

## CORPORATE ATTRIBUTES AND FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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### ABSTRACT

*This paper works on the connection between corporate characteristics and financial performance of the listed industrial goods companies in Nigeria. Based on the panel data of the firm size, firm growth, and firm leverage on financial performance (in terms of earnings per share, ROA and ROE) during a period of ten years (2015-2024) of industrial goods companies listed on the Nigerian Exchange Group (NGX), the study examines the effects of firm size, firm growth, and firm leverage on the financial performance of firms. The research utilizes the panel regression analysis that uses the fixed effects estimation after the Hausman test and Breusch-Pagan test are carried out to arrive at the required model specification. The results indicate that the firm size and firm growth have strong negative impacts on financial performance, but firm leverage has a mixed result according to the performance measure applied. In particular, firm size (natural logarithm of total assets) has a significant and positive correlation with ROA ( 0.234,  $p < 0.05$ ) and EPS ( 0.189,  $p < 0.05$ ). The firm growth (in terms of percentage change in sales) has a strong positive correlation with all performance measures (ROA = 0.312,  $p < 0.01$ ; ROE = 0.287,  $p < 0.01$ ; EPS: = 0.256,  $p < 0.05$ ). The leverage of the firm (debt-asset ratio) is positively, yet insignificantly, related to ROE ( 0.142,  $p < 0.10$ ) but has no significant relationship with ROA. The paper finds that corporate attributes play a significant role in financial performance, and growth of the firm is the most predictable. To maximize shareholder value, the management must consider maximizing firm size by undertaking strategic expansion, pursuing sustainable growth perspective and moderately maintain leverage levels. The results have a contribution to both the stewardship theory and the signaling theory whereby the results show that successful management of resources and strategic signaling by growth initiatives has a positive effect on the performance of firms in the industries sector of industrial goods in Nigeria*

**Keywords:** Corporate Attributes, Firm Size, Firm Growth, Firm Leverage, Financial Performance, Earnings Per Share, Industrial Goods Firms, Nigeria

### INTRODUCTION

The industrial goods sector is important in the economic development of Nigeria since it adds a significant contribution to the manufacturing production, provision of jobs and gross domestic product (GDP). Companies that operate in this segment such as cement manufacturers, paints, packaging materials, building materials and other capital goods are very important in the industrialization aspirations of the country. These companies do not only facilitate company growth but also enhance growth of infrastructure and necessary services in the country. These firms are also important, but they are vulnerable to a number of challenges that can affect their financial performance, including changes in macroeconomic factors, lack of adequate infrastructure, fluctuations in exchange rates, and competition (Adebayo & Olagunju, 2023). This has made financial performance a very crucial concern amongst many stakeholders such as investors, creditors, regulators and the management of the company. It is necessary to understand the utilization of resources and their ability to deliver sufficient returns to make the right decisions and promote the long-term sustainability of such firms (Ogunyemi and Balogun, 2022).

Corporate attributes, including firm size, growth and leverage are one of the main aspects of financial performance. These are key performance drivers that have been researched broadly in the corporate finance literature (Eze & Akintoye, 2021). The size of firms, which is generally determined in terms of total assets, sales revenue, or market capitalization, is usually believed to offer benefits such as economies of scale, more market power, increased access to resources and capital. Big companies might enjoy economies of scale, greater bargaining power in the markets with customers and suppliers, and more convenient access to capital markets (Akpan & Ibrahim, 2022). But the association between the performance and the size of firms is complicated. At some point, diseconomies of scale can affect the firm, as bureaucratic systems and communication issues can become inefficient and negatively affect the performance (Ojo & Adeyemi, 2021).

Firm growth which is commonly measured in terms of sales growth or growth in assets is a measure of how a firm is able to exploit new markets and increase its resource base. The growth based companies are likely to invest in new products, markets, and technology that are able to enhance their competitiveness and profitability. But in case of fast or uncontrolled growth, it may overstretch organizational resources and financial ability, which may result in the deterioration of performance (Bello & Salami, 2020).

The degree of leveraging a firm by debt to finance its operations also influences financial performance. A middle degree of leverage may also increase returns to equity holders by providing tax shields and motivating the management to become more efficient. Nonetheless, too much leverage creates financial risk, increases the risk of bankruptcy, and decreases strategic flexibility, none of which benefit performance (Fakoya and Durojaiye, 2023). The optimal capital structure question is a controversial issue in the field of corporate finance, and various types of empirical research have reported different outcomes in industries and situations (Adeyemi and Adebayo, 2021).

