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EFFECT OF BOARD CHARACTERISTICS ON COMPREHENSIVE INCOME AMONG THE LISTED FIRMS IN NIGERIA

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Abstract

This study investigates the impact of board characteristics on comprehensive income among listed firms in Nigeria, focusing on board size, independence, and gender diversity. Utilizing secondary data from 324 firm-year observations spanning 2019 to 2023, the study adopts multiple regression techniques. The findings reveal that board size and board independence positively influence comprehensive income (CI) and other comprehensive income (OCI) in both financial and non-financial firms. Larger boards contribute to enhanced oversight and decision-making, while independent directors improve governance and transparency. However, board gender diversity does not demonstrate a significant positive impact on comprehensive income or other comprehensive income, suggesting that cultural and structural barriers may limit its effectiveness in Nigeria's corporate landscape. Firm size and leverage also play crucial roles, with larger firms and leveraged firms exhibiting better comprehensive income. The study concludes that optimizing board size and increasing board independence can enhance comprehensive income, while gender diversity requires further institutional support to be impactful. It is recommended that firms establish an optimal board size that balances expertise and efficiency, while regulators should enforce stricter corporate governance codes mandating a higher proportion of independent directors. Additionally, organizations should implement inclusive policies to ensure that gender diversity on boards translates into tangible financial benefits.

Keywords: comprehensive income, board size, board independence, gender diversity, listed firm

1. Introduction

Selecting a feasible approach to assess periodic financial condition and performance remains a persistent challenge for standard-setters and consumers of accounting information (Usman, Amran, & Shaari, 2017). Proponents of the inclusive method argue that the income statement should reflect all changes in the market value of assets and liabilities, accurately representing changes in these values at the beginning and end of the fiscal term (Cardao-Pito & Silva-Ferreira, 2018). This method enables users to clearly distinguish between value creation and distribution by detailing all cash flow changes from fair value adjustments and operational cash flows (Borg, 2018; Kusuma et al., 2021; Susanto et al., 2021; Anderson et al., 2023; Baratovna, 2023).

In contrast, the prevalent operating performance method records non-core business transient adjustments (dirty surplus flows) in owners' equity on the balance sheet rather than in the income statement (Merve & Karacaer, 2017; Usman & Amran 2019). Critics argue that this practice may encourage earnings management, thus undermining the utility of comprehensive income models like Comprehensive Income (CI) and potentially leading to erroneous conclusions by users of accounting information (Amran, 2016). The CI-type statement, employing a holistic approach, includes all major components of income to provide a thorough evaluation of financial success (Amran, 2016; Usman, et al., 2017; Amran & Shaari, 2019). Strong corporate governance (CG) practices have been shown to mitigate discrepancies and deter unethical behavior (Al-Ahdal, et al., 2020; Mahrani & Soewarno, 2018). Effective corporate governance (CG) practices, such as stringent oversight, reduce exploitative business practices and enhance the reliability of financial reporting (Zalata, et al., 2019; Olorede, et al., 2022). The impact of CG on the assessment of Comprehensive Income (CI) and Other Comprehensive Income (OCI) varies depending on the governance practices in place (McInnis, et al., 2018; Filip, et al., 2019).

Board characteristics, such as board size, composition, diversity, and independence, are pivotal in ensuring effective oversight and strategic guidance. A well-composed board with a mix of skills, experiences, and independence can enhance decision-making processes, reduce agency conflicts, and improve financial reporting quality. Previous studies have shown that boards with higher independence and diversity tend to have better comprehensive income and transparency, which positively influences comprehensive income (Terjesen, et al., 2016; Sarhan, et al., 2019; Latif, et al., 2020). In Nigeria, where corporate governance practices are still maturing, the objective of this study was set to examine effect of board characteristics on comprehensive income reporting for sample of Nigerian listed firms. This is believed to provide insights into how governance structures can enhance comprehensive income reporting as statutorily required.

The reminder of the paper is organized as follows, Section 2 review the literature and develop hypothesis. Section 3 describes data and methodology. Section 4 present results and discussion. The last section offers the concluding remarks, recommendations.

2. Literature Review

Board Size and Comprehensive income

Empirical studies provide mixed evidence on the impact of board size on firm performance. Palaniappan (2017) examined Indian manufacturing firms and found that larger boards positively influenced comprehensive income metrics such as Tobin's Q, return on assets (ROA), and return on equity (ROE). This was attributed to the diversity of expertise and experience brought by a larger board. Similarly, Agyemang et al. (2017) studied firms in Ghana and Nigeria and observed that larger boards positively impacted comprehensive income, suggesting that the benefits of diverse perspectives outweighed potential inefficiencies. However, Yusuf et al. (2018), focusing on Nigerian deposit money banks, revealed that large boards negatively impacted ROA and ROE. The authors cited coordination and communication challenges as reasons for the inefficiencies associated with larger boards. Johl et al. (2015) also reported that board size positively affected firm performance in Malaysian public firms, emphasizing improved strategic oversight. In contrast, Kao et al. (2019) discovered that smaller boards were more effective for Taiwanese listed firms, stressing that excessively large boards might lead to inefficiencies due to communication barriers. On the basis of this review the following hypothesis is being investigated in this study:

H_{01}: Board size does not significantly influence comprehensive income of listed firms in Nigeria

Board Independence and Comprehensive income

The independence of board members is widely acknowledged as a critical factor in enhancing comprehensive income through effective oversight. Johl et al. (2015) found that independent directors in Malaysian firms contributed to better decision-making and reduced agency conflicts, leading to enhanced firm performance. Similarly, Kao et al. (2019) observed that a higher proportion of independent directors positively influenced comprehensive income in Taiwanese listed firms by improving oversight and reducing managerial opportunism. In Nigeria, Agyemang et al. (2017) reported that higher board independence significantly enhanced the comprehensive income of firms by mitigating agency conflicts. Imade (2019) also highlighted that independent boards promoted transparency and accountability in financial reporting for Nigerian-listed firms. Supporting these findings, Eluyela et al. (2018) identified a positive relationship between independent directors and comprehensive income in Nigerian deposit money banks, emphasizing their role in ensuring unbiased decision-making and governance. The following hypothesis is being investigated in this study:

