

BOARD INDEPENDENCE AND CAPITAL STRUCTURE OF NIGERIAN NON-FINANCIAL LISTED FIRMS: THE MODERATING ROLE OF INSTITUTIONAL OWNERSHIP

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Abstract: The Nigerian corporate environment has the potentials for high information asymmetry and less disclosure due to the weak institutional structure and an ineffective market for corporate control. These instances may undermine the monitoring capacity of independent directors in the boardroom. Thus, signifying the need for a complementary corporate governance mechanism to boost investors' confidence. This research views that institutional investors have the incentives to strengthen board governance, given their sophisticated financial expertise and management skill. Therefore, this paper measures the moderating role of institutional ownership on the relationship between board independence and firms' capital structure. The study analysed the balanced panel data of 56 Nigerian non-financial listed companies for seven years (2012-2018) using the random effects technique. This study presents evidence that higher levels of institutional ownership strengthen the effect of board independence on the firms' leverage and vice versa. Hence, the result implies that managers may face stringent monitoring when institutional investors and independent directors interact. Such superior monitoring may compel managers to take on higher leverage to boost firm' value. Our finding has an important policy implication on enhancing sound corporate governance practices, particularly for firms operating in developing countries where the market for corporate control is ineffective.

Keywords: *Board independence, Capital structure, Nigerian listed companies*

1. Introduction

The relationship between board independence and capital structure emanates from the predictions of the agency and resource dependency theories. These frameworks argue that independent outside directors promote board of directors' monitoring role, reduces information asymmetry, which in turn enhances the ability of firms to secure a substantial amount of debt capital to boost firms' value (Fama & Jensen, 1983; Pfeffer & Salancik, 2003; Tarus & Ayabei, 2016). Accordingly, some studies emphasise that firms with a higher proportion of independent directors on their boards are associated with a levered capital structure (Abor, 2007; Jaradat, 2015). On the contrary, a stream of the literature suggests that the presence of independent outside directors raises firms' stock market prices, presumably

due to the reputations and expertise of these directors. As such, companies with a substantial number of outside directors rebalance their capital structures with more of equity because of the improved stock market price. This instance leads to the prediction that the supply of leverage decreases as the ratio of outside directors on boards rises (Dimitropoulos, 2014; Kyriazopoulos, 2017; Wen, Rwegasira, & Bilderbeek, 2002).

Interestingly, this research focuses on the Nigerian corporate environment because of its unique institutional structure that has implication on corporate governance practices. First of all, based on the ranking released in the year 2020 by the world bank, Nigeria served as the largest economy in the African continent. It has a Gross Domestic Product (GDP) of \$448.12 billion in the year 2019, which placed the country ahead of South Africa and Egypt with an estimated GDP value of \$351.432 and \$303.175 billion respectively (World Bank, 2020). This estimate may serve as a guide to potential investors in channelling their investable funds into the region. Thus, Nigeria may be of keen interest to these investors given that the literature has establishes a link between GDP growth and the inflow of foreign direct investment to the developing economies (Iamsiraroj, 2016; Mottaleb & Kalirajan, 2010). More importantly, the corporate governance framework guiding the conduct of companies in Nigeria contains a provision suggesting that all the listed firms in the country should have at least one independent director on their boards. This is for the purpose of enhancing high disclosure and transparency in firms' governance in the country.

However, the firms operating in Nigeria face acute shortage of leverage to finance their investment opportunities. In this regard, empirical evidence by Ibhagui and Olokoyo (2018) and Sani, Alifiah and Dikko (2020) report that short-term debt constitutes a significant fraction of the capital structure of Nigerian listed firms. Consequently, heavy reliance on short-term debt may cause severe financial instability to such companies if eventually, creditors become unwilling to roll-over such debts. The inability of the firms to secure a considerable amount of borrowings has been attributed to the prevailing condition of the Nigerian capital market. The market is associated with high transaction costs, low liquidity position and high information asymmetry, and also there is a crowding-out effect of corporate borrowings (Ahmad and Fatima, 2017). As a result, the Nigerian listed firms mostly borrow from private banks to finance their operations. More often, these commercial banks prefer to lend their funds on a short-term basis due to the high information asymmetric associated with long-term borrowing (Ibhagui & Olokoyo, 2018; Oino & Ukaegbu, 2015).