Although much of the research on the performance of firms in Nigeria is growing, there are a number of gaps. Most of the studies that have been conducted have concentrated on the banking and consumer goods industries, but the industrial goods industry has received little focus as the industry has different operational and financial features (Ejura et al., 2025). Also, there has not been an extensive study on how various corporate characteristics interrelate with their impacts on various aspects of financial performance (Musa et al., 2025). Lastly, the theoretical frameworks that have associated corporate attributes to performance in the Nigerian setting especially the stewardship and signaling theories need further research (Central Bank of Nigeria, 2022).

This paper seeks to address these gaps by investigating how corporate factors (firm size, firm growth and firm leverage) are related to financial performance (quantified by EPS, ROA and ROE) among listed industrial goods firms in Nigeria. The research is informed by the stewardship theory which postulates that managers are responsible stewards whose primary goal is to maximize the performance of the organization and signaling theory which assumes that corporate attributes represent the quality of the firm and its future to the external stakeholders (Ibrahim et al., 2025). The main goal of the research is to examine the effects of corporate attributes on the financial performance of the listed industrial goods companies in Nigeria with keen interest in the effect of the firm size.

- i. Research on how firm development affects financial performance of listed industrial goods firms in Nigeria.
- ii. Establish the effect of firm leverage on financial performance of Nigerian listed industrial goods firms.

## **REVIEW OF RELATED OF LITERATURE**

### **Concept of Corporate Attributes**

The characteristics and strategic choices that are intrinsic to a firm, which determines the way the firm operates and affects the financial performance of the firm are called corporate attributes. The attributes are very important in the determination of the performance of some firms compared to others. In this paper, we concentrate on three major corporate attributes firm size, firm growth and firm leverage that have remained prominent factors in the literature as being determinant of firm performance.

### **Firm Size**

Firm size is an essential parameter in determining the efficiency of the operations of a company since it gives the size of the operations of the company and the resources available to it. The level of firm size is usually measured by the measures of total assets, sales revenue, employee count, or market capitals (Musa et al., 2025). In the case of industrial goods firms in Nigeria, the measure most frequently used is total assets since they reflect the resource backing of the company including important assets such as property, plant and equipment that is important in the production process. The bigger companies are more likely to enjoy the economies of scale that may enable them to be efficient in their operations and compete well in the market.

### **Firm Growth**

Firm growth is the expansion of the activities, market share and the resources of the company with time. Growth is commonly measured in terms of change in the sales revenue percentage, change in total assets, or change in market value in period to period (Abdul et al., 2025). The main indicator in this study is the sales growth since it directly shows how a firm is able to expand its market share and create additional sources of revenue. Expansion is especially crucial in companies in a competitive industry like industrial products because it indicates the ability of the company to be creative, adapt to the environment, and exploit new opportunities. In the case of the Nigerian industrial goods companies, the massive growth has been spurred by massive infrastructure development, urbanization trends, and government projects such as the National Housing Programme and the Presidential Infrastructure Development Fund (Chamba et al., 2024).

### **Firm Leverage**

The degree to which a company uses debt as a part of its capital structure is known as firm leverage and as a result, it is a very important financial characteristic that has a direct effect on the risk and the return profile of a firm. Ratios that are normally used to measure leverage include debt-to-assets, debt-to-equity, or debt-to-capital (Ejura et al., 2023). This paper deals with the debt to assets ratio, which gives a clear view of the total indebtedness of a firm in relation to the amount of assets it has. The leverage is an important factor influencing the financial strategy and performance of a firm. The trade-off theory suggests that companies balance the advantages of debt, including tax shields since interest is deductible, and the risks involved, including being in distress and facing bankruptcy and lack of flexibility to conduct their activities (Abdul et al., 2025). Debt is also a disciplining mechanism, lowering the agency costs, and pushing the management to work more efficiently because debt laden firms have to settle their dues on a regular basis. Leverage however, when overextended, can cause financial instability, which will restrict a firm to adjust to the dynamics in the market.

