LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

CORPORATE GOVERNANCE AND FINANCIAL PERFORMANCE OF NIGERIAN MANUFACTURING FIRMS: EVIDENCE FROM DUPONT ANALYSIS

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Abstract

This study examines how corporate governance variables—Board Size (BDS), Board Independence (BDI), and Audit Committee Independence(ADI)—affect the financial performance of Nigerian manufacturing firms, using DuPont analysis over 2012–2021. However, the study adopted Net Profit Margin (NPM), Asset Turnover (AST) and Debts-Asset-Ratio (DAR) as proxy for Financial Performance (Dependent variable). Ex-post facto design was employed using panel data extracted from fifteen (15) selected consumer goods manufacturing for a 10-year period ranging from 2012 to 2021. The static panel estimator was utilised and more explicitly, panel robust least square (RLS) analysis was adopted to avoid the problem of non-normality or outliers in data. Three panel models were estimated for each of the Net profit margin, Asset turnover and Debt-asset ratio, as measure of financial performance. Results show that Board Size positively influences Return on Equity, while other variables show mixed effects. From the results of the analysis, using agency and stakeholders' theories as underpinning theories, it was revealed that BDS exerts significantly positive `influence on net profit margin, but BDI and ADI was noted to produce negative but insignificant effect. While board independence exerts positive effect on asset turnover, audit committee Independence showed positive but insignificant effect on Asset turnover. Similarly, the findings also shown Board independence have significant positive influence on Debt-Asset Ratio (DAR) while BDS and ADI have insignificant and inverse relationship on Debt to Asset Ratio. The study concluded that corporate governance variables has a significant effect on return on equity, as the CG proxies exerts significant influence on the three elements of the dependent variables as enshrined in the DuPont analysis. Findings suggest and recommend that firms should optimize governance structures to enhance profitability and proportionate increase in board size with right mixture of executive and non-executive members with guarantee probity.

Keywords: *Audit Committee Independence (ADI), Board Independence (BDI), Board Size (BDS), DuPONT Analysis, Return on Equity (ROE)*

Introduction

Corporate governance (CG) is very critical for the realisation of the corporate objectives of firms. CG represents the practices, Norms, processes and rules by which a corporate entity is administered and managed. Good CG ensures that company's carryout their activities efficiently and effectively in order to maximize shareholder value and wealth (Alodat et al., 2022). As quoted by Musa S.J (2019), Rezaee (2009) stated that corporate governance is a system under which

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

shareholders persuade managers to behave in their interest, increasing confidence of investors that is required for effective functionality of the capital markets. In 1990s, financial crisis in Nigeria banking sectors resulted in the evolution of corporate governance which leads to issuance of code of conduct by difference agencies of government. The harmonized specific industry codes of corporate governance issued by SEC in 2011 replaced the legislation of 2003 with the public quoted company code of corporate governance (Musa 2019). Jizi*et al* (2014) explained that corporate governance was designed to secure shareholders interest but has systematically gained prominence and extended to other stakeholder in the organization and the society. Irrespective of various definitions given to corporate governance, the principles are usually viewed by experts as been grouped into two heads: the internal and external (Dembo &Rasaratnam 2014). Internal governance emphasized appointment of BoDs to help the owners to supervise and oversee everyday affairs of the undertaken in order to actualize its objective while external governance relates to other stakeholders who have significant stake in a company. Combining these two heads, corporate governance can therefore be viewed as the ways companies' affairs is coordinated and controlled by appointed directors to increase value creations for stakeholders. Hunjra et al.,(2021) explained that notwithstanding of associated benefits of good CG, there are series of challenges in implementing effective governance practices. Some of these challenges include but not limited to issues such as conflicts of interest, concentration of ownership, management structures and the difficulty of measuring and monitoring governance practices. Application of good Corporate Governance has direct connection with financial performance of the organization. Financial performance evaluates how effective a firm utilises and manages its resources available for business activities so as to realise enough income and make profit and this is measured by return on Asset (ROA) and Return on equity (ROE). Resulting from this background, the study examined the relative influence of adopted corporate governance on the Financial Performance of Manufacturing companies in Nigeria.

Statement of the Problem

The world global economy witnessed a downturn in 2008 resulting in the collapse of many companies and loss of shareholder investment. This was reported to mostly accrue from the inadequacy in the implementation of good corporate governance practices by the management of business undertaken (Bhimani, 2008). Major criticism has been anchored on Board of Directors (BoDs) for drastic reduction in shareholders' wealth due to corporate failure. Series of fraud cases emanated from failure and downturn of prominent corporations like Enron Corporation, Worldcom, Tycoon, Daewoo, Merrill Lynch, Anderson, Xerox, Parmalat and Cadbury in Nigeria which called for development of corporate governance code or mechanism to guide the management and administration of going concerns. Some prominent reasons postulated for these failures are inadequate oversight roles by the BoDs as they surrendering their roles to the managers who are agents of the company and these managers pursue their self-interest. These including the supposed negligence of the BoDs in their stewardship to stakeholders coupled with the audit committee independence which is lacking in most organisations. Manufacturing industry is deemed strategically to be the promoter of growth and development in an economy (Herman, 2016). But the major challenge that is constraint in achieving these economic roles is the possibility of inefficiency in the management of the available resources of the firm's managers in ascertaining

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

the profitability objectives of the companies. In the n view of this, effective governance and management of this segment of the economy through established rules, norms, procedures and processes are becoming increasingly important to managers and decision makers. Good Corporate governance practices becomes the important parameter that highly relied on in bring back the profitability guarantee of firms with continue improvement and ensuring that the business environment made interested and economically robust, vibrant and worthwhile. This implies that good corporate governance is a prerequisite for the continuous existence and assesses predictability of the system of doing business in nations (Oluwafemi, 2013). Due to the relevance of BoD's size, configuration and independence and their influence on management, many studies have been focused on good corporate governance practice and evaluate it influence on firm's financial performance. Therefore, the effects of good corporate governance practices on profitability (performance) of firms had focused on ROA and ROE which explain the bases of assessment of the efficiency as to how resources are used by the management of the undertaking. Despite the importance of corporate governance for manufacturing firms in Nigeria, limited studies have employed DuPont analysis to assess the specific impact of governance variables on financial performance. In addition to this, most of the past research works carried out on corporate governance mechanism and firm's financial performance both in Nigeria and other countries based on the researcher knowledge have been focused on banks and other financial institutions and the little attention directed in manufacturing sectors had been conducted using the literary yardstick or bases of Return on Equity (ROE) as measure of financial performance while ignoring basic parameters that have multiplier effects on Return on Equity (ROE). This according to Donardson 1918 DuPont Analysis suggested that Net Profit Margin (NPM), Assets Turnover (AST) and Financial Leverage measured by Debts to Assets Ratio (DAR) have direct Multiplier effect on Return on Equity (ROE) which must be taken into accounts in analysing corporate governance effects on profitability using DuPont 3 points Analysis Model coupled with the mixed effects from the for the findings of past researchers. Based on these noticeable gaps, the researcher found it expedients to explore this area to assess the impact of corporate governance on financial performance of manufacturing companies in Nigeria using DuPont models. This study aims to fill this gap by analyzing Board Size, Independence, and Audit Committees' roles over 10 years using DuPONT three point models.

