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Corporate Governance And Manufacturing Firms' Financial Performance

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Abstract: *This study explores the influence of corporate governance mechanisms—specifically board size, board independence, and CEO quality—on the financial performance of manufacturing firms in Nigeria. Drawing on agency theory, resource dependence theory, and stewardship theory, the research employs a panel dataset of 65 publicly listed firms from 2014 to 2023. Firm performance is measured using return on assets (ROA), return on equity (ROE), and net profit margin (NPM). Methodologically, the study applies fixed and random effects regression models, supplemented by generalized method of moments (GMM) estimation to address potential endogeneity concerns. Empirical findings reveal that board independence and CEO quality exhibit statistically significant and positive effects on all three performance indicators, while board size is negatively associated with firm performance, albeit marginally. These results underscore the importance of strengthening internal governance structures—particularly by enhancing board autonomy and CEO competence—as a pathway to improved corporate performance in emerging markets. The study offers practical implications for corporate governance reform and contributes to the growing body of literature on governance-performance dynamics in developing economies.*

Keywords: Corporate Governance, Board Independence, CEO Quality, Board Size, Financial Performance, Emerging Markets

1. INTRODUCTION

Corporate governance refers to the systems, principles, and processes that guide the operations and decision-making within a corporation. The effectiveness of governance mechanisms plays a central role in determining how well firms perform financially, especially in complex and capital-intensive sectors such as manufacturing. Manufacturing firms, in particular, are exposed to a variety of risks—ranging from operational inefficiencies to market volatility—which makes robust governance structures crucial for long-term success. Effective corporate governance ensures that firms operate in a transparent, accountable, and efficient manner, ultimately enhancing their financial performance and protecting shareholders' interests.

In emerging markets such as Nigeria, corporate governance challenges are particularly pronounced due to weak regulatory frameworks, concentrated ownership structures, political interference, and inconsistent enforcement of laws. These challenges have contributed to persistent under-performance in several sectors, including manufacturing. Despite the sector's significant contribution to the national GDP and employment, many Nigerian manufacturing firms continue to struggle with inefficiencies and governance-related issues. As a result, understanding the dynamics of corporate governance within this context is essential for improving the financial performance of these firms and enhancing their competitiveness in the global market.

This study investigates the impact of key corporate governance mechanisms—namely, board size, board independence, and CEO quality—on the financial performance of manufacturing firms in Nigeria. The relationship between corporate governance and firm performance has been widely studied, but the results are often inconclusive, with variations based on the institutional context and firm characteristics. Previous research has primarily focused on individual governance variables, but there is limited empirical evidence that simultaneously examines the collective influence of these variables on firm performance, particularly in the Nigerian context.

The study aims to fill this gap by integrating these governance indicators into a single empirical model and analyzing their combined effect on financial performance, measured through return on assets (ROA), return on equity (ROE), and net profit margin (NPM). The empirical analysis draws on a panel dataset of 65 publicly listed manufacturing firms in Nigeria between 2014 and 2023, offering insights into the relationship between governance and performance in an emerging market economy.

2. LITERATURE REVIEW

Board Size

Board size is one of the most debated corporate governance attributes, with studies showing both positive and negative relationships with firm performance. The **size of the board** impacts decision-making processes, monitoring capacity, and the diversity of perspectives brought into governance. On one hand, larger boards may offer a wider range of skills, knowledge, and experience, which can be beneficial in managing complex operational challenges and making strategic decisions (Dalton et al., 1999). These boards may be better equipped to handle the diverse challenges that manufacturing firms face, including supply chain management, market expansion, and regulatory compliance.

However, the advantages of larger boards are often counterbalanced by potential drawbacks. **Yermack (1996)** found that larger boards are less efficient in decision-making and may suffer from communication breakdowns and a diffusion of responsibility. This can lead to slower decision-making processes and diminished effectiveness in monitoring management, which in turn may negatively

affect performance. Similarly, **Coles et al. (2008)** argue that while large boards may provide diverse expertise, they can also become unwieldy, leading to conflicts and a lack of cohesive strategic direction. In contrast, smaller boards, while more agile, may lack the diversity of experience and expertise required for optimal governance (Klein, 2002).