H_{02}: Board independence does not significantly influence comprehensive income of listed firms in Nigeria

Board Gender Diversity and Comprehensive income

Gender diversity within boards has been linked to improved governance practices and comprehensive income. Kılıç and Kuzey (2016) examined Turkish firms and found that gender-diverse boards positively influenced ROA and ROE, attributing the improvement to enhanced decision-making quality. Similarly, Imade (2019) studied Nigerian firms and concluded that gender diversity significantly enhanced corporate performance by introducing varied perspectives and fostering a robust governance structure. Bennouri et al. (2018) revealed that the presence of female directors improved ROA and ROE but noted mixed effects on Tobin's Q in listed firms across multiple countries, suggesting contextual differences in gender diversity's impact. Terjesen et al. (2016) analyzed firms across 47 countries and found that gender-diverse boards contributed to better governance practices and enhanced comprehensive income. Lastly, Abu et al. (2016) focused on Nigerian deposit money banks and observed that female directors positively impacted comprehensive income by fostering robust governance practices and improving decision-making efficiency. On the basis of this review the following hypothesis is being investigated in this study.

H_{03}: Board gender diversity does not significantly influence comprehensive income of listed firms in Nigeria

Theoretical Review

Corporate governance is a framework that ensures the alignment of interests between stakeholders and management while enhancing comprehensive income and transparency. Among the core mechanisms of corporate governance are the characteristics of the board of directors, which serve as pivotal tools in safeguarding shareholders' interests and improving financial reporting quality. Theoretical perspectives such as Agency Theory and Stewardship Theory provide the foundation for understanding the influence of board characteristics on comprehensive income reporting.

Agency Theory

Agency Theory emphasizes the conflicts of interest that arise between shareholders (principals) and management (agents). It posits that managers may pursue personal interests at the expense of shareholders, resulting in agency costs (Jensen & Meckling, 1976). To mitigate these conflicts, the board of directors acts as a monitoring mechanism, ensuring accountability and alignment with shareholder objectives. Specific board characteristics such as size, independence, and gender diversity are crucial for effective oversight. Agency Theory suggests that an optimal board size can enhance monitoring capabilities and strategic decision-making.

Larger boards may bring diverse expertise and perspectives, which are critical for effective oversight. However, excessively large boards can lead to coordination issues and reduced efficiency. Empirical evidence indicates a positive but diminishing effect of board size on comprehensive income, suggesting that a balance must be maintained (Palaniappan, 2017). Independent directors, free from material relationships with the company, are vital for unbiased decision-making. Agency Theory highlights that higher board independence reduces managerial opportunism by prioritizing shareholder interests. Independent boards are associated with improved comprehensive income and higher-quality financial reporting, including comprehensive income disclosures (Kao et al., 2019).

Incorporating gender diversity within the board aligns with the principles of Agency Theory by bringing diverse perspectives and reducing groupthink. Female directors contribute to more rigorous decision-making processes and enhance the board's overall monitoring effectiveness. Studies have shown that gender-diverse boards are positively associated with comprehensive income, including metrics such as return on assets and return on equity (Kılıç & Kuzey, 2016).

3. Methodology

This study employed the explanatory research design also known as the causal research design. Which is to understand the causal relationships between variables or occurrences. The population of the study includes the entire listed firm on the Nigeria Exchange (NGX) Group Plc as at 2023. According to the Nigeria Exchange Group Plc there are 157 listed companies with the commission divided into 11 sectors (NGX Group, 2023). Table 1 shows the number of companies' base on sectors. Convenient sampling approach was adopted, which is deemed appropriate as it allows the researcher to utilize sample unit (listed firms) possessing readily accessible information that aligns with the study's design selection criteria. Population units not meeting the selection criteria were excluded from the sample. A filtering procedure, inspired by the methodologies of Ismail (2003), Hung and Subramanyam (2007), Kanagaretnam et al. (2009), Kubota et al. (2011), and Mechelli and Cimini (2014), was implemented to focus primarily on businesses possessing the required information. All accounting-related figures will be sourced from audited financial statements of enterprises that meet the filtering criteria. Additionally, nonfinancial data will be extracted from annual reports using content analysis, aligning with methodologies employed by Kanagaretnam, Mathieu, and Shehata (2009), Song, Thomas, and Yi (2010), as well as Usman et al. (2016).

Table 1

Detailed Sector Distribution of NSE Market

Sector	Number of listings
Agriculture	5
Conglomerate	6
Construction/Real Estate	9
Consumer Goods	21
Financial Service	49
Health Care	7
Information Communication Technology	9
Industrial Goods	13
Natural Resource	4
Oil and Gas	9
Service	23
Total Population	157

Source: NGX Group Website, 2023

Table 2 provides a breakdown of the sample calculations by industry, year, and objectives based on the aforementioned selection criteria. Panel A categorizes the entire sample between financial and nonfinancial enterprises, with nonfinancial firms having the most data from 2019 to 2023. The initial total sample comprises 785 firm-year data, encompassing 245 financial businesses and 540 nonfinancial enterprises. However, due to missing data or all three components of other comprehensive income being zero, 401 firm-year observations were excluded, including 102 financial and 299 nonfinancial observations. Furthermore, firm-year observations without complete annual reports for the financial and non-financial sectors were subtracted (21 financial and 39 non-financial) as part of the second selection criteria, resulting in a final sample of 324 firm-year observations (122 financial and 202 non-financial) for testing the relevant hypotheses.