The main objective of the research work is to appraise the effects of good corporate governance mechanisms (Board Size 'BDS', Board Independence 'BDI' and Audit Committee Independence 'ADI') on the financial performance of consumer-goods manufacturing companies in Nigeria using DuPont 3-point analysis model while the explicit objectives are:

i. To evaluate the effect of Corporate Governance characteristics of BDS, BDI & ADI on net profit margin (NPM) of consumer-goods manufacturing firm in Nigeria.
ii. To assess the effect of Corporate Governance characteristics of BDS, BDI &ADI on Asset Turnover (AST) of consumer-goods manufacturing firm in Nigeria.
iii. To examine the effect of Corporate Governance characteristics of BDS, BDI & ADI on Debt –to- Asset Ratio (DAR) on consumer-goods manufacturing firm in Nigeria.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

The following pertinent research questions were asked:

i. What is the effect of Corporate Governance characteristics of BDS, BDI & ADI on net profit margin (NPM) of consumer-goods manufacturing firm in Nigeria?
ii. Does Corporate Governance characteristics of BDS, BDI &ADI have a significant effect on Asset Turnover (AST) of consumer-goods manufacturing firm in Nigeria?
iii. How do Corporate Governance characteristics of BDS, BDI & ADI affect Debt – to- Asset Ratio (DAR) on consumer-goods manufacturing firm in Nigeria?

With reference to the study stated objectives, the under-listed hypotheses are postulated:

H1: Corporate Governance characteristics of BDS, BDI & ADI does not have significant effect on Net Profit Margin (NPM) of consumer-goods manufacturing firm in Nigeria.

H2: Corporate Governance characteristics of BDS, BDI & ADI does not have significant effect on Asset Turnover (AST) of consumer-goods manufacturing firm in Nigeria.

H3: Corporate Governance characteristics of BDS, BDI & ADI does not have significant effect on Debt –to- Asset Ratio (DAR) of consumer-goods manufacturing firms in Nigeria.

Literature Review

Conceptual Review

Financial Performance: DuPont Analysis

Financial performance described the degree to which the financial objectives of a firm has been achieved. It is refers to the acts of measuring the results of a firm's operations, policies and management decision in financial/monetary terms which is normally shown in the firm's return on assets (ROA) return on investment (ROI) and return on Equity (ROE) (Awotomilusi et al., 2024; Lyndsey, 2019; Okudo et al., 2022). Financial performance is mostly measured in term of investor and accounting returns. While investor returns are to be evaluated from shareholders viewpoint of dividend yield and appreciation of share price, the accounting returns dwell on reaction of firm's earnings to changes in managerial policies and directives which are assessed using financial ratios. In this work therefore, the financial performance is proxy by ROE which stands as the basic yardstick to measure performance of any business undertaken using acceptable criteria that have multiplier effects on ROE such as: Net profit Margin (NPM), Assets Turnover (AST) and Debts to Asset Ratio (DAR) and other financial ratio indicators. Tabash et al., (2021) opined that the main objective of firms comprises of shareholders wealth maximization, innovation, market expansion, and corporate social responsibility. In advanced economies, firms benefit from stable institutions, access to financial markets, and strong regulatory frameworks that support long-term business sustainability resulting from continuous and consistency in profit realization (Rakha, 2018). This mostly reflects in value and growth in ROE value.

Return on Equity (ROE) is expressed as the ratio or proportion net earned income or revenue that represents the shareholder investment in the organisation. It evaluates the profitable level of a firm

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

relative to equity of shareholders, which can also be regarded as total net assets or net worth. ROE usually measures of how efficient a firm utilised capital investment to realise increase in income/earnings. In determining Return on Equity, different derivatives are combined and this includes Net Profit Margin, Asset turnover and Debt to asset ratio. Based on DuPont model, it was revealed combination of these variables produce the value of Return on equity and results gives an in-depth analysis as to their respective proportional contribution to ROE at any particular time. ROE as a proxy for financial performance in relation to elements of CG were employed in the work of Wanyama and Olweny, (2013); Bijalwan and Madan, (2013); Garba and Abubakar, (2014); Dogan and Yildiz, (2013);.

ROE= (NPM) × (AST) × (Equity Multiplier) i.e (DAR)

The DuPont Analysis derived its name from the firm that promulgated the detailed model in the 1918; the DuPont Corporation. Donaldson Brown, in 1918 while given analysis on basis component and underlying factors affecting the Return on Equity (ROE) of a firm formulated DuPont Analysis Formula using three (3) point models as another way to determine, calculate and analyse ROE with the aims of having better understanding of the underlying factors behind a firm's ROE. Financial analysis using DuPont model is based on the components of ROE, which comprises the NPM, the total asset turnover and the DAR. (McGowan and Stambaugh, 2012). The DuPont model is an acceptable technique of calculating the company's market value, indicating the gearing level of a company in enhancing projected profitability by efficiently utilizes its assets to expand the return to shareholders. Using the 3 point variable model of DuPont allows financial experts to appreciate where among the components a firm is robust and point of its weaknesses in the area of profitability. Therefore, the proposition of DuPont seeks to redirects the attention from ROA to ROE, by introducing debts or "financial leverage" as additional area affecting ROE.

Nature of Corporate Governance

Corporate governance explain the relationships that subsist between the owners and managers in controlling and directing affair of companies as separate entities (Appah , 2019), OECD (2014) in its periodical on corporate governance principles define it as process by which firms direct, govern and control its affairs. Its express the sets of connection/ association that existed between management of a going concerns and its stakeholders. Omesi and Ordu (2021) opined that corporate governance made up of processes and structures adopted by various units of organization as a way of ensuring its sustainability and profitability by putting all stakeholders interest to bear and which are strategic objectives and based on rules which enhance corporate stewardship, accountability and profitability with a aim of enhancing shareholders values and wealth maximizations. Babatunde and Olaniran (2009) in their thought proposed that good governance codes can be viewed in two areas: the internal mechanism of Corporate Governance gives consideration to proprietor's worries and making sure that the board carried out proper monitoring on top management which are acting as linkage between management and the shareholders while the external mechanisms try to regulates and controls manager's activities by means of policies and statutory requirement relating to other stakeholders as instituted by regulatory authorities.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Board Size and Financial Performance

The size of board of directors is viewed majorly as one of the corporate governance features recognized by existing literature in corporate governance practices. Board size is defines as the aggregate unit of directors on corporate organization board (Ogbechie and Koufopoulos, 2010). As mentioned by Ansong, (2015), firm's board size and financial performances has increasing synergetic relationships and connections, but participants of member in its activities have no connection with the financial performance. Therefore, BoDs is entrusted with the roles of making sure that business entities exploits maximum benefits arising from prevailing policies directives and making sure that the net-worth of the going concerns is improved and become fruitful moment managers choice of acting in corporate interest is strong (Uwuigbe and Fakile, (2012), Boachie, 2021). Uwalomwa et al. *(*2015) in his view opined that BDS, ownership structure and BDI has a positive significant influence on firm's profitability thereby causing a change in Return on Equity (ROE). Past studies on this subject revealed that firms often choose size of board to established reasonable equilibrium and balance between the needs for quality and timely information and advice and the implied cost effects retaining huge number board member (Akinyomi, 2013).

