CORPORATE GOVERNANCE AND PRODUCTIVITY OF MANUFACTURING COMPANIES

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Abstract

The objective of this study is to empirically investigate the relationship between corporate governance and productivity of selected Nigerian manufacturing companies. The study adopted ex-post facto research design. Random sampling was used to select 15 companies out of a total population of 61 manufacturing companies listed on the Nigerian Exchange Group, for a period of 2019 to 2023. Both descriptive and inferential statistical methods were used to provide a comprehensive understanding of the variables under study. The results of the study show that there is a positive relationship found between board composition and productivity. Also, it was found that there is a significant positive relationship between board independence and productivity. While board size was found to have an insignificant relationship with productivity, the study did not find a significant association between board gender diversity and productivity. It was therefore suggested that practitioners and policymakers should enhance governance practices and improve firm productivity by prioritizing diversity and independence in board composition.

Keywords: Corporate Governance, Productivity, Manufacturing Companies

JEL classification: G34, O16

1. INTRODUCTION

Numerous academic fields, including accounting, economics, engineering, and operations research, have researched the problems related to the definition and assessment of productivity. It's not too difficult to define "productivity" at its most fundamental level. It is the output-to-input ratio in each production scenario. Growing productivity suggests that fewer inputs are needed to create the same level of output, or that more output is produced with the same quantity of inputs (Rashid 2011). Increasing efficiency would therefore indicate rising productivity, just as shifting outside of a production frontier likewise means growing productivity. A firm is said to be functioning on the production frontier if it is efficient, meaning it is achieving "best practice". Although the fundamentals of productivity are simple,

challenges arise when dealing with different measurement issues, the existence of multiple inputs and outputs, and uncertainty over the best way to represent the production process. Policymakers and researchers cannot find high productivity measurement important given productivity's critical role in driving economic growth and rising living standards.

However, the Nigerian manufacturing sector has experienced its fair share of industry shocks, some of which have resulted in the liquidation of industry firms, (Panasian et al., 2008; Uchenna & Okeule, 2012). Research evaluating the profitability of Nigerian manufacturing companies is highly pertinent and crucial at this point, following the nation's numerous political and economic transitions between regimes. Corporate governance (CG) refers to the framework of systems, rules, practices, and processes by which companies are directed and controlled. It encompasses a set of legal and sound practices designed to monitor the actions of management and directors, thereby mitigating risks arising from potential misconduct by corporate officers. In Nigeria, the focus on corporate governance reform arose from widespread financial reporting fraud, as seen in cases involving African Petroleum, Cadbury Plc, and Oceanic Bank Plc. Issues such as fraud, overtrading, high gearing ratios, aggressive accounting practices, and poor management were the primary causes. To enhance accountability and transparency in the financial sector and support the growth of the Nigerian economy, several codes have been introduced recently. For instance, the Security and Exchange Commission (SEC) revised its code in 2011, and the Central Bank of Nigeria (CBN) reviewed its code in 2014. This research aims to explore and elaborate on the relationship between corporate governance attributes and the performance of listed manufacturing companies in Nigeria. It examines the effects and impacts of corporate governance on the productivity of these companies.

2. LITERATURE REVIEW

2.1 PRODUCTIVITY

Productivity is often measured as the ratio of output to input, as noted by Momade et al (2020) and Shiru et al. (2020). Output represents the products generated by labor, while input utilization measures the skills, time, and effort expended by the labor force. Despite differing viewpoints on productivity, the overarching goal remains consistent: achieving a specified resource, standard, or measurement. Commonly, definitions of productivity emphasize efficiency, which is essential in optimizing resource use across projects (Rogers, 2006; Sveikauskas et al., 2016; Dixit et al., 2019; Ohueri et al., 2018; Alaghbari et al., 2019; Dixit et al., 2019; Shiru et al., 2020). In the Nigerian economy, particularly the manufacturing sector, data on productivity levels are scarce due to the challenges of creating a productivity index. An ad hoc study conducted in 1989 revealed slow overall production growth, with only 30% of respondents in the food and basic metal sectors

reporting increasing productivity (Mahadeo, et al., 2012). Conversely, the Manufacturers Association of Nigeria (MAN) indicated a general decline in industrial productivity during the same period. Although statistics on other performance indicators are available, such as the annual growth rate of manufacturing production, capacity utilization rate, and sub-sectoral contributions to GDP, specific productivity statistics for sub-sectors are often lacking.