Table 2

Sample Calculation

Panel A: Sample calculation for year 2019 to 2023	Financial	Non-financial	Total
Total number of firm-year data	245	540	785
Less:			
Firm-year data with nil other comprehensive income items	102	299	401
Total data with other comprehensive income item	143	241	384
Less firms-year data without full annual report	21	39	60
Firm-year observations for the Test of H_{01}, H_{02} and H_{03}	122	202	324

Source: Authors' Compilation, 2024

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income with annual reports between 2019 and 2023.

Table 3

Sample Calculation

Panel B: Composition by industry	Firm-year observation	%	Number of firms	%
Financial sector				
Bank	54	44.3	14	48.3
Insurance	48	39.3	11	37.9
Investment and Financial Services	20	16.4	4	13.8
Total	122	100	29	100
Non-financial sector				
Agriculture	7	3.6	3	4.3
Conglomerate	9	4.7	5	7.1
Construction	13	6.8	7	10.0
Consumer Goods	52	27.1	19	27.1
Healthcare	13	6.8	6	8.6
Oil and Gas	34	17.7	10	14.3
Industrial Goods	41	20.3	17	15.7
Services	28	13.0	13	12.9
Total	192	100	70	100

Source: Authors' Compilation, 2024

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income with annual reports between 2019 and 2023.

Table 4

Sample Calculation

Panel C: Composition by year	2019	2020	2021	2022	2023	Total
Financial sector						
Bank	9	10	12	11	12	54
Insurance	7	6	11	9	15	48
Investment and Financial Services	2	3	4	5	6	20
Total	18	19	27	25	33	122
Non-financial sector						
Agriculture	1	0	1	2	3	7
Conglomerate	0	2	2	1	4	9
Construction	2	2	2	4	3	13
Consumer Goods	12	9	10	13	8	52
Healthcare	2	1	4	2	4	13
Oil and Gas	9	8	5	8	9	39
Industrial Goods	4	9	11	7	10	41
Services	5	5	5	6	7	28
Total	35	36	40	45	48	202

Source: Authors' Compilation, 2024

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income between 2019 and 2023. Obs denotes observations.

Panel B as shown in table 3 dissects the initial classification of financial and nonfinancial enterprises into sub-sectors. The financial sector encompasses banks, insurance companies, and investment and financial services. Nonfinancial sample businesses span various sectors, with the largest representation from consumer products, industrial goods, services, and oil and gas, and the least representation from agricultural and healthcare firms. Panel B further illustrates the distribution of enterprises across each sector, highlighting a balanced representation without dominance from any single industry.

In Panel C as depicted in table 4, the breakdown by year is presented, demonstrating an even distribution of the sample across the years. All assumptions were scrutinized using a sample comprising 122 financial and 192 non-financial enterprises over a one-year period. This approach is consistent with the study's focus on examining the impact of corporate governance mechanisms on Nigeria's comprehensive income figures from 2019 to 2023.

The principal objective of this research is to examine how board characteristics influence the comprehensive income and other comprehensive income of listed Nigerian enterprises spanning the period from 2019 to 2023. To tackle the key challenges outlined above, a combination of descriptive and inferential analyses which are correlation analysis and ordinary least square regression was employed in this study.

Model Specification

The efficacy of a board is vital to a company's profitability and governance. Since the composition of a board affects its efficiency, it is important to study how board characteristics indicators correlate with firm financial results. The possible effect of board structure factors on total revenue is investigated, with a focus on board size, independence, and gender diversity.

According to Zabri, Ahmad, and Wah (2016) and Jeroh and Okoro (2014), board size is the total number of board members. The optimum size of a company's board should include both executive and non-executive directors, however there is no consensus on the optimal size of a board (Tariq & Naveed, 2016). Cultural, legal, political, and economic issues all play a role in determining the ideal size of a board of directors for a certain organisation. Jensen (1993), Florackis and Ozkan (2004), and Hermalin and Weisbach (2003) all found that different sized boards had different effects on their respective games. A minimum of five (5) individuals, including both executive and non-executive directors, must serve on a company's board of directors in accordance with the 2018 Corporate Governance standards applicable to publicly listed enterprises in Nigeria.

A similar method for determining board independence is to look at how many independent directors there are (Zabri, Ahmad, & Wah, 2016). This is often measured as the proportion of the board that consists of independent, non-executive directors. The board's level of independence affects the amount of independent judgment used in evaluating the ideas and actions of executives and management. The concept is that the amount of independence on a board may affect management choices, therefore impacting the financial success of the organisation.

The topic of diverse board characteristics has recently risen to prominence in the field of corporate governance. According to Chandrasekharan (2016), the increased need for better governance measures has led to heightened emphasis on board diversity in recent study. Cognitive diversity and demographic diversity are the two primary types of diversity characteristics identified by Zainal, et al., (2013). Cognitive diversity is concerned with intangibles like experience and educational attainment as opposed to more easily measurable demographic diversity like colour, gender, religion, and age (Chandrasekharan, 2016). The urge for a more diverse board originates in the normative principle of fairness and social justice, which stands in opposition to discrimination of any kind against any group or person considered a "minority." It is argued that a board with a more representative cross-section of the population, in terms of race, gender, and socioeconomic status, would be better equipped to deal with the complexities of today's markets.

To sum up, the aforementioned arguments provide the basis for the following model for board characteristics and its effect on CI and OCI.

$CI = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 FS_{it} + \beta_5 L_{it} + \varepsilon_{it}$---------------------------eqt(1)

$OCI = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 FS_{it} + \beta_5 L_{it} + \varepsilon_{it}$---------------------------eqt(2)

Where all variable were previously defined, except for BS_{it} which represent the board size measured by the total number of directors seating on the board, BI_{it} representing number of independent boards to total number of directors seating on the board, BGD_{it} representing the gender diversity of the board measured by the number of female board member in the board.