BDS ⟶ *(NPM, AST & DAR)*

Board Composition/Independence and Financial Performance

Board composition is described as the proportion of the number of Executive Director and Non-Executive that were selected as member of the board. In other word, it refers to the relative number of non-executive directors sitting on the board in a particular year in relation to the total member of board members (Uadiale, 2010). Board composition is the ratio of non-executive directors and board size of a firm which are majorly measured and assessed in many literatures by gender and age diversity. Experts opinion has suggested that companies with large proportions of non-executives directors in board composition usually experience low level of agency problems, resulting in a better relationships between the shareholder's interest and those of management (Guluma, 2021). Boshnak (2021), viewed independent director's appointment as an important means of reducing probable struggle between principals and agents which are expected increase profitability achievement of firms. Various studies show that independent directors increase the financial performance of firms (Khalifa *et al*., 2020; Buallay*et al*., 2017). It must be noted that there is no statutory rules and standards on expected board composition that is considered optimal.

BDI ⟶ *(NPM, AST & DAR)*

Audit Committee Size/Independence and Financial Performance

The audit committee is assumed to be an independence body in an organization with responsibility of evaluating the system of rules and examining how effective the internal control systems of the organization on a consistent manner with reference to report of the internal and external auditors in evaluating management efficiency in line with company' policies (Zhou *et al*., 2018). Audit committee of a company assisted in protecting Shareholders and stakeholder interest through their monitoring and review activities on the operational activities since it was believed that management may not always behave in the owner's best interests. Tornyeva &Wereko, (2012)

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

believes that the committee's functions of maintaining and monitoring the financial integrity and operational information of organization have made it as constituted major essential corporate governance tools. The features of the audit committee like relative size and independence is majorly determined its effectiveness (Herdjiono & Sari, 2017; Dellaportas et al., 2012). The ROE is expressed as net operating profit in relation to Equity which expresses the capability of the organisation to realise enough rewards to its shareholders. Boachie, (2021) revealed that Audit committees bridge gaps of communication between internal, external auditors and the BoDs.

$$ADI \longrightarrow (NPM, AST \ \& \ DAR)$$

Theoretical Review

There are many theoretical frameworks underpinning this research work from which the researcher derived foundation for the study.

Agency Theory

Agency theory is an established norm employed in an effort to explain in understandable term the intricate relationship that subsists between the owners (principal) and managers (agents) of the company. The owners (principal) who are majorly the shareholders employed managers (Agent) to function on their behalf and often times, manager do carried out activities which are not owner's interest. Therefore, to limit the excesses of the manager and to propelled them to acts in the owner's best interest, corporate governance code are developed to guide the operations of the going concern to ensure that managers take decisions that will maximized wealth of the shareholder. This gives the business owners some level of control over the operation and activities of officers/manager of the company who were saddled with the administration of its affairs. Consequently, agency theory is adopted as the groundwork to study the relative effects of Corporate Governance mechanism on the financial performance of consumer-goods manufacturing firms in Nigeria. Agency theory as opined by Jensen and Meckling (1976) is a philosophy that is leaned on the foundation that when organisation ownership is separated from its control, managers or any responsible officers that is functioning or acting on behalf of the principal or owners as agent tends toward pursuing interest other than that of principals or owners. With reference to classical agency theory, there arises of confusion emanating from the point that principal and agent interest are not necessarily affiliated. Further to this, it was noted due to the identified agency problems, wealth maximization objective of shareholders are not usually align with manager's self-interest and this creates and develop cracks in the agency relationship between shareholders (principal) and company directors (agents) (Samine , 2013).

Consequent upon this conflict of interest, business proprietors developed a mechanism that joins their wealth maximization objectives and rewards with remuneration and other perquisite of the firm's Managers. Vo and Phan, (2013) emphasized that the when it becomes tough to envisage how corporate managers would acts, then remuneration becomes governance issue which is seen as factor stirring them to undertake their fiduciary responsibilities in the owner's best interest. The theory emphasized the designation of managers with remuneration to motivate them while the board oversees operation of the managers through performance evaluation, periodic reporting,

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

evaluation and development of laid down guidelines that are formidable to guide operational efficiency (Uwuigbe, 2011).

Stakeholders' theory

Stakeholder Theory is a capitalism view that emphasizes the interrelated associations between a firm and its suppliers, customers, investors, employees, environments and government who shared in the stake of the company. Stakeholder's theory emphasis the need for the firm to create value concerns parties. Stakeholder theory tried to look at the totality of all interest group that affiliated to a company. Bessong and Tapang (2012), viewed agency theory as narrow in nature due to the fact that it's recognize shareholders as the only interested party to corporate entity and this necessitated further exploration. Stakeholder's theory expands scope of interested parties or groups to corporate entities. Wolfensohn, (2009) opined that a corporate entity consistently strives to create an equilibrium between the diverse stakeholder interest so as to make ensure that every constituent or part realise appropriate level of benefit and satisfaction in a proportionate fashion. The prominence of Stakeholder theory has becoming more relevant as many scholars often recognized that the functions of a firm affect its external environment necessitating major accountability of the organization to all stakeholders rather than only its shareholders.

Empirical Review

Appah and Tebepah (2023) research on Corporate Governance and manufacturing firm performance in Nigeria and used census approach in selecting 21 firms for the samples size and regress Corporate Governance mechanism of BDS, BDI, BDD on ROE. The finding shown that the relationship that existed between board size and ROE is negative and insignificant but BDI express a negative but significant association with ROE while compensation of board shows positive and significant connection; board diligence is negative but significant in relation to ROE of consumer goods manufacturing firms in Nigeria. This study does not take to accounts the 3 points DuPont model in its analysis which might cause a change in the conclusion if considered since element of the model affect the value of ROE.

The study of Stephen and Waribugo, (2022) evaluate the impact of Corporate Governance structure on earnings management and performance of manufacturing firms in Nigeria with 27 samples selected from manufacturing listed on Nigeria Exchange for the period of 10years (2012 to 2021). The study utilised ex post facto research and multiple regression Ordinary Least Square (MOLS) statistical was used and the results found that the chosen Corporate Governance measures expressed significant but negative influence on earnings management, while they also shown significant positive association with performance variable of ROE this result of the study aligned with that Appah and Tebepah (2023) which shown a mixed effect.