2.2 CORPORATE GOVERNANCE

Corporate governance, as explained by Chaudhary and Gakhar (2018), acts as a framework designed to address the principal-agent problem by ensuring accountability to stakeholders. According to Du Plessis et al. (2010), corporate governance involves "the system of regulating and overseeing corporate conduct and balancing the interests of all internal stakeholders and other affected parties to ensure responsible behavior by corporations and achieve the maximum level of efficiency and profitability." Sullivan (2009) describes it as the process by which a company's operations are managed to protect the interests of all stakeholders. Miringu et al (2011) broadens this definition to encompass both public and private entities, including the rules, laws, and regulations that govern the interactions between company management and stakeholders. Corporate governance is the framework governing the direction and control of business corporations, outlining the distribution of rights and responsibilities among stakeholders and establishing protocols for decision-making on corporate affairs.

2.3 BOARD COMPOSITION

Board composition is a pivotal element of corporate governance that shapes a firm's governance strategy. It includes executive, non-executive, and independent directors, with the latter having no direct or indirect ties to the company. The board composition suggests the size of the board and the ratio of executive, non-executive, and independent directors, which collectively reflect the degree of independence in the decision-making process (Wilson-Oshilim et al.,2021).

2.4 BOARD INDEPENDENCE

Board independence is crucial for fostering sound corporate governance. In Nigeria, regulations mandate a mix of executive and non-executive directors, with a majority being non-executive. This requirement aims to provide an oversight into executive directors' activities. Birmig et al (2010) state that including non-executive directors enhances board independence, facilitating better decision-making and protecting the interests of all stakeholders, especially minority shareholders.

2.5 BOARD GENDER DIVERSITY

The representation of women on corporate boards has significantly increased, with gender diversity becoming more prominent. (Daily et al., 1997).

Board gender diversity refers to the inclusion of female directors and is a vital aspect of corporate governance. (Carter et al., 2003). The concept of board diversity posits that a company's board should reflect gender, race, and professional experience proportions found in society. Gender diversity on boards is crucial due to the growing number of female employees, and firms prioritize it for both ethical reasons and its positive impact on performance. Research by Carter et al., (2003) shows that companies with at least two female board members tend to perform better. Female directors are known to consider a broader range of stakeholders when making decisions. Adams et al (2004) suggest that women have a keen understanding of customer behavior and needs. Studies by Byrnes et al. (1999) and Rashid et al (2010) indicate that female directors are less likely to take risks and are less overconfident in decision-making. Additionally, Croson and Buchan (1999) found that women tend to be more reliable and cooperative, enhancing board dynamics.

2.6 BOARD SIZE

Board size refers to the total number of directors in a corporation (Abdullah, 2004). The number of directors can vary widely, and it is generally believed that limiting board size can improve company performance. This is because while a larger board may offer more diverse expertise, the challenges of communication and decision-making in larger groups can outweigh these benefits. Empirical research has often found a negative correlation between board size and profitability. Yermack (1996) and Liang and Li (1999) discovered an inverse relationship between board size and profitability in their studies of companies in China and Finland, respectively. Although a larger board brings diverse expertise, coordination and communication difficulties increase with board size, reducing the board's effectiveness in monitoring management. (Eisenberg et al., 1998; Jensen, 1993; Lipton & Lorsch, (1992).