Variable Measurement

Table 5

Variable Definition, Measurement and Sources

S/N	Variable	Measurement	Source
1	Comprehensive income (DV)	Comprehensive income was measured base on the net firm profit/loss plus other income/loss qualified as comprehensive income as captured in the firm's statement of comprehensive income.	(Dhaliwal, et al., 2007)
2	Other comprehensive income (DV)	Other comprehensive will be measured as aggregate of income/loss unrealized by companies.	Yahaya, et al., (2015); Sajnóg (2021).
3.	Board size	Board size represents the aggregate number of directors on a corporate board, encompassing individuals who collectively oversee the strategic direction and governance of an organization.	AlQudah, et al., (2019).
4	Board independence	Board independence is measured as the ratio of independent non-executive directors on the board divided by total directors on the board.	Guping, et al., (2020); Adebayo, etal., (2022); Wang, et al., (2020)
5	Board gender diversity	Is measure as the ratio of female to male board members.	Zalata & Abdelfattah, (2021) and Poletti et al., (2019)
6	Firm size (CV)	Firm size is measured as company total assets.	Ayuba, et al., (2019).
7	Leverage (CV)	Leverage traditionally refers to the use of borrowed capital to finance a company's assets and operations. Leverage = Total Debt / Total Shareholders' Equity	Adenugba, et al., (2016).

Source: Authors Compilation, 2024

4. Results and Discussion

Board Characteristics on Comprehensive income of Listed Firms in Nigeria

The correlation analysis in Table 6 reveals relationships between board characteristics and comprehensive income (CI) for both financial and non-financial firms in Nigeria. These findings are consistent with several recent studies within Nigeria while also presenting interesting contrasts when compared to research from advanced nations. This section explores these relationships in detail, supported by relevant empirical studies, to offer insights into how corporate governance practices influence firm performance across different contexts.

In the context of Nigeria, board size shows a moderate positive correlation with CI for financial firms (0.42) and non-financial firms (0.30). This suggests that larger boards tend to improve the comprehensive income of Nigerian firms, likely due to the diversity of skills, expertise, and better oversight functions they bring. Recent Nigerian studies, such as Uwuigbe et al. (2020) and Ademola et al. (2022), support this finding, arguing that larger boards enhance decision-making, provide better governance, and positively impact firm profitability. However, in advanced nations, the relationship between board size and firm performance is more pronounced. For instance, Yermack (1996), in a U.S. context, found that excessively large boards might reduce efficiency and hinder decision-making, thus negatively impacting firm performance. On the other hand, Coles, Daniel, and Naveen (2008) concluded that for complex firms, especially in regulated industries like finance, larger boards could improve performance by enabling more comprehensive governance. This contrast suggests that while Nigerian firms broadly benefit from larger boards due to the need for strong governance oversight, in advanced markets, the benefits of board size are more conditional, reflecting industry-specific needs.

The correlation between board independence and CI is positive for both financial (0.35) and non-financial firms (0.45) in Nigeria. This indicates that independent boards, composed of directors who are not directly affiliated with management, play a crucial role in enhancing comprehensive income by ensuring better governance and reducing conflicts of interest. Studies such as Adeyemi and Fagbemi (2021) and Olayinka et al. (2023) corroborate these findings, noting that board independence in Nigeria improves firm outcomes by increasing transparency and safeguarding shareholders' interests. Similarly, research in advanced nations supports the positive role of board independence in improving firm performance. Bhagat and Black (2002), for instance, highlighted those independent directors in the U.S. are better equipped to challenge management and act in the best interests of shareholders, leading to improved financial outcomes. However, the impact of board independence tends to be more profound in advanced nations due to stricter regulatory environments and better enforcement of corporate governance principles. In Nigeria, while board independence has a significant positive effect, it might be moderated by weaker institutional frameworks and enforcement mechanisms, explaining the moderate correlation observed in this study.

Table 6

Correlation analysis of Board characteristics and comprehensive income of listed firm in Nigeria

Panel A: Financial Firms						
Variables	CI	BS	BI	BGD	FS	L
CI	1					
BS	0.42	1				
BI	0.35	0.25	1			
BGD	-0.12	0.10	0.15	1		
FS						
L	0.45	0.30	0.35	0.05	0.48	1
Panel B: Non-Financial Firms						
CI	1					
BS	0.30	1				
BI	0.45	0.35	1			
BGD	-0.10	0.08	0.10	1		
FS	0.55	0.28	0.50	-0.20	1	
L	0.50	0.25	0.42	0.00	0.40	1

Source: Authors' Compilation, 2024

Note: Comprehensive Income (CI); Board Size (BS); Board Independence (BI); Board Gender Diversity (BGD); Firm Size (FS) and L= Leverage.

The analysis reveals a weak negative correlation between board gender diversity and CI in both financial (-0.12) and non-financial firms (-0.10) in Nigeria. This implies that gender diversity on boards does not immediately lead to improved comprehensive income and may even present challenges in terms of integration into board dynamics. Studies like Adekoya et al. (2021) and Nwafor et al. (2022) highlight that while the inclusion of women in Nigerian boards is increasing, its impact on firm performance remains limited, often due to tokenism and cultural barriers.

In contrast, studies from advanced nations show more positive outcomes. Adams and Ferreira (2009) and Carter, Simkins, and Simpson (2003), for instance, found that gender-diverse boards in the U.S. and Europe tend to improve decision-making and positively affect firm performance. This divergence can be attributed to more progressive gender inclusion policies and supportive environments in advanced economies, which allow women to contribute meaningfully to corporate governance. In Nigeria, the benefits of gender diversity are yet to be fully realized due to lingering socio-cultural barriers and the slow adoption of inclusive corporate policies.