Naveed *et al* (2020) undertook research on Corporate Governance and profitability of banks in Pakistan and utilised ROA and ROE as proxies for firm profitability whereas board size and Board Independence used to measure Corporate Governance. The research work adopted ex post facto and correlational design as methodology for the study and the findings from the regression model analysis shown that board size has negative relationship with ROA and ROE while board independence exhibits positive relationship. Apart from the regional gaps noticed, the study focus

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

on banking sector with structure and regulatory framework that is difference from manufacturing companies

Musa, (2019), considered effect of Corporate Governance on financial performance of firms in Nigeria by regressing proxies of Corporate Governance code of BDS, BDI on financial performance measured by ROA and ROE. The work adopted ex post facto design using six quoted companies in Nigerian Exchange as sample size over period of 10years (2008 and 2017). He utilised Random Effect regression for ROA and ROE models and the study revealed that significant and positive relationship existed between board size and financial performance of an undertaking which implies that BSZ relative to the Firm Size (FMZ) resulted into ROA and ROE increase, while board composition produce significant but negative effect on financial performance which implies that if the board are not properly constituted, it will negatively affect the firm's profitability and shareholders wealth maximization objectives.

In their work, Akinleye and Olarewaju (2019), which looked at Corporate Governance and performance of some selected multinational firms in Nigeria for period of 5years (from 2012 - 2016). Precisely, the research work evaluates impact of board size, activism and committee activism as a measure of Corporate Governance mechanism and regress on ROA and firm growth rate as proxies for financial performance. The result from the panel data series extracted from annual financial statement and reports of 4 multinational firms in Nigeria using stationary panel estimation method shown that board size and board activism have negative and significant effects on ROA but committee activism exhibit inconsequential effects on performance. The results further established that board activism and board size have insignificant negative consequent on firm's growth rate. In summary of the findings shown that Corporate Governance have negative but significant relationship on ROA, but its impact on growth rate of multinational companies in Nigeria is insignificant.

Olayiwola (2018) carried out study on Corporate Governance influence on financial performance of listed companies in Nigeria and used explanatory research design to exploit the existed connections corporate governance codes and Net Profit Margin (NPM) of selected 10 firms listed in Nigeria Exchange. While employing Panel data series for the regression model and analysis from data collected from the selected companies, the study findings show that board size and Net Profit Margin are negative but significantly correlation while board composition and NPM are positive and significantly correlation and audit committee independence correlated insignificantly with NPM. The use of only NPM as proxy for financial performance in the study creates a limitation of generalization because NPM is only one segment in determining ROE or ROA.

Adenikinju and Ayorinde (2017) in their work on effect of Corporate Governance practices on manufacturing firms in Nigeria understudied 30 listed manufacturing firms. Findings of the regression results from the Panel series exhibited a weak but significant connection between variables board size and firm's performance.

Also, in the study of Ibrahim *et al* (2016) on Corporate Governance and Financial Performance Nexus: Any Bidirectional causality? Concluded that Management skills, board skills and board composition shown insignificant but positive association with Net Profit Margin and which

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

explained the level of connection that existed between the performance and expertise of board members while BDS and audit committee independence exhibited negative relationship on NPM. The corporate governance coefficient exhibit significant but negative nexus between operating performance and corporate governance index.

Research Methods

This study utilized *ex post facto* research design to explore the relationship among variables using existing quantitative data. The essence of this design in research is to examines cause-effect association among the selected variables being studied using the existing statistical data. Thus, *Ex post facto* study is based in an attempt by the researcher to ascertain the cause-effect relationship between Corporate Governance and financial performance of selected consumer-goods manufacturing companies in Nigeria.

The study population consist of all the consumer-goods manufacturing firms listed in Nigeria Exchange which is estimated to be about 49. Using judgemental sampling, the firm's selection is based on the years of existence as well as the accessibility of empirical data for the study's empirical analysis. Thus, based on the selection criteria, 15 listed firms were selected (see appendix II) covering the period of 10 years running between 2012 and 2021.

The study is based on panel data structure involving 15 (*N*) consumer-goods manufacturing firms and the duration of 10 years (*T*) running from 2012 and 2021. Hence, the panel data structure (involves $N = 15\ firms$ and) (*T*= 10 *years*) involves a total of 150 observations for each of the variables under investigation. Therefore, panel datasets on Corporate Governance measures and the performance measures were pooled from financial reports from sampled consumer-goods manufacturing firms for the given sample period based on their prevailing similar characteristic.

Examining effect of Corporate Governance mechanism on financial performance of consumer-goods manufacturing firms in Nigeria, the study has net profit margin (NPM), asset turnover (AST) and debt- assets ratio (DAR) as the dependent variables for financial performance while board size (BDS), board independence (BDI) and audit committee independence (ADI) as the core explanatory variables for corporate governance measures. Meanwhile, firm size (FMS) was utilised as the control variables so as to avoid or minimize the chances of having model specification bias. The description of these variables is logically exhibited in Table 3.1 below:

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Table 1: - Variable Description Summary

Dependent Variable:	Proxy/Measure	Definition
Financial performance	(a) Net profit margin (*NPM*)	$NPM_{i,t} = \frac{Earnings\ after\ tax}{sales} \times 100$
	(b) Asset turnover (*AST*)	$AST_{i,t} = \frac{Sales}{Total\ Assets}$
	(c) Debt to asset ratio (*DAR*)	$DAR_{i,t} = \frac{Total\ debt}{Total\ assets} \times 100$
Core independent Variables	**Proxy/Measure**	**Definition**
Corporate governance	(a) Board size (*BDS*)	Measures the total number of directors on the board of each sampled firm in each accounting year.
	(b) Board independence (*BDI*)	The percentage of the number of directors that are not participatory in the operations of the organizations
	(c) Audit committee independence (*ADI*)	The extent of autonomy attributed to audit committee in discharging its corporate functions
Control Variable	**Proxy/Measure**	**Definition**
Firm Size (*FSZ*)	Total assets	This represent total asset that is made up of the current and non-current assets

Source: **Researcher's compilation (2023)**

Based on the empirical data structure, the study utilized the panel data methodology. The preliminary analysis is conducted to evaluate the statistical properties of the empirical data. Thus, the preliminary analysis includes primarily the descriptive analysis. The descriptive analysis provides the statistical summary of the panel result which includes mean, max, min, kurtosis, skewness with JarqueBera statistic results of the series being examined for the study.

Since the study involve short panel, static panel data analysis was utilized in assessing the effects of Corporate Governance on performance of the selected manufacturing firms. Static panel estimators are more suitable for short panel were the time points (T) is small relative to the cross-sections (N), that is, $T = 10, N = 15$. More explicitly, panel robust least square (RLS), as an estimation method, was employed. The robust least square was employed to avert the problem of

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

non-normality or outliers in data which guaranteed appropriateness of the test statistic. Thus, robust least square, as a special class of regression model, appears to be less sensitive to non-normality and outliers. The robust least square has three basic methods which include the M-estimation, S-estimation and the MM-estimation.