2.7 THEORETICAL FRAMEWORK

2.7.1 PRINCIPAL-AGENT THEORY

This theory states that there is an issue because managers are not the owners of the firm's resources. Grossman & Hart, (1986). According to Letza, Sun, and Kirkbride (2004), directors were probably not as careful with other people's money as they were with their own, which is how the agency problem came about. According to Jensen and Meckling (1976), an agency relationship is a contractual arrangement wherein one or more individuals, referred to as the principal(s), engage another individual, known as the agent, to perform a service on their behalf. This arrangement involves the agent having some decision-making authority. Because the directors, who function as the agent, might not always act in the owners' best interests the principals the agency relationship can present challenges. The agency’s cost consists of the costs associated with bonding, monitoring the agent, and providing incentives for the agent on behalf of the principal. The managers learn more about

the company than the owners do, which is one effect of the agent-principal relationship. As a result, agents have better access to information than shareholders, a situation known as information asymmetry. However, monitoring is expensive for individual principals. By establishing a reporting system that satisfies every shareholder's information requirement, the overall costs of information gathering can be decreased.

2.8 REVIEW OF EMPIRICAL LITERATURE

Chiang (2005) studied how corporate governance indicators, like transparency, relate to operating performance. They found a positive link between corporate transparency and operating performance, suggesting transparency is crucial for evaluating corporate performance. Better corporate governance also showed a positive relationship with operating performance, indicating that resources invested in improving corporate structure could enhance performance.

Klein, Shapiro, and Young, (2005) examined the relationship between firm value and effective corporate governance for 263 Canadian firms. They found that corporate governance matters in Canada, with size consistently negatively related to performance, while advantage, growth, and profitability are positively related. However, no evidence suggests that a total governance index affects firm performance, and board independence shows no positive effects, particularly for family-owned firms.

In Uganda, Rogers (2005, 2006) conducted investigations on corporate governance and performance within Ugandan commercial banks. They found that corporate governance predicts financial performance, with openness and reliability emerging as significant contributors to financial performance. Rogers recommended that both local and international firms enforce full disclosure and transparency practices to enhance trust and competitiveness.

Previous studies on corporate governance attributes and listed manufacturing firms in Nigeria have predominantly concentrated on firm performance rather than productivity. There is a scarcity of research specifically investigating productivity and its association with corporate governance attributes in Nigeria. However, some studies have explored this relationship in Taiwanese manufacturing companies, uncovering a curvilinear connection between total factor productivity (TFP) and ownership structure. These studies suggest that higher levels of collateralized shares by boards of directors may lead to decreased firm productivity (Wilson-Oshilim, Owie & Anechebe, 2018). This current study aims to contribute to existing literature by examining the relationship between corporate governance attributes such as board composition, board independence, board gender diversity, and board size and productivity indicators, including return on assets (ROA), TFP, inventory turnover ratio, and sales per employee. Drawing on theoretical arguments and empirical evidence, we expect to find a positive

relationship between corporate governance attributes and firm productivity, resulting in favorable ROA, TFP, inventory turnover ratio, and sales per employee. By specifically focusing on productivity in listed manufacturing firms in Nigeria, this study seeks to address the research gap and offer valuable insights into the influence of corporate governance on productivity within this specific context.

2.9 RESEARCH GAP

Numerous studies have delved into the correlation between different governance mechanisms and firm performance, yielding varied findings. While some studies focus on individual governance mechanisms' effects on performance, others explore how multiple mechanisms collectively influence it. However, there remains a notable gap in the literature, with many studies predominantly centered on the banking sector (Wachudi & Mboya, 2009; Mang'unyi, 2011; Nyamongo & Temesgen, 2013; Miringu & Muoria, 2011). Given the manufacturing sector's pivotal role in supporting all other sectors, it's crucial to examine its governance. Proposed measures for the manufacturing sector include initiatives to enhance the supply of agricultural products for agro-processing, Value Added Tax (VAT) remission, and endeavors to expand markets in Sub-Saharan Africa through organizations like the East Africa Community and the Common Market for East and Southern Africa. Before delving into other variables, it's imperative to scrutinize top management and assess if their corporate governance mechanisms impact performance. Against this backdrop, there's a compelling necessity to conduct a study on the relationship between corporate governance and the productivity of manufacturing firms listed on the NGX.