Firm size shows a strong positive correlation with CI in both financial (0.60) and non-financial firms (0.55) in this study. Larger firms tend to perform better financially, benefiting from economies of scale, greater market reach, and resilience to market fluctuations. This finding is consistent with Ojo et al. (2023) and Adegboye and Adeoye (2022), who found that Nigerian firms with larger asset bases are better able to navigate economic uncertainties and generate higher comprehensive income.

Similar patterns are observed in advanced nations, where firm size is positively correlated with performance. Pervan and Visic (2012) noted that larger firms in European markets tend to be more profitable due to their ability to leverage resources and scale operations. However, in advanced economies, the advantages of firm size may be somewhat tempered by intense market competition and regulatory constraints. In contrast, larger firms in Nigeria tend to dominate their respective markets, benefiting from less competition and weaker regulatory pressures, which could explain the slightly stronger correlation observed in the Nigerian context.

Leverage exhibits a moderately strong positive correlation with CI for both financial (0.45) and non-financial firms (0.50) in Nigeria. This indicates that firms that effectively utilize debt financing are able to boost their comprehensive income. Recent studies like Egbunike et al. (2020) and Arowoshegbe et al. (2021) found that leverage plays a key role in enhancing firm profitability in Nigeria by providing the necessary capital for expansion and investment, especially in environments with limited access to equity financing. In advanced nations, the relationship between leverage and firm performance is more complex. Modigliani and Miller (1958) initially argued that leverage can improve firm performance by lowering the cost of capital. However, studies like Zeitun and Tian (2007) caution that while leverage can enhance profitability, high levels of debt can also increase financial risk, particularly in volatile markets. In Nigeria, where capital markets are less developed, firms rely more on debt financing, which can explain the stronger positive correlation between leverage and comprehensive income.

Table 7

Regression Analysis of Board Characteristic and Comprehensive Income of Listed Firms in Nigeria

Panel A: Financial Firms						
Variable	Sign	Coefficient (β)	Standard Error	t-Statistic	p-Value	Sig
Constant (β0)		15.32	3.42	4.48	0.000	***
BS	+	0.25	0.10	2.50	0.014	**
BI	+	0.22	0.12	1.83	0.071	*
BGD	+	-0.08	0.05	-1.60	0.111	
FS	+	0.60	0.13	4.62	0.000	***
L	+	0.48	0.15	3.20	0.003	***
R-squared: 0.68		**Adjusted R-squared: 0.65**		**F-statistic: 15.23 (p-value = 0.000)**		
Panel B: Non- Financial Firms						
Constant (β0)	+/-	14.20	3.22	4.41	0.000	***
BS	+	0.22	0.09	2.44	0.017	**
BI	+	0.28	0.11	2.55	0.015	**
BGD	+	-0.05	0.06	-0.83	0.407	
FS	+	0.50	0.12	4.17	0.000	***
L	+	0.35	0.14	2.50	0.018	**
R-squared: 0.65		**Adjusted R-squared: 0.62**		**F-statistic: 14.90 (p-value = 0.000)**		

Source: Authors' Compilation, 2024

Notes: CI= Comprehensive Income**;** BS= Board Size BI= Board Independence BGD= Board Gender Diversity FS=Firm Size L =Leverage

*** p < 0.01 (Highly significant), ** p < 0.05 (Moderately significant) and p < 0.10 (Marginally significant)

The regression analysis in Table 7 provides valuable insights into the influence of board characteristics on Comprehensive Income (CI) for listed financial and non-financial firms in Nigeria. The analysis examines key board attributes such as Board Size (BS), Board Independence (BI), Board Gender Diversity (BGD), Firm Size (FS), and Leverage (L), presenting nuanced findings for financial and non-financial sectors. For financial firms, BS is found to have a positive and significant relationship ($\beta = 0.25$, $p < 0.05$) with CI. This suggests that larger boards in financial firms enhance firm performance, likely by providing broader oversight and expertise. Recent studies such as Kalsie and Shrivastav (2023) confirm this, indicating that larger boards lead to improved comprehensive income due to more effective monitoring and diverse perspectives. The finding aligns with corporate governance literature that highlights the importance of board size in improving decision-making in complex organizations like financial institutions.

BI also shows a positive but marginally significant relationship ($\beta = 0.22$, $p < 0.10$). Independent directors may enhance governance by reducing agency conflicts and ensuring accountability, which contributes to improved performance. This result is supported by Luu and Phan (2022), who found that board independence positively impacts financial firm profitability, particularly in countries with developing corporate governance frameworks. In Nigeria, independent boards are crucial as they mitigate risks associated with managerial opportunism.

BGD has a negative but insignificant relationship ($\beta = -0.08$, $p > 0.10$) with CI, indicating that gender diversity may not directly influence financial firms' comprehensive income. This finding contrasts with the global emphasis on gender-diverse boards as a performance-enhancing factor. However, Faccio, Marchica, and Mura (2023) argue that while gender diversity has the potential to improve governance, its immediate impact on financial outcomes may be limited by existing corporate structures and industry dynamics. In Nigeria's financial sector, cultural and regulatory barriers could explain this lack of significance.

Both FS and L show highly significant positive relationships with CI ($\beta = 0.60$, $p < 0.01$ and $\beta = 0.48$, $p < 0.01$, respectively). Larger firms and those with higher leverage tend to have better financial outcomes. Singh and Del Giudice (2023) confirm that firm size is a critical determinant of profitability, as larger firms benefit from economies of scale and have greater access to resources. Meanwhile, González and Rubio (2023) emphasize that leveraged firms, when managing debt effectively, can enhance returns on investment, boosting total comprehensive income. The R-squared value of 0.68 indicates that 68% of the variation in CI is explained by the board characteristics in financial firms, with a highly significant F-statistic ($p < 0.001$), underscoring the robustness of the model.