### **Empirical Review**

Akpan and Ibrahim (2022) found that larger firms in Nigeria's industrial sector, such as Dangote Group and Lafarge Africa, exhibit superior financial performance compared to smaller firms. Their ability to access capital at lower costs, negotiate better terms with suppliers, and leverage more substantial resources contributes to higher profitability and stability. The study likely uses a quantitative research approach to explore the relationship between firm size and financial performance within Nigeria's industrial sector. It probably involves comparing large and small firms over a set period, using either cross-sectional or panel data analysis to assess key financial metrics. For data collection, the researchers would have gathered secondary data from sources like audited financial statements, annual reports, and other relevant documents of industrial firms listed on the Nigerian Stock Exchange (NGX). These documents would include financial performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS). In terms of sample selection, the study would focus on both large and small firms within the industrial sector. It likely includes major firms like Dangote Group and Lafarge Africa, comparing their performance with smaller firms in the same sector. The selection criteria would include factors like market capitalization, listing status, and the availability of data over a defined period. This finding aligns with the theory that larger firms benefit from economies of scale, allowing them to reduce per-unit costs, improve market power, and generate better financial outcomes

However, not all studies agree that the relationship between firm size and performance is always positive. Ojo and Adeyemi (2021) argued that while larger firms enjoy certain advantages, they also face challenges such as bureaucratic inefficiencies and coordination problems that can hinder their performance. Their study showed that beyond a certain size threshold, the benefits of size begin to diminish, and diseconomies of scale emerge. This indicates that the size-performance relationship may be non-linear, with the optimal firm size varying depending on the firm's management and market conditions.

In the context of Nigeria, the concentration of industrial goods production among a few large firms highlights the importance of firm size. Larger firms, with their ability to navigate regulatory and macroeconomic challenges, tend to outperform smaller competitors, particularly during economic downturns or when there is limited access to foreign exchange.

Firm growth, particularly in terms of sales revenue, is a crucial indicator of a firm's ability to expand its market share and generate additional revenue streams. Many studies have emphasized the importance of growth as a strategic objective, particularly in competitive industries like manufacturing. Growth signals a firm's innovation, capacity to exploit new market opportunities, and ability to diversify its operations.

In Nigeria's industrial sector, growth has been linked to various external factors, including government policies and infrastructure development. Eze and Akintoye (2021) found that firm growth in Nigeria's industrial goods sector is driven by government initiatives such as the National Housing Programme and the Presidential Infrastructure Development Fund, which create opportunities for construction and manufacturing firms. They also noted that urbanization and increased demand for industrial products further fueled the growth of firms in the sector.

However, the relationship between growth and performance is not always straightforward. While growth is generally associated with improved performance, excessive growth can strain a firm's resources and lead to negative outcomes. Bello and Salami (2020) observed that rapid growth in Nigeria's industrial sector often comes at the expense of profitability. Firms that aggressively expand without considering operational efficiency or financial sustainability may face cash flow issues, higher costs, and declining margins [Musa, et al, 2025]. This finding suggests that the growth-performance relationship is non-linear, and firms must balance growth with careful management of their resources to avoid overextension.

## Theoretical Framework

### Stewardship Theory

The traditional agency theory has a different explanation as stewardship theory where Donaldson and Davis (1991) first introduced the stewardship theory. Although the agency theory highlights the conflict of owners and managers as managers are likely to act in their own self-interest to the disadvantage of shareholders, stewardship theory is more optimistic. It implies that managers especially those who are in family-owned businesses or those in closely-held firms are naturally driven to do what is in the best interest of the organization. Instead of working to benefit themselves, managers under the stewardship theory take intrinsic pleasure in the success of the organization, and are motivated to achieve the best performance of the organization in the long run period.

This theory has its basis on the principles of psychology and sociology especially intrinsic motivation and identification with an organization. High order needs like achievement, self actualization and success of the entire organization are the driving forces that will motivate steward-managers as opposed to the lower order needs that include financial rewards. They perceive themselves as the success of the firm and are highly interested in ensuring long term sustainability of the firm.

When applied with regard to the corporate attributes and financial performance, the stewardship theory suggests that the managers will take strategic decisions about the size of the firm, its growth and leverage that will support the long-term organizational objective. As an illustration, a manager in a stewardship approach is bound to seek growth opportunities that will improve the competitive position that the firm faces at the expense of reducing its profitability. In the same way, they will strive to have an optimum size of the firm without having to expand unnecessarily, which may result into inefficiency. In the aspect of leverage, the stewardship theory indicates that managers would act judiciously in borrowing and investing the loans in value-generating investments without taking too much risk that may jeopardize the financial stability of the company.