Likewise, the Nigerian corporate environment possesses high information asymmetry due to the weak institutional structure and the ineffective market for corporate control (Abdullahi, Ishak, & Sawandi, 2018; Chijoke-Mgbame & Mgbame, 2018; Odeleye, 2018). This market constraint and institutional deficiencies may weaken the monitoring role of independent directors in Nigeria. Hence, suggesting the need for complementary corporate governance mechanism. According to agency literature, in an environment where the market for corporate control and institutional frameworks are ineffective or absent, controlling the opportunistic behaviour of managers rest with the corporate ownership (Fama & Jensen, 1983; Jensen & Meckling, 1976). Although the existing literature unveils different forms of corporate ownership, agency theory declares that institutional ownership is relatively more active than the other types of corporate ownership. Thus, the monitoring capacity of these investors is distinct due to their professional knowledge, financial expertise and management skills (Alvarez, Jara, & Pombo, 2018; Gillan & Starks, 2000). Example of institutional investors includes banks, insurance firms, mutual funds and pension funds.

Accordingly, Institutional investors are becoming a vital organ in firms' financing decisions due to their active role in the Nigerian capital market (Ozo & Arun, 2019; Uche, Adegbite, & Jones, 2016). They invest in short-term and long-term securities traded on the Nigerian equity and debt markets. Therefore, this article measures the moderating role of institutional ownership on the relationship between board independence and capital structure of the Nigerian non-financial listed firms. Past studies in Nigeria on this subject matter dwelled more on examining a direct effect and also have a limited scope (Abdul-Qadir, Yaroson, & Abdu, 2015; Ganiyu & Yisau, 2012; Kajola, Olabisi, & Fapetu, 2019). To address this gap, this study employs a moderation analysis and a relatively exploit large sample size to extend the existing literature.

Consequently, empirical evidence from this research shows that the interaction between board independence and institutional ownership yields a positive and significant coefficient. Thus, indicating that institutional monitoring strengthens the effect of independent directors on the firms' leverage. Specifically, the evidence demonstrates that this interaction may serve as a viable corporate governance mechanism that can minimise the agency cost of debt and thereby increasing the supply of borrowings.

The rest part of this paper proceeds as follows; the second section covers a literature review and hypotheses development. Section three explains the research methodology, while part four displays the empirical results and discussions. Lastly, section five contains the concluding remarks.

2. Literature Review and Hypotheses Development

The agency theory focused on how the separation between risk-bearing and decision-making functions in organisations leads to agency conflicts between managers and shareholders (Jensen & Meckling, 1976). As a result of this separation, the management of firms' resources is vested under the control of decision agents, often referred to as firms' managers. Given this, this theory assumed that managers might often act in contrary to the shareholders' best interests. Therefore, the agency framework suggested that companies should set up a board of directors to monitor the actions of firm managers on behalf of the shareholders (Muniandy & Hillier, 2015). According to this perspective, the board of directors' primary role is to ratify the policy decisions initiated by top-level management as well as to monitor the implementation of such policies. The literature typically classified directors into internal and outside/independent directors (Kesner, 1988). The internal directors are current employees of an organisation who are under the control of a chief executive officer (CEO). On the other hand, the outside directors are non-executive directors, they are not full-time employees of a firm and thus are not under the control of management.

Specifically, the agency theorist emphasised that corporate boards should be composed with a higher number of independent /outside directors. These types of directors have the incentives to monitor managers diligently due to their independence and expertise. They serve as professional referees who can objectively evaluate and scrutinise the actions of firms' managers to ensure that shareholders' interest is protected (Bathala & Rao, 1995). In addition, most independent directors of firms are either executive directors in other companies, and they may also possess expertise in law or finance. Thus, these directors may provide crucial support to the managers of the companies they sit as outside directors in resolving specialised decisions problems (Fama & Jensen, 1983). In sum, according to the agency viewpoint, the presence of independent directors on corporate boards may enrich the board of directors' decisions quality and thereby enhancing firms' internal governance

system. In effect, this improved governance system due to the presence of outside board members has a bearing on the firms' ability to secure external funding to raise their profitability level.