For non-financial firms, BS continues to have a positive and significant effect ($\beta = 0.22$, $p < 0.05$) on CI. Larger boards are beneficial for non-financial firms as well, suggesting that diverse and larger boards lead to more strategic decisions and improved oversight. Recent empirical evidence from Sharma, Bhatia, and Kumar (2023) supports this finding, showing that board size positively affects firm performance by bringing varied expertise and improving governance quality, particularly in emerging economies. BI is also significantly related to CI ($\beta = 0.28$, $p < 0.05$), indicating that independent directors contribute to better comprehensive income in non-financial firms. This finding is consistent with Agyei-Mensah and Agyemang (2022), who reported that board independence strengthens governance and enhances performance in non-financial sectors by ensuring objectivity in decision-making processes. In non-financial firms, independent directors may focus on long-term goals rather than short-term gains, leading to improved comprehensive income.

Similar to the financial firms, BGD is found to have an insignificant impact ($\beta = -0.05$, $p > 0.10$) on CI in non-financial firms. While the global trend promotes the importance of gender diversity for corporate governance, Ahern and Dittmar (2023) suggest that gender diversity might not translate into immediate financial gains, especially in markets where gender diversity initiatives are still in early stages. This finding could reflect cultural and institutional barriers in Nigeria that limit the immediate impact of gender diversity on financial outcomes.

Firm Size (FS) and Leverage (L) remain strong predictors of CI for non-financial firms, with both showing highly significant positive effects ($\beta = 0.50$, $p < 0.01$ and $\beta = 0.35$, $p < 0.05$, respectively). Larger non-financial firms can leverage economies of scale and have greater financial stability, which directly impacts their comprehensive income. Kazemian and Sanusi (2023) argue that firm size is crucial for improving profitability, as larger firms are better equipped to manage market fluctuations and operational challenges. Leverage, when used effectively, can also amplify returns, as noted by Chowdhury and Mahtab (2023), who found that non-financial firms with optimized capital structures often achieve higher comprehensive income. The model for non-financial firms shows an R-squared value of 0.65, indicating that 65% of the variation in CI is explained by the model, with a highly significant F-statistic ($p < 0.001$), confirming the reliability of the regression.

The findings across both financial and non-financial firms in Nigeria show that Board Size (BS), Firm Size (FS), and Leverage (L) are significant predictors of Comprehensive Income (CI). Larger boards and firms, along with effective leverage, enhance comprehensive income. Board Independence (BI) also positively influences CI, though its impact varies slightly across sectors. Interestingly, Board Gender Diversity (BGD) does not show significant effects in either sector, highlighting potential barriers to realizing its full impact in Nigeria’s corporate governance environment. These findings are in line with recent empirical evidence, demonstrating that corporate governance structures significantly shape firm performance, though contextual factors such as industry, culture, and regulatory environments may moderate these effects.

Effect of Board Characteristics and Other Comprehensive Income of Listed Firms in Nigeria

The correlation analysis presented in Table 6 examines the relationship between board characteristics and OCI of listed financial and non-financial firms in Nigeria. The analysis reveals varying degrees of association between different board attributes and OCI, highlighting the roles of board size, independence, gender diversity, firm size, and leverage in influencing firms' broader comprehensive income. This interpretation is divided into financial and non-financial firms to provide a clearer understanding of the implications.

In the case of financial firms (Panel A), BS shows a positive and moderately strong correlation with OCI ($r = 0.55$), indicating that firms with larger boards tend to have higher levels of other comprehensive income. This suggests that board size plays an important role in financial firms' performance, possibly due to the enhanced decision-making capacity and oversight that larger boards provide. This finding aligns with empirical evidence from studies such as Uwuigbe et al. (2020), which found that larger boards contribute positively to corporate financial outcomes in Nigeria by providing a broad range of expertise and perspectives.

Table 8

Correlation Analysis of Board Characteristics and Other Comprehensive Income of Listed Firm in Nigeria

Panel A: Financial Firms						
Variables	OCI	BS	BI	BGD	FS	L
OCI	1					
BS	0.55	1				
BI	0.39	0.25	1			
BGD	-0.22	0.10	0.15	1		
FS	0.66	0.38	0.42	-0.18	1	
L	0.50	0.30	0.35	0.05	0.48	1
Panel B: Non-Financial Firms						
OCI	1					
BS	0.40	1				
BI	0.52	0.35	1			
BGD	-0.15	0.08	0.10	1		
FS	0.61	0.28	0.50	-0.20	1	
L	0.42	0.25	0.42	0.00	0.40	1

Source: Authors' Compilation, 2024

Note: Other Comprehensive Income (OCI); Board Size (BS); Board Independence (BI); Board Gender Diversity (BGD); Firm Size (FS) and L= Leverage

BI also exhibits a positive relationship with OCI (r = 0.39), though the correlation is weaker than that of board size. This indicates that independent directors contribute to higher OCI by providing objective oversight and reducing agency conflicts. Similar findings in Nigerian studies, such as Adeyemi and Fagbemi (2021), support this observation, noting that board independence strengthens corporate governance. However, the correlation is not as strong as in advanced economies like the U.S., where studies such as Bhagat and Black (2002) found stronger links between board independence and performance, reflecting the need for more robust governance frameworks in emerging markets

Interestingly, BGD has a negative correlation with OCI (r = -0.22), suggesting that gender diversity on boards may not be contributing positively to comprehensive income in Nigerian financial firms. This result contrasts with findings from advanced economies, where studies like Adams and Ferreira (2009) showed that gender-diverse boards enhance firm performance. In Nigeria, gender inclusion on boards may still be at an early stage, and its impact on firm performance may not yet be fully realized.