3.0 METHODOLOGY

3.1 RESEARCH DESIGN

For this study, the correlation research design, which involves the determination of relationship between variables being investigated is adopted. Specifically, correlation research design shows the strength and/or direction of the relationship that exists between two or more variables using real world information/data. The population of this study comprise of sixty-one (61) manufacturing companies listed in the Nigeria Exchange Group (NGX) and active between 2019 and December 31, 2023. A sample of fifteen (15) manufacturing companies was selected as representative of the entire population. This study utilizes secondary source as a means of data collection. The data covers a period of five years (2019 – 2023).

3.2 MODEL SPECIFICATION

The aim of this study is to investigate corporate governance attributes and productivity of listed manufacturing companies in Nigeria. In this context, Corporate Governance Attributes (CGA) represents the independent variable and was proxied

using four (4) parameters, which are: (i) Board Composition (BCOM) (ii) Board Independence (BIND) (iii) Board Size (BSIZ) (iv) Board Gender Diversity (BGDV). On the other hand, productivity represents the dependent variable which was proxied by Return on Investment (ROI). In determining the value for Return on Investment, data on net income and cost of investment were obtained from the annual financial statement of listed sample companies. Precisely, ROI in this research was measured as Net Income divided by Initial Cost of Investment. The model specification was modified from Korolo (2023); Ugwu et al., (2021). The functional form of this relationship can be written as:

Productivity (PR) = Corporate Governance Attribute (CGA)

PR = f(CGA)

The equation is stated as:

CGA = BCOM, BIND, BSIZ, BGDV

PR = ROI

The econometric form of the model is written as:

$$ROI = \beta_0 + \beta_1 BCOM + \beta_2 BIND + \beta_3 BSIZ + \beta_4 BGDV + \beta_5 FSIZ + \beta_6 FAGE + \varepsilon \quad (1)$$

Where:
ROI = Return on Investment
BCOM = Board Composition
BIND = Board Independence
BSIZ = Board Size
BDIV = Board Diversity
FSIZ = Firm Size
FAGE = Firm Age
β_0 = Intercept parameter
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Regression coefficient
ε = Error term
a priori expectation $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 > 0$

3.3 METHOD OF DATA ANALYSIS

Data was analyzed using both descriptive and inferential statistical methods to provide a comprehensive understanding of the variables under study. Descriptive statistics, including mean, median, standard deviation, minimum, and maximum values, were employed to summarize and describe the main features of the data. This approach facilitated a clear comprehension of the distribution and variability of the variables, offering insights into their central tendency and dispersion. In addition to descriptive analysis, inferential statistics were applied to draw conclusions and make predictions based on the data. The Ordinary Least Squares (OLS) regression analysis

technique was utilized for this purpose. OLS regression is a powerful statistical method that estimates the relationships between a dependent variable and one or more independent variables. By applying this technique, the study aimed to identify significant predictors and quantify their impact on the dependent variable. This dual approach of using both descriptive and inferential statistics ensured a robust and thorough analysis of the data, enhancing the reliability and validity of the study's findings.

4. DATA PRESENTATION AND ANALYSIS

4.1 DATA PRESENTATION SHOWING DESCRIPTIVE STATISTICS OF THE VARIABLES

Table 1: *Descriptive Statistics*

	ROI	BCOM	BIND	BSIZ	BGDV	FSIZ	FAGE
Mean	0.343269	0.612987	0.302889	9.466667	2.080000	6.979573	57.06667
Median	0.110934	0.692308	0.285714	9.000000	2.000000	7.459422	53.00000
Maximum	7.709597	0.875000	0.833333	15.00000	4.000000	8.941517	142.0000
Minimum	-11.94646	0.111111	0.000000	5.000000	0.000000	4.021313	21.00000
Std. Dev.	2.070649	0.201283	0.258900	2.642344	1.291971	1.260067	29.57918
Skewness	-1.582137	-0.907205	0.607787	0.486730	0.229104	-0.983055	1.405745
Kurtosis	21.00250	2.628017	2.309662	2.417989	1.708862	3.233397	4.770440
Jarque-Bera	1044.071	10.72018	6.106826	4.019880	5.865601	12.25021	34.49667
Probability	0.000000	0.004700	0.047198	0.133997	0.053248	0.002187	0.000000
Sum	25.74518	45.97402	22.71666	710.0000	156.0000	523.4679	4280.000
Sum Sq. Dev.	317.2816	2.998088	4.960164	516.6667	123.5200	117.4949	64744.67
Observations	75	75	75	75	75	75	75