On the other hand, the resource dependency theory also provided some explanations on the impact of board independence on firms' capital structure choices. The resource dependence framework argued that the board of directors' primary function is to provide companies with counsel, legitimacy and advice (Pfeffer, 1973; Pfeffer & Salancik, 2003). In particular, outside directors are hired purposely to serve on corporate boards because of their expertise, acceptance, and skills. More importantly, independent or outside directors often assist firms in securing finances at favourable terms from their external constituencies (Gales & Kesner, 1994; Pearce & Zahra, 1992). Also, firms can obtain legitimacy by appointing individuals with recognition and exceptional capability on their boards to secure wider acceptance and community support (Hillman & Dalziel, 2003). In a nutshell, the resource dependency approach looked at how independent directors link companies to strategic resources that they require for their growth and development. Hence, the theory believed that firms with a substantial number of external board members might have a greater chance of reducing uncertainties of obtaining future finances.

Consistent with the above theoretical arguments, empirical studies showed that board independence and capital structure measured by total debt ratio are positively associated (See, Abor, 2007; Jaradat, 2015; Tarus & Ayabei, 2016). On the contrary, a stream of the literature found that firms' total debt ratio decreases as the proportion of external directors on corporate boards rise (Dimitropoulos, 2014; Kyriazopoulos, 2017; Wen et al., 2002). Given these findings and the theoretical predictions, this study formulated the following hypothesis:

***H1:** As the number of independent directors rises, the debt ratio in the capital structure of Nigerian non-financial listed firms increases.*

Additionally, the literature justified that institutional ownership impacts strongly on the firms' financing choices. In this regard, the agency theory stressed the significance of corporate ownership in shaping policies and mitigating the failure of internal control in organisations (Jensen, 1993). Notably, this perspective emphasised that institutional ownership has a substantial impact on strengthening corporate governance best practices. Institutional investors serve as a monitor for management policies and also assist in ensuring the effective functioning of corporate boards. Therefore, firms with a higher proportion of institutional shareholding are associated with more debts in their capital structure to limit managerial discretion. Similarly, Chaganti and Damanpour (1991) reported that institutional investors with closely held stocks have a higher power to override the decision process through their representation on the board of directors. In support of this submission, studies by Dimitropoulos (2014), Sun, Ding, Michael and Li (2015) and Uddin, Khan and Hosen (2019) found a significant positive relationship between institutional ownership and total debt. This positive effect of institutional ownership on financial leverage supported the argument that institutional shareholders can neutralise the entrenchment behaviour of managers due to their stringent monitoring strategies. Such effective monitoring would constraint managers to employ high debt level to enhance shareholders' wealth.

Similarly, institutional shareholders can directly monitor the CEO and his management team because they have the incentives to influence various decisions at board level through

the seats they occupy. According to Mallin (2012) and Wang and Shailer (2018), institutional shareholders influence decisions of the companies they invested in, through dialogue with management or with their voting power. Moreover, empirical evidence showed that firms with concentrated institutional ownership experienced a dramatic improvement in their policy initiatives and decisions. Accordingly, studies by Erenburg et al. (2016) and Ma (2019) argued that the active and diligent supervision of CEOs and executive directors by institutional shareholders assist investee firms in gaining better financial performance. Given this review, one may notice that superior monitoring from institutional investors may influence firms to adopt more levered capital structure to boost firms' value. In this way, this article predicted that the presence of institutional shareholders might encourage the Nigerian non-financial listed firms to employ a substantial proportion of debt when designing their capital structures. Hence, we developed the following hypotheses:

***H2:** Institutional ownership is positively associated with the leverage ratio of Nigerian non-financial listed companies.*

***H3:** Institutional ownership positively influences the relationship between board independence and debt ratio of Nigerian non-financial listed firms.*

Moreover, this paper designed a conceptual framework based on the hypotheses developed to enable us to comprehend the focus of the present study. As shown by Figure 1, hypothesis one (H1) measured the direct relationship between board independence and capital structure measured by total debt, and we expect this relationship to be positive. Also, hypothesis two (H2) tested the effect of institutional ownership on the firms' capital structure, and this effect also is assumed to be positive. Lastly, hypothesis three (H3) examined the moderating effect of institutional ownership on the relationship between board independence and capital structure, and we expect a positive moderating effect based on the review provided.