The positive and strong correlation between FS and OCI (r = 0.66) suggests that larger financial firms tend to have higher levels of other comprehensive income. This is consistent with the notion that larger firms enjoy economies of scale, better market access, and more resources, leading to superior comprehensive income. Similar results were found in Ojo et al. (2023), who reported that firm size significantly influences financial outcomes in Nigerian firms. Lastly, L also has a positive correlation with OCI (r = 0.50), indicating that financial firms with higher levels of debt tend to generate more comprehensive income. This supports the view that leverage can enhance performance by financing expansion opportunities.

However, the positive correlation also highlights the need for careful management of debt, as excessive leverage can increase financial risk.

In non-financial firms (Panel B), BS shows a weaker but still positive correlation with OCI (r = 0.40), indicating that larger boards contribute to better comprehensive income, though the impact is less pronounced than in financial firms. This is consistent with findings from Uwuigbe et al. (2020), who also observed a positive relationship between board size and performance in non-financial firms in Nigeria, though the effect may be industry-specific. The relationship between BI and OCI is stronger in non-financial firms (r = 0.52) compared to financial firms. This suggests that independent directors may have a more significant impact on governance and performance in non-financial sectors. Studies such as Adeyemi and Fagbemi (2021) corroborate this finding, showing that board independence is particularly important for non-financial firms, where external oversight is crucial to reducing managerial opportunism. As with financial firms, BGD shows a negative but weaker correlation with OCI (r = -0.15), reinforcing the notion that gender diversity on boards has not yet translated into measurable performance improvements in Nigeria's non-financial sector. This contrasts with evidence from more advanced markets, where gender diversity has been linked to better governance and performance outcomes.

FS is positively correlated with OCI in non-financial firms (r = 0.61), similar to the results seen in financial firms. Larger non-financial firms benefit from economies of scale and broader market reach, which enhance their comprehensive income. This finding is consistent with both local and international studies, such as Pervan and Visic (2012), which established firm size as a critical determinant of profitability in non-financial sectors globally. Finally, L shows a positive but weaker correlation with OCI in non-financial firms (r = 0.42). This suggests that while leverage contributes to comprehensive income in non-financial firms, the effect is less pronounced than in financial firms. This observation supports Egbunike et al. (2020), who found that the impact of leverage on performance varies by industry, with financial firms benefiting more from debt-financed growth.

The correlation analysis reveals that board characteristics, particularly board size, board independence, and firm size, are positively associated with other comprehensive income in both financial and non-financial firms in Nigeria. However, the negative impact of board gender diversity suggests that gender-inclusive governance practices have not yet been fully leveraged to improve firm performance in Nigeria, unlike in advanced economies. The role of leverage is also industry-specific, with financial firms benefiting more from higher debt levels than non-financial f3irms. These findings highlight the need for context-specific governance reforms to enhance corporate comprehensive income in Nigeria.

Table 9

Regression Analysis of Board Characteristic and Other Comprehensive Income of Listed Firms in Nigeria

Panel A: Non- Financial Firms						
	Sign	Coefficient (β)	Standard Error	t-Statistic	p-Value	Sig
Constant (β0)		12.45	3.10	4.02	0.000	***
BS	+	0.30	0.11	2.73	0.010	**
BI	+	0.20	0.13	1.54	0.128	
BGD	+	-0.10	0.06	-1.67	0.097	*
FS	+	0.58	0.14	4.14	0.001	***
L	+	0.42	0.16	2.63	0.011	**
R-squared: 0.63		**Adjusted R-squared: 0.60**		**F-statistic: 13.50 (p-value = 0.000)**		
Panel B: Non- Financial Firms						
Constant (β0)		11.33	2.98	3.80	0.000	***
BS	+	0.20	0.10	2.00	0.050	*
BI	+	0.26	0.12	2.17	0.038	**
BGD	+	-0.08	0.05	-1.60	0.120	
FS	+	0.55	0.13	4.23	0.000	***
L	+	0.38	0.16	2.38	0.022	**
R-squared: 0.60		**Adjusted R-squared: 0.57**		**F-statistic: 12.50 (p-value = 0.000)**		

Source: Authors' Compilation, 2024

Notes: CI= Comprehensive Income**,** OCI = Other Comprehensive Income**;** BS= Board Size BI= Board Independence BGD= Board Gender Diversity FS=Firm Size L =Leverage

*** $p < 0.01$ (Highly significant), ** $p < 0.05$ (Moderately significant) and $p < 0.10$ (Marginally significant)

Table 9 examines the relationship between board characteristics and Other Comprehensive Income (OCI) for listed non-financial firms in Nigeria. Key variables such as Board Size (BS), Board Independence (BI), Board Gender Diversity (BGD), Firm Size (FS), and Leverage (L) are analyzed to understand their impact on OCI. The result shows that BS has a positive and significant impact ($\beta = 0.30$, $p < 0.05$) on OCI for non-financial firms, indicating that larger boards tend to positively affect firms' other comprehensive income. This finding aligns with Xu and Cheng (2023), who suggest that larger boards bring diverse expertise and a broader range of opinions, which improves governance quality and financial reporting, including OCI. Larger boards are also better equipped to manage risks and compliance, contributing to higher transparency and firm performance.

Although BI shows a positive but not significant relationship ($\beta = 0.20$, $p > 0.10$) with OCI, it implies that having more independent directors could enhance OCI, but the effect is not strong enough in this case. This finding is consistent with Omran and Kamel (2022), who found that while independent boards improve governance, their direct influence on non-operational financial metrics like OCI may not always be significant, especially in environments where corporate governance practices are still evolving, such as Nigeria.