The stewardship theory is particularly applicable in the Nigerian industrial goods industry where the prevalence of closely-held and family-owned firms are the norm. In such companies, the owner-managers tend to consider the business as a heritage that should be passed to the next generations and thus they are very much concerned with the success of the company. This harmony of interests among the owners and the managers lowers the agency costs as well as promoting the long term decision making. Studies in Nigeria have indicated that companies with high CEO tenure which is normally considered as having stewardship orientation performs better than companies with short managerial terms. Moreover, family-owned companies have a higher probability of displaying stewardship behaviors, and this fact leads to better performance compared to non-family companies, especially in emerging markets (Adebayo & Olagunju, 2023).

### METHODOLOGY

This paper adopts a quantitative research design and the panel data analysis is to examine the correlation between corporate features and financial performance of listed industrial goods companies in Nigeria. The data used in this type of analysis has a number of advantages such as panel data, which is used to merge cross-sectional and time-series data. They are a bigger sample, lesser collinearity of variables, greater estimation efficiency and the unobserved heterogeneity can be taken into consideration. In this way, panel data can be an effective instrument of testing the changeable relationships among corporate features and financial results.

The study design is ex-post facto, which implies that the research will be based on the past data that have already been created and released by the companies under investigation. The design is especially appropriate when one would like to learn about the relationship between variables and experimental manipulation is unnecessary, as it is employed in the field of corporate finance research. Through analysis of the past data, the study will be able to determine the effect of corporate attributes on financial performance over the years.

The research is based on the entire companies of the industrial goods industry of the Nigerian Exchange Group (NGX) on December 31, 2022. Such sector encompasses firms dealing in cement, painting materials, packaging materials, building materials and other capital products. When the study was conducted (time), it had 13 listed firms in this sector.

A number of criteria were used to ensure consistency and reliability of data in the selection of the sample firms. First, it was limited to those firms that had remained listed on the NGX during the study period (2013 to 2022) so that the data captures the performance of the firm over the whole study period. Second, only companies that had full financial statements of all years of the study period were picked. Companies that had been suspended or delisted under regulatory reasons at this period were not included to prevent a gap in data or interference to the analysis.

Based on these criteria 10 firms were selected as the final sample. These companies are a wide cut across the industrial goods industry in Nigeria comprising of cement producers, paint manufacturers and chemical producers. The research is based on a 10-year horizon (2013- 2022) and a total of 100 firm-year observations are obtained. This time frame is notable because it includes several macroeconomic events, such as the recession of 2016-2017, oil price volatility, foreign exchange crises, and the COVID-19 pandemic, which makes the economic framework of the analysis very diverse and rich.

The research used secondary data to gather the information in the form of audited annual financial reports and statements of the sampled companies. These sources were found on a few reliable sources, such as the Nigerian Exchange Group (NGX) webpage and database, the individual company webpages, the Financial Reporting Council of Nigeria (FRCN) databases and Bloomberg Terminal. Audited financial statements are used to guarantee the reliability and accuracy of the data as such reports follow International Financial Reporting Standards (IFRS) and are also verifiable by independent auditors.

With regard to measuring a variable, this research aims at dependent and independent variables together with a set of control variables to give a complete picture on the relationship between corporate attributes and financial performance. The financial performance variables that are the dependent variables are the Return on Assets (ROA), Return on Equity (ROE) and Earnings per share (EPS).

#### **DATA ANALYSIS AND DISCUSSION OF FINDINGS**

This part details and talks about the empirical results of research. The study is done in a systematic manner following the descriptive statistics to correlation analysis, diagnostic tests and ultimately interpretation of regression findings.

##### **Descriptive Statistics**

Descriptive analysis of all the variables used in the research, which will give the information on the central tendencies, deviation, and the range of the data.

#### **Descriptive Statistics**

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA (%)	100	8.45	6.23	-4.21	24.67
ROE (%)	100	14.78	10.54	-8.35	42.13
EPS (₦)	100	3.67	4.82	-2.14	18.45
FSIZE (Ln TA)	100	18.34	2.15	14.23	22.89
FGROW (%)	100	12.67	18.45	-25.34	68.92
FLEV (%)	100	32.45	16.78	5.67	72.34
FAGE (Years)	100	38.5	18.6	12	68

The average ROA of 8.45 percent is an indication that, averagely, every 100 naira invested in assets will yield industrial goods companies a net income of 8.45 per cent. The standard deviation of 6.23% however shows that there is considerable variation in the level of efficiency with which the firms are making use of the assets. This disparity is also shown by the range of ROA which is between -4.21% and 24.67. Although there were firms that were able to use their assets most effectively, others have incurred losses and this has been witnessed especially in the hard times like the 2016-2017 recession and the COVID-19 pandemic.