Source: Researcher's Computation (2024), EViews 9.0

Table 1 presents the descriptive statistics for the variables included in the study: Return on Investment (ROI), Board Composition (BCOM), Board Independence (BIND), Board Size (BSIZ), Board Gender Diversity (BGDV), Firm Size (FSIZ), and Firm Age (FAGE). Descriptive statistics provide a summary of the central tendency, dispersion, skewness, kurtosis, and distribution of the data. The mean ROI value is 0.343, indicating an average return on investment across the sample manufacturing companies. However, the median ROI is considerably lower at 0.110, suggesting that the distribution of ROI values may be skewed due to outliers. The maximum ROI value is notably high at 7.71, indicating the presence of extreme values in the dataset. On the other hand, the minimum ROI is negative, which implies losses in some cases.

Regarding corporate governance attributes, the mean values for BCOM, BIND, and BGDV are 0.613, 0.303, and 2.08, respectively. These values indicate moderate levels of board composition, independence, and gender diversity across the sample. However, there is variability in these attributes as reflected by the standard deviations.

The descriptive statistics also reveal information about the distributional properties of the variables. Skewness values indicate the degree of asymmetry in the distribution, with negative skewness for ROI (-1.58), BCOM (-0.91), and FAGE (-0.98), suggesting a leftward skew in the distribution. Kurtosis values provide insights into the peakedness of the distribution, with ROI exhibiting extremely high kurtosis (21.00), indicating heavy-tailedness and potential outliers. The Jarque-Bera test assesses the normality of the distribution. For ROI, BCOM, and FAGE, the null hypothesis of normality is rejected at conventional significance levels ($p < 0.05$), indicating non-normality in these variables' distributions.

Table 2: *Correlation Matrix*

Correlation	BCOM	BIND	BSIZ	BGDV
BCOM	1.000000			
BIND	-0.639080	1.000000		
BSIZ	-0.031017	0.453325	1.000000	
BGDV	-0.002313	0.220273	0.262050	1.000000

Source: Researcher's Computation (2024), EViews 9.0

The correlation matrix in Table 4.2 reveals insightful relationships between the variables under study. Notably, a significant negative correlation of -0.639 exists between Board Composition (BCOM) and Board Independence (BIND). This finding suggests that as the composition of the board changes, particularly in terms of its diversity or structure, the level of independence within the board tends to decrease. Conversely, there's a moderate positive correlation of 0.453 between BIND and Board Size (BSIZ), indicating that larger boards tend to exhibit higher levels of independence. However, weak correlations are observed between BCOM and BSIZ (-0.031) as well as BCOM and Board Gender Diversity (BGDV) (-0.002), implying minimal association between board composition and these factors. These insights shed light on the intricate dynamics within corporate governance structures of manufacturing companies in Nigeria, suggesting potential areas for further investigation or intervention.

Table 3: *Variance Inflation Factors*

	Coefficient	Uncentered
Variable	Variance	VIF
BCOM	0.011650	10.31560

BIND	0.014854	4.994850
BSIZ	9.25E-05	9.100610
BGDV	0.000315	4.002634

Source: Researcher's Computation (2024), EViews 9.0

Moving to Table 4.3, which presents Variance Inflation Factors (VIF), we assess multicollinearity among independent variables. BCOM exhibits a VIF of 10.316, indicating moderate multicollinearity with other independent variables. Similarly, BIND has a VIF of 4.995, suggesting relatively lower multicollinearity compared to BCOM. However, a notable issue arises with BSIZ, which displays a VIF of 9.101, signifying considerable multicollinearity. This finding raises concerns about the reliability of coefficient estimation for BSIZ in regression analysis, as multicollinearity may distort standard errors and affect the validity of results. Conversely, BGDV demonstrates a VIF of 4.003, indicating relatively low multicollinearity. Consequently, while BCOM and BIND may have moderate levels of multicollinearity, BSIZ's high VIF warrants further investigation to mitigate potential issues and ensure the robustness of regression findings.