The M-estimation method addresses the situation in which there is presence of non-normality and outliers in the dependent variables. The S-estimation captures the situation in which there is present of outliers in the independent variable(s). Meanwhile, the MM-estimation is utilized in the situation in which non-normality or outliers are present in both response and explanatory variables. In the context of this research work, it appears that all the response (*NPM*, *AST* and *DAR*) and the core explanatory variable (*BDS*, *BDI* and *ADI*) face the constraint of non-normality and outliers judging by the skewness coefficient, kurtosis and the Jarque-Bera statistics (see table 4.1). In lieu of this and the need to capture the presence of the non-normality and outliers, the study adopts the MM-estimation, which combines both the M-estimation (maximum likelihood estimator-like) and the S-estimation (scale statistic estimator) in the estimation phase.

The post estimation tests are residual-based diagnostic tests was employed to determine the reliability of the panel regression estimates. The post estimation tests conducted herein include normality, serial correlation and cross-sectional dependence, test. The cross-sectional dependence (CD) test was done to examine whether or not the cross sectional units are interdependent or cross-sectionally dependent. However, the null hypothesis of no cross-sectional dependence is desired (That is, existence of cross-sectional independence) in order to have valid test statistics. Therefore, Pesaran CD test was employed to test for the cross-sectional dependence since the number of selected manufacturing firms is large relative to the time period, that is, *T* is small (Hoyos & Sarafidis, 2006).

With reference to the study objectives as stated by the researcher, the target (response) variables include NPV, AST and DAR, as the proxies of financial performance. Meanwhile, the Corporate Governance policy (explanatory) variables include BDS, BDI and ADI and FSZ as control variable. Based on the foregoing, three models were presented for the study addressing each of the dependent or response variables in order to explicitly evaluate to cause effects relationships that existed between them. The functional or implicit forms of the models are specified as follows in respect of NPM Model, AST Model and DAR Model:

***NPM* Model**

$$NPM_{it} = f(BDS_{it}, BDI_{it}, ADI_{it}, FSZ_{it}) \quad (3.1)$$

***AST* Model**

$$AST_{it} = f(BDS_{it}, BDI_{it}, ADI_{it}, FSZ_{it}) \quad (3.2)$$

***DAR* Model**

$$DAR_{it} = f(BDS_{it}, BDI_{it}, ADI_{it}, FSZ_{it}) \quad (3.3)$$

Where:
NPM = net profit margin
AST = asset turnover

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

DAR = debt to assets ratio
BDS = board size
BDI = board independence
ADI = audit committee independence
FSZ = firm size
t = 2012, … 2021 (annual time period)
$\boldsymbol{i}$ = 1, 2, …, 15 (individual manufacturing firms)

Hence, the explicit panel data models for the regression are expressed as follows:

***NPM* Model**

$$NPM_{it} = \varphi_0 + \varphi_1 BDS_{it} + \varphi_2 BDI_{it} + \varphi_3 ADI_{it} + \varphi_4 FSZ_{it} + \mu_{it} \quad (3.4)$$

***AST* Model**

$$AST_{it} = \beta_0 + \beta_1 BDS_{it} + \beta_2 BDI_{it} + \beta_3 ADI_{it} + \beta_4 FSZ_{it} + v_{it} \quad (3.5)$$

***DAR* Model**

$$DAR_{it} = \delta_0 + \delta_1 BDS_{it} + \delta_2 BDI_{it} + \delta_3 ADI_{it} + \delta_4 FSZ_{it} + \varepsilon_{it} \quad (3.6)$$

The '*a priori*' Criteria

It is necessary to state the hypothetical relationships with reference to the expected signs and magnitudes of the parameters (*i.e.* the partial slope coefficients) between the response and explanatory variables. Therefore, the *a priori* expectations are stated as follows:

$$\varphi_j > 0, \text{ where } j = 2, \ldots, 4$$
$$\beta_j > 0, \text{ where } j = 2, \ldots, 4$$
$$\delta_j > 0, \text{ where } j = 2, \ldots, 4$$

The above statements imply expected positive cause-effect relationships between the response variables (*NPM*, *AST*&*DAR*) and explanatory variables (*BDS*, *BDI*, *ADI*&*FSZ*).

Data Analysis and Results

This segment shows the relevant statistical analysis, empirical results and finding discussion for the study. The section includes the descriptive analysis, static panel data regression estimation, and post estimation tests (such as cross-sectional, normality and autocorrelation tests) and findings discussion to give detailed explanations about the implication of results from test statistic.

Descriptive Statistics

The descriptive analysis of the variables being evaluated is hereunder enumerated and this comprises of net profit margin (*NPM*), asset turnover (*AST*), debt to assets ratio (*DAR*), board size (*BDS*), board independence (*BDI*), audit committee independence (*ADI*) and (*FSZ*).

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Table 2-: Summary Statistics
Sample: *N* = 15, *T* = 10 (2012 – 2021)

	Variable						
Statistics	**NPM**	**AST**	**DAR**	**BDS**	**BDI**	**ADI**	**FSZ**
Obs.	150	150	150	150	150	150	150
Mean	4.441	1.057	59.166	2.326	70.717	56.456	7.643
Median	4.345	0.950	59.555	2.303	71.430	50.000	7.830
Maximum	24.910	6.310	150.450	2.890	93.330	100.000	8.740
Minimum	-74.870	0.220	12.420	1.386	38.460	33.330	5.420
Std. Dev.	11.149	0.6734	19.201	0.2789	13.938	18.8697	0.7710
Skewness	-3.4311	4.2359	1.2464	-0.6194	-0.3760	1.6522	-0.9291
Kurtosis	23.0274	29.1997	8.4027	3.8443	3.3282	4.3974	3.5054
Jarque-Bera	2801.167	4738.720	221.2694	14.04802	6.3554	80.4487	23.175
p-value	0.0000	0.0000	0.0000	0.000890	0.0417	0.0000	0.0000

Source: Researcher's computation (2023)

Table 2 depicts the statistical summary of the panel series for the study. Except for *NPM*, all other panel series recorded standard deviation that is lower than their respective mean values of the estimate. This indicates that the variables projected to have exhibited relative level of lower or modest variability and dispersion across the selected manufacturing firms for the given sample period. Meanwhile, distribution of the series such as *AST*, *DAR* and *ADI* seem to be positively skewed as evidenced by their coefficients of skewness which is in positive. On the contrary, the *NPM*, *BDS*, *BDI* and *FSZ* series showed negative skewed distributions as evidenced by their negative skewness coefficients.