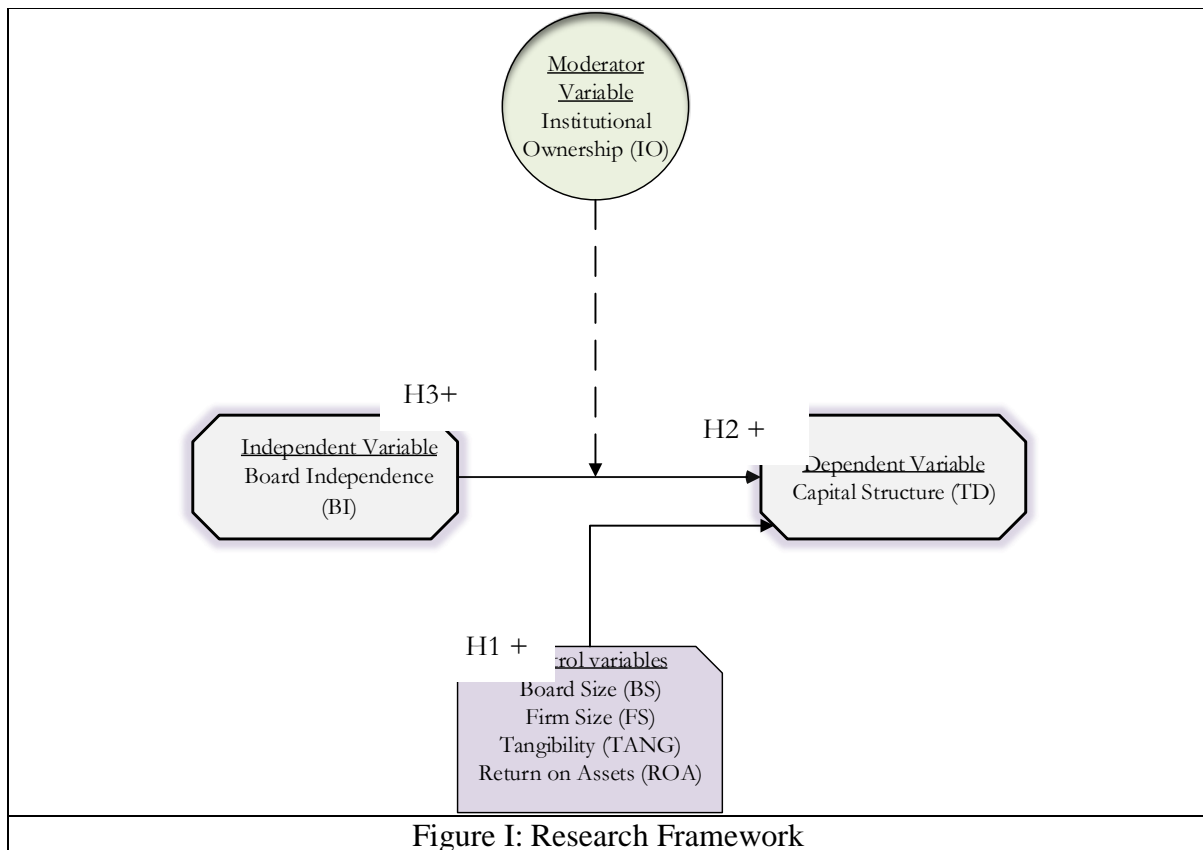


Figure I: Research Framework

3. Research Methodology

3.1 Data Source and Sampling

This study generated its data from the annual reports and account of the sampled firms covering the period from 2012-2018. Thus, the research utilised the secondary source of data collection. Also, the paper designed its sample data in the following manner. We concentrated on non-financial listed companies because the financial firms are subjected to different regulation and a unique financial reporting framework. Hence, the capital structure composition of financial institutions is substantially different (Rajan & Zingales, 1995). Since this study measured capital structure using a debt ratio, we focused on firms that disclosed borrowed capital in their financial statements. Finally, for us to have complete data for our analysis, this research dropped companies with missing data within the period under review. Consequently, the final sample of this study consists of a balanced panel data set of 56 Nigerian non-financial listed companies.

3.2 Study Variables and Measurement

Moreover, regarding the study variables, our primary explanatory variable is board independence. This study measured board independence as the number of independent directors over the total number of board members. Based on the assumptions of the agency and resource dependency theories, firms with a substantial number of external board members may have a greater chance of securing external borrowing at favourable terms (Abor, 2007; Pearce & Zahra, 1992). Perhaps due to the reputation and connections of these independent board members. Also, in this research, the capital structure represents the dependent variable, and we measured it using the book value of total debt to book value of

total assets. Empirical studies emphasised that measuring debt using book value is more consistent and reliable in decision making because book value is relatively insensitive to price fluctuations (Cassar & Holmes, 2003). Besides that, Graham and Harvey (2001) reported that managers focus mainly on book values when setting their capital structure.