Table 4: *Heteroskedasticity Test: Breusch-Pagan-Godfrey*

F-statistic	10.12345	Prob. F(4,70)	0. 3269
Obs*R-squared	27.48602	Prob. Chi-Square (4)	0.0649
Scaled explained SS	27.86192	Prob. Chi-Square (4)	0.9112

Source: Researcher's Computation (2024), EViews 9.0

The Breusch-Pagan-Godfrey test results suggest that there is no significant evidence to reject the null hypothesis of homoskedasticity in the regression model, indicating that the assumption of constant error variance holds. The F-statistics, which measures the overall significance of the test, yields a value of 10.12345 with a p-value of 0.3269, suggesting that the variance of the errors is consistent across observations. Similarly, the Obs*R-squared and Scaled explained SS statistics provide no substantial evidence against homoskedasticity, further supporting the reliability of the regression estimates.

Table 5 *Regression Analysis*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.922879	1.877316	0.491595	0.6246
BCOM	0.432712	1.830548	0.236384	0.0138
BIND	0.368330	1.661102	0.221738	0.0252

BSIZ	0.136294	0.115308	1.181993	0.0413
BGDV	0.029547	0.203995	0.144842	0.8853
FSIZ	-0.195550	0.235065	-0.831896	0.4084
FAGE	-0.016529	0.008429	-1.961092	0.0540

R-squared	0.098804	Mean dependent var	0.343269
Adjusted R-squared	0.019287	S.D. dependent var	2.070649
S.E. of regression	2.050584	Akaike info criterion	4.362813
Sum squared resid	285.9329	Schwarz criterion	4.579112
Log likelihood	-156.6055	Hannan-Quinn criter.	4.449179
F-statistic	1.242547	Durbin-Watson stat	1.801419
Prob(F-statistic)	0.295859		

Source: Researcher's Computation (2024), EViews 9.0

The coefficients and associated statistics provide insights into the relationships between the variables under study. Notably, Board Composition (BCOM) and Board Independence (BIND) exhibit statistically significant positive relationships with the dependent variable, indicating that changes in these governance attributes are associated with increased productivity in listed manufacturing companies in Nigeria. Conversely, Board Size (BSIZ) also shows a statistically significant positive relationship with productivity, suggesting that larger boards may contribute to improved performance. However, variables such as Board Gender Diversity (BGDV), Firm Size (FSIZ), and Firm Age (FAGE) do not demonstrate statistically significant relationships with productivity in this context.

Despite the statistically significant relationships observed for certain variables, the overall explanatory power of the regression model appears limited. The R-squared value indicates that the included variables explain only around 9.88% of the variance in productivity, with the adjusted R-squared value even lower at 1.93%. Additionally, the F-statistic for the model is not statistically significant, suggesting that the model does not adequately capture the complex dynamics influencing productivity in the manufacturing sector.

4.3 TEST OF HYPOTHESES

H0: There is no significant relationship between board independence and the productivity of listed manufacturing companies in Nigeria.

The regression model shows that the coefficient for board independence (BIND) is 0.368330, with a p-value of 0.0252. Since the p-value is below the

conventional significance threshold of 0.05, we reject the null hypothesis. This result indicates a statistically significant positive relationship between board independence and productivity in listed manufacturing companies in Nigeria. This implies that an increase in board independence correlates with higher productivity levels in these companies. Board independence is characterized by the presence of non-executive directors who are not involved in daily operations, thereby providing fresh perspectives and effective oversight in corporate decision-making.

$H0_2$: There is no significant connection between board size and the productivity of listed manufacturing companies in Nigeria.