The kurtosis coefficients as depicted in series revealed that all the panel variables being investigated appear to be at peaked in the distribution (leptokurtic) with their coefficients of kurtosis higher than the threshold of 3 being the base line acceptable. Overall, the test of normality, using the Jarque-Bera statistics show all series in the panel diverge from the normal distribution assumption having highly significant test results (*i.e.p*-values < 0.05). Therefore, the Jarque-Bera statistics, along with the coefficients of skewness and kurtosis, predict that the sampled panel series of the considered variables does not meet the distribution criteria of normality, and hence, may have extreme values or outliers in their distributions.

Model Estimation and Results

The results of model estimation as well as the model diagnostic tests are presented under this head. Following the summary statistics (table 4.1) which reveal the existence of non-normality and outliers in the variables (judging by the coefficients skewness and kurtosis alongside the Jarque-Bera statistics), the robust least squares (RLS) estimation technique was employed to estimate the panel models involving a period of 10years ( ) between 2012 and 2021 and 15 consumer-goods manufacturing firms (*N* =15). Consequently, based on study objectives, three models were constructed with each model addressing respective objectives.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Table 2 displays the estimated panel models results using Robust Least Squares. The upper panel or section of the table reveals the estimates of the three considered models such as the *NPM*, *AST* and *DAR* models. Meanwhile, the lower panel shows the robust statistics of the estimated model. The Rw-squared statistic, as proposed by Renaud and Victoria-Feser (2010) is utilized as the multiple determination's coefficient for the goodness of fit of the estimated models. Besides, Rn-squared statistic is the robust version of the F-statistic (Wald test) for the global test of significance of the estimated models.

Table 3-: Robust Least Square (MM-Estimation Method) Estimates

Sample: *N* = 15, *T* = 10 (2012 – 2021)

	Model - Dependent Variables:		
	NPM	**AST**	**DAR**
Independent Variable			
Intercept (*C*)	-2.7127 (0.6705)	1.2478*** (0.0000)	22.1704 (0.1377)
BDS	0.7617*** (0.0078)	0.0464*** (0.0000)	-0.1031 (0.8518)
BDI	-0.0224 (0.5869)	0.0047** (0.0140)	0.2310 (0.0170)
ADI	-0.0364 (0.2319)	0.0009 (0.5316)	0.0883 (0.2155)
FSZ	2.6575*** (0.0018)	0.0600 (0.1244)	6.2767 (0.0017)
Robust Statistics:			
R-squared	0.3730	0.3097	0.2972
Adj. R-squared	0.2475	0.2816	0.2723
Rw-squared	0.5254	0.4964	0.4469
Adj. Rw-squared	0.5254	0.4964	0.4469
Rn-squared stat. (Global Test)	15.6068*** (0.0036)	27.0101*** (0.0000)	19.8268*** (0.0005)
Diagnostics:			
Jarque-Bera	2.3094 (0.3152)	1.9823 (0.3710)	5.5315 (0.0629)

Source: Researcher's Computation (2023)

***Note*:** The values in the parenthesis **()** are the p-values underneath the respective coefficients and statistics. The asterisks ***, ** & * denote, respectively, the significance level iconventional 1%, 5% and 10% levels of significance.

Evaluation of Objective 1 (*NPM* Model)

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

The objective involves the effect of Corporate Governance on Net Profit Margin (NPM). Reference to the considered corporate governance measures of BDS, BDI and ADI, the hypotheses are tested to evaluate their influence on the response variable NPM.

Individual Tests of Significance

As shown in Table 3, *NPM* model estimation result reveals that changes in *BDS* (= 0.7617,*p* = 0.0078 < 0.01) appear to have positive and statistically significant influence on *NPM* (net profit margin). Numerically, a 1-unit increase (decrease) in *BDS* will, on average, attract about 0.76-unit increase (decrease)) in *NPM*. Meanwhile, changes in *BDI* ($\boldsymbol{\varphi_2}$ = -0.0224,*p* = 0.5869 > 0.1) and *ADI* ($\boldsymbol{\varphi_3}$ = -0.0364,*p* = 0.2319 > 0.1) appear to have negative, however, statistically insignificant effect on *NPM*. Nevertheless, a 1-unit rise (fall) in each of *BDI* and *ADI* will, on average, result in about 0.022 units and 0.036 unit, respectively, fall (rise) in *NPM*. Consequently, the null hypothesis is rejected for board size (*BDS*) but could not be rejected for board independence (*BDI*) and audit independence (*ADI*).

Meanwhile, while changes in firm size (*FMS*) express a significant positive effect ($\boldsymbol{\varphi_4}$ = 2.6575, *p* = 0.0018 < 0.01) on net profit margin (*NPM*) of the selected consumer-goods manufacturing firms in Nigeria. Numerically, a 1-unit change (increase/decrease) in *FSZ* will be accompanied by about 2.66 units increase (decrease) in net profit margin (*NPM*).

Goodness of fit Measure

As shown in table 3, the adjusted-Rw^2 value of 0.5254 suggests that the included explanatory variables (*BDS*, *BDI*, *ADI* and *FSZ*) in the model produced about 52.54% of the changes in the response variable (*NPM*). However, the estimated regression panel model with the explanatory power **0.5254** is relative at average as evidenced by the adjusted Rw^2 statistic. Thus, the *NPM* model appears to have a moderate predictive power, and thus considered adequate in modelling corporate governance and net profit margin as a measure of financial performance.

Global Test of Significance of the Estimated *NPM* Model

With reference to table 3, the Rn-squared statistics **15.6068** reveals that all the included explanatory variables (*BDS*, *BDI*, *ADI* and *FSZ*) seems to have combined or joint significant influence on financial performance (using *NPM* as a measure) with *p*-value **0.0036** less than 1% significance level. This therefore, indicates that, the considered corporate governance measures have mutual effect on net profit margin of the selected consumer goods manufacturing firms.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

Model Adequacy Tests

The post estimation tests of the robust least square regression analysis are estimated below and this is used analysing normality and adequacy of model adopted. The post-tests are residual-based diagnostics.

Table 4-: Post Estimation Test Results for NPM Model
Sample: *N* = 15, *T* = 10 (2012 – 2021)

Cross-sectional dependence test:		***p*-value**
Pesaran CD Test	-1.4913	0.1359
Serial Correlation Test		***p*-value**
Q-Statistic (Ljung-Box)	2.0977	0.990
Normality Test:		***p*-value**
Jarque-Bera	2.3094	0.3152

Source: Authors' computation (2023)

As shown in table 4, the three diagnostics test such as cross-sectional dependence (CD) test, serial correlation and normality test appear to have insignificant test results as expected (*p*-values above 0.05). Thus, the estimated parameters of the *NPM* model can be considered to be valid and reliable for projection or inferences in policy making since they satisfied the underlying assumptions.

Evaluation of Objective 2 (*AST* Model)
The objective involves the effect of Corporate Governance on Asset Turnover (AST). Similarly, based on the considered corporate governance measures, three hypotheses are tested therefrom.