In addition, institutional ownership served as the moderating variable in this study. Institutional investors have diverse monitoring mechanisms at their disposal, and thus, their presence in firms may promote sound corporate governance practice. This article measured institutional ownership as the percentage of equity shares owned by institutions such as banks, insurance companies, investment funds and pensions organisations. The choice of this measurement stemmed from the fact that equity ownership confers a voting power to shareholders (Chaganti & Damanpour, 1991; Fosberg, 2004). Hence, this study believed that institutional investors' moderating effect increases as their equity ownership rises.

Moreover, to minimise specification bias and also to empower our regression models, we employed board size, firm size, tangibility and return on assets as control variables. We quantified board size as the number of board members. However, the extant literature showed contradictory view regarding the effect of board size on firms' financing choices. In this context, resource dependency theory argued that there is a positive relationship between board size and board diversity. Hence, companies are encouraged to set-up large boards to enable them to attract diverse resources and expertise from the board composition (Al-Bassam, Ntim, Opong, & Downs, 2018; Pfeffer & Salancik, 2003). On the other hand, agency theory cautioned firms not to have an oversized board of directors because larger boards suffer from poor coordination and ineffective monitoring (Yermack, 1996). In line with the reasoning of the agency literature in this regard, empirical studies by Dimitropoulos (2014) and Kyriazopoulos (2017) found a negative relationship between board size and the supply of leverage to firms.

Concerning the effect of firm size on capital structure choices, findings reported that larger companies are associated with a higher debt level (Chipeta & Deressa, 2016; Fitzgerald & Ryan, 2019). This evidence reinforces the argument that Large firms are relatively more diversified, have various return streams, stable earnings and less vulnerable to bankruptcy (Titman & Wessels, 1988). Accordingly, this research measured firm size as the logarithms of total assets. Also, prior studies argued that the level of firms' investment in fixed assets (tangibility) might likewise determine their borrowing decisions. In this research, we estimated tangibility as the ratio of fixed assets over total assets. Firms with a high proportion of tangible assets tend to have higher liquidation value and utilised more debts because they are in a better position to provide collaterals (Rajan & Zingales, 1995). Also, the possibility of assets substitution will be lower in firms with a high level of fixed assets. Therefore, lenders will be more willing to supply their credits to companies with a considerable amount of investments in tangible assets. Empirical studies showed that there is a positive association between tangibility and total debt ratio (Ahmad & Fatima, 2017; Pacheco & Tavares, 2017).

Furthermore, profitability level may equally explain the variation of leverage among firms. Profitability stands as the ratio of net profit before interest and taxes to book value of total assets (ROA). This measure of firm profitability appears to be more appropriate for us to gauge the tax advantage of debt financing. In this context, the agency theory suggested that profitable companies are bound to have free cash flow. Thus, firms with a high profitability ratio should take on more debt to control managers-shareholders agency conflicts (Jensen, 1986). In the same context, Myers (1984) concluded that firms' profitability level increases with financial leverage because interest tax shield benefit accrues to firms as a result of debt

financing. However, a stream of the literature emphasised that that profitable firms focus on internally generated funds due to asymmetric information costs of external funding (Myers, 2001). As such, the debt level in firms' capital structure decreases as their profitability position increases (Julkid & Lau, 2020; Moradi & Paulet, 2019)

3.3: Model Specification

This study aimed at measuring the moderating effect of institutional ownership on the relationship between board independence and capital structure. To achieve this objective, we employed the baseline moderation model specified by Fairchild and Mackinnon (2009), which is given as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \beta_3 XZ_{it} + \varepsilon_{it} \quad (1)$$

Where: X= the independent variable, Y= the dependent variable, Z= the moderator variable.

XZ= the product of X and the moderator variable, β_0 = the intercept of the regression function,

β_1 = the effect of X (independent variable) on Y (dependent variable), β_2 = the effect of Z (moderator variable) on Y (dependent Variable), β_3 = the effect of XZ (interaction of the independent variable and moderator variable on Y (dependent variable), and ε_{it} = the error term. Therefore, the moderation effect occurs when the coefficient of the interaction term is statistically significant (Aguinis, Edwards, & Bradley, 2017).