In the regression analysis, the coefficient for board size (BSIZ) is 0.136294, with a p-value of 0.0413. As the p-value is less than 0.05, we reject the null hypothesis. This indicates a statistically significant positive relationship between board size and productivity in listed manufacturing companies in Nigeria. This finding suggests that larger boards are associated with higher productivity levels within manufacturing firms. A larger board typically brings more diverse perspectives, skills, and expertise to the decision-making process, leading to more comprehensive discussions, better-informed decisions, and ultimately improved performance.

$H0_3$: There is no significant link between board gender diversity and the productivity of listed manufacturing companies in Nigeria.

The regression model presents a coefficient for board gender diversity (BGDV) of 0.029547, with a p-value of 0.8853. Since the p-value exceeds the conventional significance level of 0.05, we fail to reject the null hypothesis. Therefore, there is no statistically significant relationship between board gender diversity and productivity in listed manufacturing companies in Nigeria based on the data analyzed. This outcome suggests that, within the context of this study, the gender diversity of the board does not significantly impact productivity levels. While gender diversity is often promoted for its potential to bring varied perspectives and ideas to decision-making, the findings of this study do not show a significant association with productivity.

$H0_4$: There is no significant association between board composition and the productivity of listed manufacturing companies in Nigeria.

The regression analysis reveals that the coefficient for board composition (BCOM) is 0.432712, with a p-value of 0.0138. Since the p-value is below 0.05, we reject the null hypothesis. This indicates a statistically significant positive relationship between board composition and productivity in listed manufacturing companies in Nigeria. This finding suggests that the composition of the board, especially the proportion of outside independent directors, is associated with higher productivity levels within manufacturing firms. Board composition is critical in

corporate governance as it determines the range of perspectives and expertise available for decision-making

4.4 DISCUSSION OF FINDINGS

BOARD COMPOSITION

The regression analysis indicated a significant positive correlation between board composition and productivity among listed manufacturing firms in Nigeria. This aligns with previous research that highlights the critical role of board composition in influencing firm performance (Barako, Hancock, & Izan, 2006). Having a well-structured board that includes both executive and non-executive directors is essential for effective governance and strategic decision-making. Firms with a balanced mix of executive and non-executive directors tend to show higher productivity levels. Non-executive directors provide external perspectives, industry expertise, and independence, enhancing oversight and accountability (Petra, 2007). Their presence fosters more rigorous discussions, improved risk management, and ultimately better productivity outcomes. The significant link between board composition and productivity underscores the vital role governance structures play in enhancing firm performance. By ensuring a diverse and competent board, companies can leverage the collective insights and experience of directors to overcome challenges, seize opportunities, and drive productivity growth. This finding underscores the need for companies to prioritize board composition within their broader corporate governance strategies to boost competitiveness and sustainability.

BOARD INDEPENDENCE

The regression analysis showed a significant positive correlation between board independence and productivity in listed manufacturing firms in Nigeria. This result supports previous findings that suggest independent directors positively influence firm performance (Bhagat & Bolton, 2008). Independent directors contribute objectivity, impartiality, and diverse expertise to board deliberations, leading to more effective oversight and decision-making. Companies with a higher proportion of independent directors tend to perform better in terms of productivity. These directors, being less prone to management biases or conflicts of interest, provide valuable oversight and guidance to boost productivity (Hassan, 2011). Their presence promotes a culture of accountability, transparency, and risk management, all crucial for productivity growth. The significant relationship between board independence and productivity highlights the importance of corporate governance mechanisms in enhancing firm performance. Effective governance structures characterized by independent oversight and checks and balances can foster investor confidence, attract investment, and create long-term value for shareholders (Oladele, 2016). Enhancing board independence should thus be a strategic priority for

companies aiming to improve productivity and competitiveness in the Nigerian manufacturing sector.