Individual Tests of Significance
As shown in table 4, *AST* model estimation result reveals that changes in *BDS* ($\boldsymbol{\beta_1}$ = 0.0464,*p* = 0.0000 < 0.01) and *BDI* (β_2 = 0.0047,*p* = 0.0140 < 0.05) appear to have positive and statistically significant effects on *AST* (asset turnover). Numerically, a 1-unit rise (fall) in each of *BDS* and *BDI* will, on average, attract about 0.05 unit and 0.005 unit, respectively, rise (fall) in *AST*. Meanwhile, changes in *ADI* (β_3 = 0.0009,*p* = 0.5316 > 0.1) appear to have positive, however, statistically insignificant effect on *AST*. Nevertheless, a 1-unit increase (decrease) in *ADI* will cause about 0.0009 units change (increase/decrease) in value *AST*. Thus, null hypotheses are rejected for board size (*BDS*) and board independence (*BDI*) but could not be rejected for audit independence (*ADI*).

Meanwhile, while changes in firm size (*FSZ*) exert an insignificant but positive effect (β_4 = 0.0600, *p* = 0.1244 > 0.1) on asset turnover (*AST*) of the selected consumer-goods manufacturing firms in Nigeria. Thus, these implies that, 1-unit rise (fall) in *FSZ* will, on average, will result to about 0.06 units rise (fall) in asset turnover (*AST*).

Goodness of fit Measure

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

As shown in table 4, the adjusted-Rw^2 value of 0.4964 suggests that the included policy variables (*BDS*, *BDI*, *ADI* and *FSZ*) in the model account for about 49.64% of the changes in the response variable (*AST*). However, the estimated regression panel model with the explanatory power **0.4964** is relative average level evidenced by the results adjusted Rw^2 statistic. Thus, *AST* model appears to have a moderate predictive or projecting power, and thus considered adequate in modelling corporate governance codes and asset turnover, as an influencing measure of financial performance.

Global Test of Significance of the Estimated *AST* Model

Revealed from table 4, the Rn-squared statistics of **27.1793** shows that the included variables (*BDS*, *BDI*, *ADI* and *FSZ*) seems to have combined or joint significant influence on financial performance (using *AST* as a measure) with *p*-value (0.0036) which is less than 1% significance level. Thus, considered Corporate Governance measures produce mutual influence on asset turnover of selected manufacturing firms.

Model Adequacy Tests

The post estimation tests of the robust least square regression analysis are estimated below and this is used analysing normality and adequacy of model adopted. The post-tests are residual-based diagnostics.

Table 5-: Post Estimation Test Results for AST Model
Sample: *N* = 15, *T* = 10 (2012 – 2021)

Cross-sectional dependence test:		***p*-value**
Pesaran CD Test	1.9453	0.0617
Serial Correlation Test		***p*-value**
Q-Statistic (Ljung-Box)	1.8276	0.994
Normality Test:		***p*-value**
Jarque-Bera	1.9823	0.3710

Source: Authors' computation (2023)

As shown in table 5, the three diagnostics test such as cross-sectional dependence (CD), serial correlation and the normality test appear to have insignificant test results as expected (*p*-values above 0.05) level of significant. Thus, the estimated parameters of the *AST* model can be considered to be valid and reliable for prediction and inferences in policy making due to its satisfaction of assumption underlying of the estimate.

Evaluation of Objective 3 (*DAR* Model)

The objective involves the effect of Corporate Governance on debt - asset ratio (DAR). Similarly, based on the considered corporate governance measures, three hypotheses are tested therefrom.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Individual Tests of Significance

As shown in table 5, *DAR* model estimation result reveals that changes in *BDS* ($\boldsymbol{\delta_1}$ = -0.1031,*p* = 0.8518 > 0.1) and *ADI* ($\boldsymbol{\delta_3}$ = -0.0883,*p* = 0.2155 > 0.1) appear to have negative but statistically insignificant or inconsequential effects on *DAR* (debt to asset ratio). Notwithstanding, a 1-unit increase (decrease) in each of *BDS* and *ADI* will result in about 0.103 unit and 0.088 unit, respectively, increase (decrease) in *DAR*. Meanwhile, changes in *BDI* ($\boldsymbol{\delta_2}$ = 0.2310,*p* = 0.0170 < 0.05) appear to have express positive and statistically significant effect on *DAR*. This numerically shown that, a 1-unit change (increase/decrease) in *BDI* will produce relatively about 0.23 units increase in *DAR*. Thus, null hypothesis is therefore rejected for board size (*BDS*) and audit independence (*ADI*) while the hypothesis that says board independence (*BDI*) does not have effects on Debts to Asset ratio is sustained. Meanwhile, while variations in firm size (*FSZ*) produce significant and positive effect ($\boldsymbol{\delta_4}$ = 6.2767, *p* = 0.0017 < 0.01) on debt to asset ratio (*DAR*) of the selected consumer-goods manufacturing firms in Nigeria. Numerically, a 1-unit change (increase/decrease) in *FSZ* will, on average, be accompanied by about 6.28 units increase (decrease) in debt to asset ratio (*DAR*).

Goodness of fit Measure

As shown in table 5, the adjusted-Rw^2 statistic of 0.4469 suggests that the included policy variables (*BDS*, *BDI*, *ADI* and *FSZ*) accounts for nearly 44.69% of the changes expressed in response variable (*DAR*). However, the explanatory power of the estimated regression model is nearly at average level evidenced by the adjusted Rw^2 value. Thus, the *DAR* model appears to have a moderate predictive and projection power, and thus considered adequate and valid in modelling corporate governance and its influence on debt-to-asset ratio, as a proxy of financial performance.

Global Test of Significance of the Estimated *DAR* Model

From the estimation as depicted in table 5, the Rn-squared statistic value of **19.8267** revealed that all included variables (*BDS*, *BDI*, *ADI* and *FSZ*) seems to express a combined or joint significant influence on performance (using *DAR* as a measure) with *p*-value (0.0005) less than 1% significance level. Thus, the considered corporate governance measures have mutual relationship on debt to asset ratio (DAR) of the selected consumer-goods manufacturing firms.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026

https://doi.org/10.5281/zenodo.19024073

Model Adequacy Tests

The post estimation tests of the robust least square regression analysis are estimated below and this is used analysing normality and adequacy of model adopted. The post-tests are residual-based diagnostics.

Table 6-: Post Estimation Test Results for DAR Model
Sample: *N* = 15, *T* = 10 (2012 – 2021)

Cross-sectional dependence test:		***p*-value**
Pesaran CD Test	1.5670	0.1171
Serial Correlation Test		***p*-value**
Q-Statistic (Ljung-Box)	1.9399	0.992
Normality Test:		***p*-value**
Jarque-Bera	5.5315	0.0629

Source: Authors' computation (2023)

As shown in table 6, the three diagnostics test such as cross-sectional dependence (CD), serial correlation and normality test appear to have insignificant test results as expected (*p*-values above 0.05). Thus, since the underlying assumption of the estimation has been satisfied, it can be concluded that the estimated parameters of the *DAR* model can be considered to be valid and adequate for projection or inferences in policy making.