Since this study sampled 56 listed firms across different industries over seven years (2012-2018), it is more appropriate for us to use a panel data approach. Given this, we first used a Hausman test to determine the proper estimation model between fixed effect and random effect. The Hausman test showed an insignificant result (Prob > chi2 =0.3177) and thereby suggesting that random effect model is more suitable for this study. Thus, the general form of the random effect framework is, as shown in equation two below:

$$y_{it} = \alpha_0 + \beta X_{it} + \omega_{it} \quad (2)$$

Where: y = dependent variable, α_0 is the regression intercept and ω is the composite error term which covers cross-sectional and time-series error components. Hence, by substituting our study variables into the equation (1) and (2), this research specified regression models (3) and (4). The equation (3) tested the direct relationship between board independence and capital structure, while equation (4) measured the moderating effect. These equations are shown below:

$$TD_{it} = \alpha_0 + \beta_1 BI_{it} + \beta_2 BS_{it} + \beta_3 FS_{it} + \beta_4 TANG_{it} + \beta_5 ROA_{it} + \omega_{it} \quad (3)$$

$$TD_{it} = \alpha_0 + \beta_1 BI_{it} + \beta_2 BS_{it} + \beta_3 FS_{it} + \beta_4 TANG_{it} + \beta_5 ROA_{it} + \beta_6 (BI * IO)_{it} + \beta_7 IO_{it} + \omega_{it} \quad (4)$$

Where: TD = total debt, BI = board independence, BS = board size, FS = firm size, TANG = tangibility, ROA = return on assets, IO = institutional ownership and (BI×IO) = interaction between board independence and institutional ownership.

4. Empirical Results and Discussion

This research conducted several diagnostic tests before running the regression analysis in order to specify a less biased model. First of all, we tested for the presence of multicollinearity using the Variance Inflation Factor (VIF). According to Field (2009), A VIF value of 10 indicates the existence of multicollinearity. The VIF of our variables in this study ranged from 1.04 to 1.38 and thereby indicating the absence of multicollinearity. Also, we applied the Breusch-Pagan / Cook-Weisberg test to determine whether there is heteroscedasticity in our data. The result appeared significant (Prob > F = 0.000), and thus exhibiting the presence heteroscedasticity. In this case, one needs to apply a robust regression option to obtain a more consistent and efficient result (Hoechle, 2007). Moreover, we still employed the Breusch and Pagan Lagrangian multiplier test to confirm further the suitability of the random-effects model for our specification. The results appeared significant (Prob > χ^2 = 0.000) and hence reinforcing the appropriateness of the use of random effect estimation in this research. Accordingly, our presentation and discussion of the empirical results are classified into the descriptive statistics, correlation analysis and random effect regression results.

Table 1: Descriptive Statistics

Variable	Mean	Std. Div.	Min.	Max.	Observations
TD	0.2520	0.1226	0.0000	0.8140	392
BI	0.0802	0.1224	0.0000	0.5560	392
BS	8.7678	2.4579	4.0000	17.0000	392
FS	10.1952	0.7720	8.4190	11.9170	392
TANG	0.4295	0.2338	0.0170	0.8780	392
ROA	0.0794	0.1164	-0.3100	0.5290	392
IO	0.1074	0.1513	0.0000	0.7540	392

TD = total debt, BI = board independence, BS = board size, FS = firm size,
TANG = tangibility, ROA = return on assets, IO = Institutional ownership.

Table 1 shows the descriptive statistic of the study variables. The variable (TD) stands the ratio of total debt over total assets, and its average value is 0.2520. This evidence indicates that the total debt represents 25.20% of the total capital that the firms employed. Thus, the result suggests that the Nigerian non-financial listed firms rely heavily on equity financing in funding their operations. Perhaps, because of the difficulty in securing a substantial amount of borrowings from the Nigerian capital market. Also, board independence (BI) shows that 8% of the firms' board members are independent directors. The board size (BS) of the sampled firms indicates an average of nine members approximately, but with a large deviation across the companies.