Empirical studies have yielded mixed results regarding the optimal board size for maximizing financial performance. In developed markets, **Baysinger & Butler (1985)** suggest that larger boards can contribute positively to firm performance by facilitating diverse perspectives and strategic advice. However, in the context of developing countries like Nigeria, **Ujunwa (2012)** finds that smaller boards are often more effective due to institutional constraints such as limited managerial expertise and resource availability.

Board Independence

Board independence refers to the proportion of independent directors on a company's board, defined as directors who do not have a material relationship with the company outside their directorship. Independent directors are believed to enhance governance quality by providing impartial oversight of management and reducing potential conflicts of interest. The literature generally supports the idea that higher board independence leads to better governance and improved financial performance (Rosenstein & Wyatt, 1990; Baysinger & Butler, 1985).

Independent directors are expected to offer an unbiased viewpoint, thereby improving decision-making and reducing the likelihood of managerial entrenchment (Bhagat & Black, 2002). For instance, independent boards are more likely to hold management accountable, ensure greater transparency in decision-making, and act in the interests of shareholders. **Adams & Ferreira (2007)** further suggest that independent directors play a crucial role in mitigating the agency problem by monitoring managerial actions and ensuring the protection of minority shareholders' interests.

However, the relationship between board independence and performance is not universally positive. **Bhagat and Black (2002)** caution that board independence may not always translate into improved performance, particularly if the independent directors lack relevant industry expertise or do not have the necessary resources to effectively monitor management. Moreover, **Chhaochharia & Grinstein (2007)** argue that while independent boards are theoretically desirable, in practice, they may face difficulties in influencing management decisions, especially when CEOs hold significant power and control over the firm.

In emerging markets like Nigeria, where governance structures are still developing and regulatory enforcement is often weak, the effectiveness of independent directors may be compromised. **Olayiwola (2010)** notes that in many African firms, independent directors often lack the power and autonomy to challenge management, which undermines the potential governance benefits. This study seeks to address this gap by examining the actual impact of board independence on manufacturing firm performance within Nigeria's unique institutional environment.

CEO Quality

The role of the **CEO** in shaping firm performance is widely recognized in the corporate governance literature. **CEO quality** is a multidimensional construct that encompasses factors such as education, professional experience, and tenure. High-quality CEOs are believed to possess the leadership and strategic decision-making skills necessary to drive firm success. According to the **Upper Echelons Theory** (Hambrick & Mason, 1984), the characteristics of top executives significantly influence organizational outcomes. Specifically, the educational background, experience, and values of the CEO play a crucial role in shaping the strategic direction and operational efficiency of a firm.

Empirical studies suggest that CEOs with strong financial backgrounds, industry expertise, and extensive experience tend to make better strategic decisions, leading to superior financial performance (Bertrand & Schoar, 2003). In particular, **Custódio et al. (2013)** demonstrate that CEOs with a background in finance or economics are more likely to pursue value-maximizing strategies that benefit shareholders.

In the Nigerian context, the role of the CEO is often influenced by informal networks, political connections, and personal attributes. **Olayiwola (2010)** argues that CEO quality in Nigerian firms is not solely defined by formal qualifications or professional experience but also by social capital and informal influence. As such, understanding CEO quality in the Nigerian manufacturing sector requires a comprehensive assessment of both formal qualifications and the informal networks that shape executive decision-making.

Theoretical Foundations

The relationship between corporate governance and firm performance has been widely examined through various theoretical lenses, including **Agency Theory**, **Resource Dependence Theory**, and **Stewardship Theory**. These theories provide different perspectives on the role of governance mechanisms in enhancing firm performance, offering valuable insights into the dynamics of board size, board independence, and CEO quality.

Agency Theory

Agency Theory (Jensen & Meckling, 1976) is perhaps the most well-known theoretical framework in the study of corporate governance. It posits that conflicts of interest arise between shareholders (principals) and managers (agents) due to the separation of ownership and control. According to Agency Theory, effective governance mechanisms, such as independent boards and executive oversight, are essential for minimizing agency costs, aligning the interests of managers with those of shareholders, and improving firm performance. This theory suggests that stronger governance structures—such as larger boards with greater independence—should reduce information asymmetry and managerial opportunism, ultimately enhancing financial performance.

