theory and the research study by Kamarudin et al. (2025), who discovered that age and board independence of the firms positively and significantly affect sustainability disclosure.

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5. Conclusion and Recommendations

In conclusion, the independence of the board and the age of a firm have a negative effect on the disclosure of sustainability. It is likely that older companies disclose less, and no automatic improvement in sustainability transparency may follow more independent boards. Yet, firm age is significant in limiting the effect of the board, which generates complexity in the studies of the governance process in the disclosure behavior of companies. Therefore, the study recommends as follows:

- i Firms should employ independent directors with high sustainability and ESG experience to ensure that the independence of boards would aid in enhancing disclosure on sustainability, rather than weakening it.
- ii The sustainability reporting practice of aged firms should be revised regularly to comply with the demands of the new standards; otherwise, they may experience resistance to new disclosure requirements.
- iii Firms should adopt age-specific governance approaches through incorporating board independence and sustainability-related designs to improve sustainability disclosures.

The study contributes to the existing body of knowledge by demonstrating that board independence negatively impacts the quality of sustainability disclosures in listed manufacturing companies in Nigeria, which contradicts much of the previous literature; it also shows that firm age constructively moderates this effect, reducing the negative impact in older companies and emphasising the importance of contextual and institutional factors in emerging markets.

In theory, the results refute the positive governance assumptions of the stakeholder theory and expand the resource dependence theory, as they demonstrate firm age buffers as a governance weakness. Practically, regulators ought to require ESG training for independent directors and incentivise mature companies to embrace ISSB standards. The role of accounting professionals and firms should be to increase board watch over sustainability, whereas the role of investors should be to challenge the governance of old or highly independent boards.

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