According to the statistics, the variable firm size (FS), which is measured as the logarithms of the firms' total assets reveals a minimum and maximum ratio of 8.4190 and 11.9170, respectively. Tangibility ratio recorded a mean of 0.4295, but with a wide deviation across the sampled companies. This evidence implies that on average, intangible assets

represent about 57.05% of the firms' assets compositions. The return on assets (ROA) shows that on average, the firms recorded a profitability ratio of 7.5%. This research attributes this low profitability level to the inability of the firms to obtain a substantial amount of

borrowings, which in turn leading to the lower return on assets. The institutional ownership (IO) exhibits a mean of 10.74% and maximum ratio of 75.40%.

On the other hand, Table 2 below contains the correlation results among our study variables. The evidence shows that there is no strong relationship between the explanatory variables. Therefore, the result reveals that our model specification is free of the multicollinearity problem.

Table 2: Correlation Matrix

Variable	TD	BI	BS	FS	TANG	ROA	IO	VIF
TD	1.000							
BI	-0.122**	1.000						1.08
BS	-0.204***	0.104**	1.000					1.15
FS	-0.064	0.220***	0.361***	1.000				1.27
TANG	0.285***	-0.202***	-0.063	-0.263***	1.000			1.12
ROA	-0.634***	0.063	0.001	0.129**	-0.158***	1.000		1.04
IO	0.061	-0.100*	-0.099*	-0.122**	0.094*	-0.076	1.000	1.38

***, ** & * indicate significance at 1%, 5% and 10% respectively.

Notes: TD is the book value of total debt divided by the book value of total assets, BI is the number of independent directors over the total number of board members, BS is the total number of board members, SIZE is the logarithms of the total assets, tangibility is the ratio of fixed assets over total assets. ROA is the net profit before interest and taxes divided by total assets, IO is the percentage of equity shares owned by institutional investors, and (BI*IO) is the interaction between board independence and institutional ownership.

Table 3: Random Effects Regression Results

Model	(3)		(4)	
	Coefficient	P-value	Coefficient	P-value
Constant	1.2279	0.953	0.7475	0.971
Board Independence	-0.0640*	0.066	-0.1203***	0.002
Firm Size	0.0174	0.111	0.0190*	0.078
Tangibility	0.1283***	0.000	0.1283***	0.000
Return on Assets	-0.5019***	0.000	-0.5118***	0.000
Moderator:				
Institutional Ownership	-	-	0.1493**	0.012
Interaction Term:				
(BI×IO)	-	-	0.5889***	0.004
R-Squared		0.4993		0.5103
Wald statistics		253.63		266.55
Prob. >chi2		0.000		0.000

Year dummies	yes	yes
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***, ** & * indicate significance at 1%, 5% and 10% respectively.

Notes: This table shows estimates of equation 3 and 4 for direct relationship and moderating and moderating effect, respectively. TD is the book value of total debt divided by the book value of total assets, BI is the number of independent directors over the total number of board members, BS is the total number of board members, SIZE is the logarithms of the total assets, tangibility is the ratio of fixed assets over total assets, ROA is the net profit before interest and taxes divided by total assets, IO is the percentage of equity shares owned by institutional investors, and (BI*IO) is the interaction between board independence and institutional ownership.

Table 3 reports the random effects regression results, which is classified into the model (3) and (4). Accordingly, model (3) shows the finding on the direct relationship between board independence and capital structure. According to the results, board independence has a significant negative relationship with total debt ratio at the 10% level. This finding suggests that as the number of independent board members rises, the Nigerian non-financial listed companies employ a lower debt level. This evidence is consistent with the results found by Wen et al. (2002) and Kyriazopoulos (2017). These studies argue that the appointment of outside directors is associated with an increase in firms' stock prices. Perhaps, due to the reputation and expertise of such directors. Put differently, top-level managers usually face extensive monitoring when independent directors control a corporate board. This improved monitoring may reduce the need for high debt level in such firms. In this way, Nigerian non-financial listed firms with a considerable number of independent directors may pursue a less levered capital structure. Thus, leading to the estimated negative relationship between board independence and the firms' total debt ratio. Therefore, in light of the preceding discussion, this paper rejects its hypothesis one (**H1**). Instead, the study suggests that an increase in the number of independent directors causes the Nigerian non-financial firms to adopt lower leverage in their capital structures.