Interestingly, BGD has a negative but marginally significant effect ($\beta = -0.10$, $p < 0.10$) on OCI, suggesting that gender diversity on the board might negatively influence OCI in the context of non-financial firms. This result might reflect industry-specific or regional challenges in leveraging gender diversity for enhanced performance. Malmendier et al.(2023) argue that while gender diversity has proven benefits for long-term strategic outcomes, its effect on short-term financial indicators like OCI might be limited in certain industries due to entrenched corporate norms and decision-making processes.

FS shows a highly significant positive relationship with OCI ($\beta = 0.58$, $p < 0.01$), indicating that larger firms are more likely to experience higher OCI. This supports the idea that bigger companies have more diversified income streams and are better positioned to manage risk, leading to a more favorable impact on OCI. Empirical evidence from Kassem and Basuony (2023) corroborates this, showing that firm size is a key determinant of comprehensive income due to larger firms' enhanced ability to innovate and hedge against market fluctuations. The relationship between L and OCI is also positive and significant ($\beta = 0.42$, $p < 0.05$), indicating that higher leverage positively impacts OCI in non-financial firms. This is consistent with findings from Saona and Vallelado (2022), who demonstrate that well-managed leverage can enhance a firm's capacity to generate profits, even outside of core business operations, by providing tax shields and improving return on equity, ultimately benefiting OCI. The R-squared value of 0.63 indicates that 63% of the variation in OCI for non-financial firms is explained by the board characteristics and firm-specific variables included in the model. The F-statistic is highly significant ($p < 0.001$), reinforcing the model's robustness.

In Panel B, BS again has a positive and marginally significant effect ($\beta = 0.20$, $p < 0.10$) on OCI, supporting the notion that larger boards in non-financial firms contribute to better governance and financial reporting. This is consistent with the earlier findings from Gul and Leung (2023), who noted that larger boards are more effective at monitoring management and ensuring that comprehensive income disclosures are accurate. In this case, BI shows a positive and significant effect on OCI ($\beta = 0.26$, $p < 0.05$). This suggests that independent directors improve corporate oversight and decision-making, which positively impacts OCI. This finding aligns with Al-Najjar and Abed (2022), who emphasized that independent boards bring more accountability and objectivity, improving non-comprehensive income metrics such as OCI by ensuring better risk management and compliance with reporting standards. BGD, similar to previous findings, does not show a significant relationship ($\beta = -0.08$, $p > 0.10$) with OCI. While global trends emphasize the importance of diversity, Singh and Shah (2023) found that in developing economies, gender diversity initiatives have yet to reach their full potential in contributing to financial outcomes like OCI, due to limitations in inclusivity practices and corporate culture.

FS continues to show a highly significant positive relationship with OCI ($\beta = 0.55$, $p < 0.01$). Larger firms benefit from greater resources and market leverage, which leads to more substantial OCI. Faccio and Marchica (2023) found that larger firms are more resilient to market shocks, enabling them to maintain a favorable OCI during economic fluctuations. Leverage remains a positive and significant factor for OCI ($\beta = 0.38$, $p < 0.05$). This suggests that non-financial firms that strategically use leverage can improve their comprehensive income by optimizing capital structure, which aligns with findings from Raj and Smith (2023), indicating that firms with higher leverage often experience enhanced comprehensive income through improved asset utilization and cost efficiency. The R-squared value of 0.60 indicates that 60% of the variation in OCI is explained by the board characteristics and other variables, and the F-statistic is highly significant ($p < 0.001$), confirming the model's explanatory power.

The results indicate that Board Size (BS), Firm Size (FS), and Leverage (L) are consistent and significant predictors of Other Comprehensive Income (OCI) for non-financial firms in Nigeria. These findings underscore the importance of governance structures, particularly board size and firm resources, in driving OCI. Board Independence (BI) also plays a crucial role in improving OCI, though its effect varies slightly across models. Interestingly, Board Gender Diversity (BGD) does not show a significant impact, suggesting that gender diversity's role in improving comprehensive income, especially OCI, might require further institutional support and cultural change within Nigeria's corporate governance framework. The results are consistent with recent empirical findings, confirming that robust corporate governance and firm-specific factors are vital to enhancing comprehensive income performance in emerging markets.

5. Conclusion and Recommendations

Based on the findings of the study, we conclude that board size, board independence, and board gender diversity significantly influence the comprehensive income of listed firms in Nigeria. Specifically, board size positively impacts comprehensive income (CI) and other comprehensive income (OCI), as larger boards provide diverse expertise and robust oversight, though excessively large boards may face coordination challenges. Similarly, board independence enhances financial transparency and accountability, aligning with agency theory, as independent directors help mitigate conflicts of interest and promote effective governance. However, board gender diversity has not demonstrated a significant positive impact on CI or OCI in the Nigerian context. This indicates that socio-cultural barriers and tokenism may limit its potential benefits, such as innovation and inclusivity, in fostering improved financial outcomes.

Based on the conclusion, it is recommended that firms optimize their board size by maintaining a balance that allows for diverse expertise and effective decision-making without creating inefficiencies from excessive size. Regulatory authorities should provide clear guidelines to help firms determine an optimal board size tailored to their specific needs. It is also recommended that efforts to strengthen board independence be intensified. Policymakers and corporate regulators should enforce stricter governance codes mandating a higher proportion of independent directors to enhance transparency, accountability, and comprehensive income. Lastly, to address the limited impact of board gender diversity, it is recommended that organizations adopt inclusive policies and practices that empower women to contribute meaningfully to board decisions. Mentorship programs, leadership training, and targeted initiatives should be introduced to address socio-cultural barriers and ensure that gender diversity on boards is genuinely impactful, aligning with global best practices for corporate governance.

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