Summary of Hypotheses Testing Results

Based on the foregoing estimation results, a summary tests of significance of the estimated is provided in the section to reveal the tests of hypotheses result for the study. Meanwhile, tests of significance focus on the estimated long-run equations of the three (3) model.

LASUJMS
JOURNAL OF MANAGEMENT SCIENCES

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

Table 6-: Summary of Tests of Hypotheses Result

	Null Hypotheses (H_0)	Stat. Significance
1	Corporate Governance (Board size) does not have significant effect on net profit margin of consumer-goods manufacturing firms.	Significant
2	Corporate Governance (Board independence) does not have significant effect on net profit margin of consumer-goods manufacturing firms	Insignificant
3	Corporate Governance (Audit committee independence) does not have significant effect on net profit margin of consumer-goods manufacturing firms	Insignificant
4	Corporate Governance (Board size) does not have significant effect on Asset Turnover of consumer-goods manufacturing firms.	Significant
5	Corporate Governance (Board independence) does not have significant effect on Asset Turnover of consumer-goods manufacturing firms	Significant
6	Corporate Governance (Audit committee independence) does not have significant effect on Asset Turnover of consumer-goods manufacturing firms	Insignificant
7	Corporate Governance (Board size) does not have significant effect on Debt-Asset Ratio of consumer-goods manufacturing firms.	Insignificant
8	Corporate Governance (Board independence) does not have significant effect on Debt-Asset Ratio of consumer-goods manufacturing firms	Significant
9	Corporate Governance (Audit committee independence) does not have significant effect on Debt-Asset Ratio of consumer-goods manufacturing firms	Insignificant

Source: Researcher's compilation (2023).

Table 6 represents summary of the test hypotheses results derived from the model estimation results. Table shows the direction of impact and test of significance for the hypotheses. In other words, the table reveals at a glance the analysis of empirical findings of the research work.

Discussion of Findings

In examining the corporate governance (CG) on financial performance of consumer-goods manufacturing firms in Nigeria, three panel models were estimated for each of net profit margin, asset turnover and debt-asset ratio, as measure of financial performance. From the evaluation of analysis, the statistic empirical findings from the results reveal that BDS cause significantly positive effect on net profit margin. This suggests that effective changes in board size have the tendency of enhancing the net profit margin position of the sampled manufacturing firms. However, board independence/composition and audit independence were discovered to exact positive but inconsequential influence on net profit margin. This support the findings and

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

conclusion of Musa, (2019) while using Random Effect regression for ROA and ROE models revealed that BDS express significant and positive influence on performance while board composition/independence have negative significant effect. Also Ibrahim *et al* (2016) concludes that adopted corporate governance codes revealed insignificant and positive effects on Net Profit Margin while BDS and ADI exhibited negative relationship on NPM. In addition to this, Stephen and Waburigo (2022) where the results found that the chosen Corporate Governance measures expressed significant but negative influence on earnings management, while they also shown significant positive association with performance variable of ROE.

The study's findings also reveal that BDS and BDI exert significant favourable effects on asset turnover (AST) while audit independence was revealed positive but insignificant impact on asset turnover. Thus, both BDS and BDI have the significant capacity in the utilization of firms' asset in generating revenue. This implies that, the operation of going concerns with the adoption of Corporate Governance principles/policy can generate enough revenue to cover investments in total assets. Meanwhile, board independence was fund to exert significantly positive effect on debt-asset ratio while board size and Audit Committee Independence shows adverse inconsequential effect on debt-assets ratio. The findings confirm the work of Gadi *et al*, (2015) that BDS had significant and positive influence on performance meanwhile, according to Adenikinju and Ayorinde (2017) board size had insignificant empirical outcome. Naveed *et al* (2020) which expressly found out that BDS is adversely and significantly related to ROA and ROE while board independence exhibit positive relationship. In the same vein, Olayiwola (2018) concludes that BSZ and audit independence were insignificantly associated with return on equity. Evidently, a sizeable number of the reviewed works had it that Corporate Governance had momentum in increasing financial performance of companies when properly implemented. In Nigeria, Many manufacturing companies efforts to adopt corporate governance practice most time increase their board size with proportionate mixture executive and non-executive member to enhance the board independence. But negative effects exhibited by some of the variable most especially, Board Independence indicate that the board most times abdicate their oversight functions for self-interest

Conclusion and Recommendations

The research work had emphasized the effect of Corporate Governance on the financial performance of manufacturing firms in Nigeria with the focus on consumer goods firms using DuPONT Model analysis to illustrate these impacts. The findings show that, corporate governance codes or characteristic such as Board size, Board independence, and Audit committee Independence have a mixture of effects on financial performance proxies of Net Asset Margin, Asset Turnover and Debts to Assets Ratio of manufacturing firm in Nigeria. Board Size expressed positively and significant influence on both Net Profit Margin and Asset Turnover while it revealed an insignificant and negative relationship with Debts to equity Ratio. Whereas, Board independence and Audit Independence posted an insignificant and negative relationship with Net Profit margin but they both expressed positive and significant relationship on Asset turnover and Debts to Equity Ratio. This in effect showed that all identified variable are positively and significantly related which by implication can be concluded that corporate governance practices have direct relationship with Return on Equity or financial performance of the manufacturing firms

VOLUME 9, ISSUE 1 - 2026
https://doi.org/10.5281/zenodo.19024073

in Nigeria. Going by the findings of this work, it is therefore recommended that, a proportionate and noticeable increase in board size should be encouraged as this will allow for impactful oversight of the management which will significantly improve the performance of manufacturing firm in Nigeria. In addition to this, it is also recommended that while increasing the board size, the board composition must be done in right proportion of executive and non –executive members with various degrees of specializations to allow for expertise, skill and competence in the discharge of their functions. The work shows that consumer goods manufacturing firms can increase their financial performance by constituting the board with large number of independent directors. This will increase the level of independence of the Board as the non-executive have more authority to assessed the performance level of the management objectively with more emphases on protecting and increasing the wealth of stakeholders and shareholders respectively. For audit committee to be independent, the composition and member's expertise must be put into consideration which is expected to be in admissible proportion to guarantee their independence and autonomy. To this end therefore, it is advised that when considering Corporate Governance mechanism to be adopted and its applicability, the cost and benefit analysis of the process must be undertaken so that the attributable cost will not outweigh the perceive benefit. In summary, the cost of governance practice must be proportionate to the benefit derivable. In addition, It is recommended that these firms should continually fine-tune their CG practices so that it can bear positively on the financial performance measures of net profit margin and the equity multiplier.

Having noticed from this research work, that DuPONT model and analysis has not been adequately employed in most research works in Nigeria most especially in financial sectors and in other manufacturing sectors to evaluate influence of Corporate Governance practices on financial performance. Exploring this area is therefore recommended.

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VOLUME 9, ISSUE 1 - 2026

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