Moreover, some of our control variables indicate signs in tandem with the existing capital structure theories. Firm size shows a positive but insignificant coefficient and thereby demonstrating an insignificant effect in predicting the firms' financing behaviour. One possible explanation for this insignificant association between firm size and total debt ratio is that larger companies may be able to resolve information asymmetry with outsiders because of their high level of disclosure. Therefore, lower information asymmetry may raise the market value of equity stock of such firms, which, in turn, causing Nigerian firms with larger size to have more preference for equity financing than debt. Hence, resulting in this estimated weak association between leverage ratio and firm size. Also, tangibility demonstrates a positive and significant impact on capital structure. This empirical result lends support to the argument that firms with a large ratio of tangible assets are in a better position to provide collaterals which is a requisite for securing borrowings. Thus, this positive effect of tangibility on leverage implies that Nigerian non-financial with a higher ratio of fixed assets rebalance their capital structure with more of debt rather than equity financing. As such, this evidence is consistent with the findings that tangibility and firms' debt ratio are positively related (Ahmad & Fatima, 2017; Pacheco & Tavares, 2017). Our regression results likewise

exhibit a strong negative association between profitability and total debt ratio as a proxy for firms' capital structure. This evidence reinforces the conclusion that profitable firms with sufficient retained earnings attached less preference to the external debt (Julkid & Lau, 2020; Moradi & Paulet, 2019).

Furthermore, the regression results in the model (4) measures the moderating effect. It shows how the moderator variable (institutional ownership) influence the dependent variable (capital structure). Then again, this model also indicates the results on the effect of the interaction between board independence and institutional ownership ($BI*IO$) on our dependent variable. Based on the results in the model (4), institutional ownership demonstrates a positive coefficient at the 5% significance level. This evidence is consistent with the conjecture that leverage increases as institutional ownership rises (Dimitropoulos, 2014; Sun et al., 2015; Uddin et al., 2019). Therefore, this finding implies that Nigerian non-financial listed firms with a higher proportion of institutional shareholding are associated with more debts in their capital structure. Given this result, we fail to reject our hypothesis (**H2**).

Additionally, the coefficient of the interaction term exhibits a significant and positive coefficient at the 1% level. The result supports our hypothesis three (**H3**) that Institutional ownership positively moderates the relationship between board independence and debt ratio of Nigerian non-financial listed firms. This positive moderation effect reveals that institutional ownership strengthens the relationship between board independence and capital structure measured by total debt ratio. Hence, the empirical evidence reinforces the argument of the agency theory that institutional investors serve as a monitor for management policies and also assist in ensuring the effective functioning of corporate boards. Such effective monitoring may constraint managers to employ high debt level to enhance shareholders' wealth (Jensen, 1986; Ma, 2019; Wang & Shailer, 2018). Also, the result suggests that superior monitoring by institutional investors, coupled with the supervision of independent directors may boost the confidence of creditors, which, in turn, leads to the supply of more loanable funds. Thus, resulting in the positive moderating effect. The evidence confirms further the potential role of institutional investors in shaping the financing decisions of Nigerian firms.

5. Conclusion

This study investigated the moderating effect of institutional ownership on the relationship between board independence and capital structure of the Nigerian non-financial listed firms. The study analysed the balanced panel data of 56 Nigerian listed companies for seven years (2012-2018) using the random effects technique. This study presents evidence that higher levels of institutional ownership strengthen the effect of board independence on the firms' leverage and vice versa. Hence, this finding implies that stringent monitoring, coupled with the diligent supervision and expertise of the independent directors, may enhance creditors' confidence and thereby leading to the supply of more leverage.

Furthermore, our analysis in this paper provides new insight into the corporate governance literature in the following ways. Firstly, the evidence from this paper demonstrated that the interaction between institutional ownership and independent directors might serve as a viable corporate governance mechanism that can minimise the agency cost of debt and thereby increasing the supply of debt. Likewise, this study contributes to the existing studies by providing a fresh perspective on the determinants of firms' capital structure. More importantly, evidence emanating from this research has some implications on

the policy decisions of the Nigerian non-financial listed firms. Firms should embrace institutional ownership and equally employ a considerable number of independent directors on their boards to enable them secure debt capital at favourable terms. In conclusion, it may be attractive if future studies should focus on how the interaction between board independence and other forms of corporate ownership, such as managerial and foreign ownerships may influence firms' leverage. Likewise, similar studies can be undertaken in other developing countries to make the finding of this research more robust.

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