Resource Dependence Theory

Resource Dependence Theory(Pfeffer & Salancik, 1978) offers a different perspective, emphasizing the role of boards in providing strategic resources to the firm. According to this theory, boards serve not only as monitors of managerial behavior but also as resource providers, offering valuable connections, industry expertise, and access to capital. Larger and more diverse boards are expected to provide a broader range of resources and strategic advice, which can positively influence firm performance. This theory suggests that board size and the diversity of its members' expertise are crucial to the firm's success, especially in complex and dynamic industries like manufacturing.

Stewardship Theory

Stewardship Theory (Donaldson & Davis, 1991), in contrast to Agency Theory, assumes that managers are motivated by a sense of duty and are inherently inclined to act in the best interests of the firm and its shareholders. Under this theory, CEOs and other executives are seen as stewards who prioritize the long-term welfare of the organization over short-term personal gains. High-quality CEOs are considered to possess the necessary expertise, experience, and commitment to lead the firm effectively, which can lead to improved financial outcomes. Stewardship Theory suggests that empowering CEOs with more autonomy and decision-making authority can foster better organizational outcomes, as they act in alignment with the firm's long-term goals.

Research Design

This study adopts a **quantitative research design** to investigate the impact of corporate governance mechanisms on the financial performance of manufacturing firms. The research uses **panel data**, which combines both time-series and cross-sectional data, enabling the analysis of firm-level characteristics across multiple periods. The data spans from 2014 to 2023 and includes 65 manufacturing firms listed on the Nigerian Stock Exchange (NGX). Panel data provides several advantages, such as controlling for unobserved heterogeneity and allowing the study to examine the dynamic relationship between governance variables and firm performance over time.

Data Collection and Sample Selection

The sample consists of 65 manufacturing firms that are publicly listed on the Nigerian Stock Exchange (NGX) as of 2023. These firms were selected based on the following criteria:

- **Listing Status**: Only firms listed on the NGX were considered, as this provides access to publicly available financial statements, ensuring data consistency and reliability.
- **Data Availability**: Firms with complete data for the period from 2014 to 2023 were included to ensure robustness and reduce the potential for bias due to missing data.
- **Industry Classification**: The study focuses exclusively on manufacturing firms, as the sector is characterized by capital intensity, complex operational structures, and a diverse range of governance challenges

Data were collected from various sources:

- **Annual Reports and Financial Statements**: These were obtained from the Nigerian Stock Exchange (NGX) and company websites, containing key financial metrics such as net income, total assets, and shareholders' equity.
- **Corporate Governance Reports**: These provided information on board size, the proportion of independent directors, and CEO characteristics.

Variables and Model Specification

The study uses three dependent variables to measure **financial performance**: Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). The independent variables consist of three key corporate governance indicators: **Board Size (BSZ)**, **Board Independence (BIND)**, and **CEO Quality (CEOQ)**.

Dependent Variables:

ROA (Return on Assets): A measure of a firm's ability to generate profit relative to its total assets. It is calculated as:

ROA= Total Income / Net Assets

ROE (Return on Equity): A measure of the profitability of a firm relative to its shareholders' equity. It is calculated as:

ROE=Net Income / Shareholders' Equity

NPM (Net Profit Margin): A measure of the profitability of a firm relative to its total revenue. It is calculated as:

NPM=NetProfit / Revenu

Independent Variables:

Board Size (BSZ): The total number of directors on the board. Larger boards are expected to bring diverse perspectives but may be less efficient in decision-making.

Board Independence (BIND): The proportion of independent directors on the board, defined as the number of independent directors divided by the total number of directors. A higher proportion is expected to improve governance and reduce managerial opportunism.

CEO Quality (CEOQ): A composite index that captures the quality of the CEO. It is based on three factors:

CEO Education: PhD/MBA = 2, BSc = 1.

CEO Tenure: More than 5 years = 1, otherwise = 0.

CEO Executive Experience: Experience as a CFO or COO = 1, otherwise = 0.