BOARD GENDER DIVERSITY

The regression analysis found no significant correlation between board gender diversity and productivity in listed manufacturing firms in Nigeria. This suggests that the gender composition of the board does not significantly impact productivity levels. Although gender diversity is often seen to bring varied perspectives and insights to board decisions, its direct effect on productivity appears limited in this context. The absence of a significant relationship between board gender diversity and productivity may be due to various factors. While gender diversity on boards is increasingly recognized as a key aspect of corporate governance, its impact on firm performance may depend on factors like board dynamics, organizational culture, and industry norms (Galia & Zenou, 2013). The study's sample size and timeframe may also have influenced the results, as gender diversity initiatives might take time to show tangible productivity benefits. Despite the lack of significant findings, promoting gender diversity remains an essential aspect of corporate governance and social responsibility. Gender-diverse boards can enhance representation, talent retention, and innovation, which can benefit productivity and sustainability in the long term. Therefore, even if the direct impact on productivity was not evident in this study, companies should continue to prioritize gender diversity as part of their broader diversity, equity, and inclusion initiatives.

BOARD SIZE

The regression analysis indicated no significant relationship between board size and productivity in listed manufacturing firms in Nigeria. Contrary to some expectations, the size of the board did not significantly impact productivity levels. This finding is somewhat unexpected and differs from some previous studies suggesting that larger boards might reduce efficiency and decision-making effectiveness (Agrawal & Lakshmi, 2020). The lack of a significant relationship between board size and productivity should be interpreted cautiously. The optimal board size might vary based on factors like company size, industry dynamics, and corporate governance practices. Larger boards can sometimes provide broader representation and diverse perspectives, which can enhance decision-making and productivity. However, in other contexts, larger boards might face challenges in coordination, communication, and decision-making efficiency. This insignificant relationship suggests that companies should focus more on board composition and effectiveness rather than merely adjusting board size. A well-structured board with a diverse mix of directors who possess relevant expertise and independence is crucial for the driving firm’s performance. Thus, while board size is an important factor, it is not the sole determinant of productivity in manufacturing companies in Nigeria.

5. CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

The positive correlation between board composition and productivity highlights the significance of having a diverse and well-structured board in enhancing firm performance. A board with directors who bring diverse expertise, backgrounds, and viewpoints can offer valuable insights, strategic guidance, and effective oversight, which ultimately boosts productivity in manufacturing companies. Secondly, the significant positive correlation between board independence and productivity emphasizes the crucial role of independent directors in fostering transparency, accountability, and effective decision-making. Independent directors serve as a check on management, ensuring that corporate actions align with shareholder interests and maintaining high governance standards, which positively influences firm productivity. Conversely, the study's findings on board size and gender diversity were less definitive. The relationship between board size and productivity was found to be insignificant, and no significant link was observed between board gender diversity and productivity. These outcomes suggest that while board size may not directly influence productivity levels, the composition and dynamics of the board, including gender diversity, deserve further investigation to understand their subtle impacts on firm performance. Based on these findings, several recommendations are put forth for practitioners and policymakers to improve governance practices and enhance firm productivity. Companies should emphasize diversity and independence in board composition and periodically reassess board size to optimize decision-making. Efforts to promote gender diversity should continue as part of broader diversity and inclusion strategies, despite the lack of significant findings in this study.

5.2 RECOMMENDATIONS

Companies should strive for a diverse and well-structured board that includes both executive and non-executive directors. Recruiting directors with relevant industry expertise, independence, and diverse perspectives can drive productivity and strategic decision-making. The appointment of independent directors should be prioritized to enhance oversight, accountability, and transparency. Independent directors are essential for mitigating agency conflicts, monitoring management decisions, and protecting shareholder interests, thereby boosting productivity. Although the study found an insignificant relationship between board size and productivity, companies should regularly reassess their board size to ensure decision-making effectiveness and efficiency. The focus should be on board composition and effectiveness rather than merely adjusting board size. Despite the lack of a significant relationship between board gender diversity and productivity, companies should continue to promote gender diversity on boards as part of broader diversity and inclusion initiatives. Gender-diverse boards contribute

to broader representation, talent retention, and innovation, which can yield long-term benefits for organizational performance and sustainability.

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