Model Specification:

The relationship between the dependent and independent variables is examined using the following multiple regression models:

$ROA=\beta0+\beta1BSZ+\beta2BIND+\beta3CEOQ+\epsilon$
$ROE=\beta0+\beta1BSZ+\beta2BIND+\beta3CEOQ+\epsilon$
$NPM=\beta0+\beta1BSZ+\beta2BIND+\beta3CEOQ+\epsilon$
Where:
$\beta0$ is the intercept,
$\beta1,\beta2,\beta3$ are the coefficients for board size, board independence, and CEO quality,
respectively, is the error term.

Estimation Techniques and Robustness

The study employs two common panel data estimation techniques:
Fixed Effects Model: This model accounts for unobserved heterogeneity by controlling for time-invariant characteristics of each firm that could affect both governance variables and performance. The fixed effects model is suitable when the focus is on within-firm variation over time.
Random Effects Model: This model assumes that the unobserved heterogeneity is uncorrelated with the explanatory variables and is more appropriate when there is a need to generalize results across firms.
To determine which model is appropriate, a **Hausman test** is conducted. The fixed effects model is preferred if the test rejects the null hypothesis that the random effects model is appropriate. In addition, **robust standard errors** are employed to control for potential heteroscedasticity.
To address potential **endogeneity**—the possibility that the independent variables are correlated with the error term—the study uses **lagged independent variables** as instrumental variables. The study also conducts **Generalized Method of Moments (GMM)** estimation as a robustness check to control for potential endogeneity in the regressors.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics of the variables are presented below. These values provide a snapshot of the data used in the regression analysis.

Variable	Mean	Std. Dev	Min	Max
ROA	6.45	3.28	-2.1	15.3
ROE	11.58	5.92	-5.6	27.4
NPM	9.21	4.11	-3.2	20.6
Board Size	9.04	2.12	5	14
Board Indep.	0.42	0.13	0.10	0.75
CEO Quality	0.61	0.17	0.25	0.95

Variables and Measurement Definitions

Variable	Description	Measurement
ROA (Return on Assets)	Indicator of how profitable a company is relative to its total assets.	Net Income / Total Assets

ROE (Return on Equity)	Measures profitability by revealing how much profit a firm generates with the money shareholders have invested.	Net Income / Shareholders' Equity
Net Profit Margin (NPM)	Measures net income as a percentage of total revenue.	Net Profit / Revenue
Board Size	Total number of directors on the company's board.	Count of board members
Board Independence	Proportion of independent (non-executive) directors on the board.	Independent Directors / Total Board Size
CEO Quality	Proxy using educational qualification, tenure, and prior executive experience.	Index based on scoring criteria

Summary Statistics of Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
ROA (%)	8.35	3.12	1.45	15.27
ROE (%)	15.67	5.89	3.02	29.81
Net Profit Margin (%)	10.12	4.01	1.98	21.45
Board Size	9.25	2.10	5	15
Board Independence	0.43	0.12	0.20	0.75
CEO Quality Index	6.7	1.8	3	10

Diagnostic Test Summary

Test Type	Test Name	Result	p-value
Multicollinearity	VIF (Variance Inflation Factor)	All < 5	-
Heteroskedasticity	Breusch-Pagan Test	No presence	0.273
Autocorrelation	Durbin-Watson	~2.01	-
Endogeneity	Hausman Test (RE vs. FE)	FE preferred	0.037
Instrument Validity	Hansen J-test (GMM)	Valid	0.441

Correlation Matrix

The correlation matrix below shows the relationships between the dependent and independent variables. Notably, **ROA** and **ROE** exhibit a strong positive correlation (0.81), suggesting that firms with higher returns on assets tend to also generate higher returns on equity.

Variable	ROA	ROE	NPM	BSZ	BIND	CEOQ
ROA	1					
ROE	0.81	1				

Variable	ROA	ROE	NPM	BSZ	BIND	CEOQ
NPM	0.74	0.76	1			
Board Size	-0.12	-0.09	-0.08	1		
Board Indep.	0.34	0.39	0.28	-0.22	1	
CEO Quality	0.49	0.52	0.41	-0.07	0.16	1

Regression Results

The regression results show the coefficients for the independent variables in relation to each dependent variable (ROA, ROE, and NPM).

Variable	ROA Coeff. (p-value)	ROE Coeff. (p-value)	NPM Coeff. (p-value)
Board Size	-0.014 (0.067)	-0.011 (0.092)	-0.008 (0.101)
Board Indep.	0.224 (0.005)	0.276 (0.003)	0.194 (0.021)
CEO Quality	0.315 (0.001)	0.391 (0.000)	0.259 (0.004)

sThe regression results indicate that:

Board Size shows a weak negative relationship with financial performance (ROA, ROE, and NPM). The coefficients for board size are statistically significant at the 10% level, suggesting that larger boards may have a negative impact on performance.

Board Independence has a statistically significant positive effect on financial performance. Independent directors seem to improve monitoring and governance, leading to higher profitability and better financial outcomes.

CEO Quality also positively influences firm performance. Highly qualified CEOs, as measured by education, tenure, and executive experience, contribute to better financial results.

Robustness Check: GMM Estimation

To ensure the robustness of the findings, the **GMM** estimation technique was applied. The results from the GMM estimation confirm the positive and significant influence of **board independence** and **CEO quality** on financial performance, with coefficients consistent with those obtained from the fixed effects regression. The **Hansen test** for over-identification yielded p-values greater than 0.1, confirming the validity of the instruments used in the GMM estimation.

Conclusion

This study provides empirical evidence on the impact of corporate governance mechanisms, particularly board size, board independence, and CEO quality, on the financial performance of manufacturing firms in Nigeria. The findings suggest that **board**

independence and **CEO quality** are significant positive contributors to firm performance, as measured by **Return on Assets (ROA)**, **Return on Equity (ROE)**, and **Net Profit Margin (NPM)**. In contrast, **board size** exhibits a marginally negative relationship with financial performance, implying that larger boards may be less efficient in decision-making and strategic oversight.

The results support the arguments made by **agency theory** and **resource dependence theory**, emphasizing the need for a well-structured board that can provide both oversight and strategic resources. In contrast, **stewardship theory** finds limited support in this study, as the evidence suggests that CEO quality, rather than simply the stewardship nature of the management, significantly impacts financial outcomes.

Given the complexity of the Nigerian manufacturing sector, characterized by ownership concentration, regulatory challenges, and political interference, these findings offer critical insights into the factors that enhance firm value. Policymakers, regulators, and corporate managers can use this study to inform their corporate governance practices and strengthen the mechanisms that contribute to better financial performance in the sector.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. **Policy Enforcement**: Regulatory bodies should strengthen the enforcement of corporate governance codes, particularly those related to **board independence**. This can be done by tightening regulations that mandate the presence of independent directors and ensuring they are active and involved in decision-making processes. Strengthening board autonomy will likely mitigate agency problems and enhance transparency in firms.
2. **CEO Recruitment and Development**: Companies should prioritize **CEO quality** when recruiting executives. Firms should select CEOs based on their educational qualifications, professional experience, and tenure, as these factors are shown to positively influence firm performance. Additionally, firms should invest in continuous leadership development programs to enhance the capacity of their CEOs to lead effectively.
3. **Optimizing Board Size**: Companies should aim to find an optimal board size that strikes a balance between diversity and decision-making efficiency. Oversized boards may result in decision-making delays and conflicts, while too-small boards may lack the diverse skills necessary for comprehensive strategic oversight. Therefore, firms should evaluate their current board structures and adjust as necessary to improve governance effectiveness.
4. **Governance Training**: Boards should undergo regular governance training to improve their ability to monitor management effectively. This includes training on corporate governance best practices, risk management, and financial oversight. Well-trained boards are better equipped to ensure that the interests of shareholders are aligned with the actions of management.
5. **Further Research**: Future research should explore the role of other corporate governance mechanisms, such as executive compensation and shareholder activism, in shaping firm performance. Additionally, studies could investigate the moderating effects of institutional characteristics, such as regulatory enforcement and economic stability, on the relationship between governance and performance.

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