Concerning Return on Equity (ROE), the mean value of 14.78 indicates that the shareholders on average earned a 14.78 per cent on their equity investment. This has been regarded as moderate particularly in the Nigerian context where investors normally demand returns of between 15-20% to cover the risks of the country. The standard deviation of 10.54% is high and the range between -8.35 and 42.13 is wide which means that there is very high variation in performance. There have been some firms with high returns and others that were unable to create shareholder value and even ruined it.

In the case of the Earnings Per Share (EPS), the mean of 3.67 is used to represent the average level of profit that the firms in the sample will make. The standard deviation of 4.82 is relatively high which indicates that there is a high degree of variability in the earnings per share, indicating a difference in profitability, capital structure and share capital among the firms. Also, the lowest negative value of - 2.14 means that there are firms that have been making losses at some point in time and this further supports the point that the financial performance of the sector is diversified.

To the corporate attributes, the average level of natural logarithm of total assets is 18.34, which would translate to an average asset base of about 100 billion naira ( $e^{18.34}$ ). The SD of 2.15 indicates a great range in the size of firms. Indicatively, an example is Dangote Cement, the largest company in the sample which is significantly bigger compared to small companies such as Meyer Plc or Cutix Plc. This is a typical characteristic of the industrial goods industry in Nigeria, with many giant players controlling most of the market share. The average growth of 12.67 percent in the sales is an indicator of a moderate growth of a firm in this sector despite the macroeconomic issues. The large standard deviation of 18.45% and the large discrepancy of -25.34 to 68.92 would however indicate that the growth of the sector is very cyclical with companies having extreme variances in their performance, based on their strategies and their response to the current economic environment. The negative minimum indicates the cases in which particular firms experienced a decrease in sales in the times of economic recessions or because of the rise in competition.

The average leverage ratio of 32.45 percent shows that at the average, 32.45 percent of the total assets of a firm are funded by debt. It is an average leverage in the Nigerian environment. The range of 5.67 to 72.34 and the standard deviation of 16.78 percent indicate there is a wide range of leverage strategies. There are other firms which have relatively low capital structure and those who are more aggressive in the sense that they use ample debt. On the sample age of firm, the mean age of firms in the sample is 38.5 years implying that the majority of the firms are well established and their operation history is not new. The age bracket, 12-68 years, indicates a combination of younger

companies, which have been in operation since 2012 when they were listed like the BUA Cement, and older companies, as the Lafarge Africa which was formed in the 1950s.

Such descriptive statistics give a good ground on the nature of the Nigerian industrial goods firms. They also precondition the interpretation of the regression results and the investigation of the impact of these corporate features on the financial performance in the sector.

	ROA	ROE	EPS	FSIZE	FGROW	FLEV	FAGE
ROA	1.000						
ROE	0.782***	1.000					
EPS	0.654***	0.723***	1.000				
FSIZE	0.423***	0.389***	0.512***	1.000			
FGROW	0.487***	0.456***	0.434***	0.234**	1.000		
FLEV	0.089	0.256**	0.134	0.345***	0.178*	1.000	
FAGE	0.312***	0.267**	0.289**	0.567***	0.089	0.198*	1.000

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

The correlation analysis on all the performance measures provides useful information on the relationship between different profitability indicators and each other. The correlation between Return on Assets (ROA) and Return on Equity (ROE) is very high ( $r = 0.782, p < 0.01$ ), meaning that the more efficient is the use of assets within a firm, the more chances it has to provide high returns to its shareholders. This is natural, given that both of them are profitability metrics, and ROE has leverage. The Earnings Per Share (EPS) is strongly associated with ROA ( $r = 0.654, p < 0.01$ ) and ROE ( $r = 0.723, p < 0.01$ ), which supports the premise that the higher the profitability, the higher the EPS.

In analyzing the size of the firms, the data shows that there are positive associations between the firm size (FSIZE) and the three performance measures. In particular, ROA ( $r = 0.423, p < 0.01$ ), ROE ( $r = 0.389, p < 0.01$ ), and EPS ( $r = 0.512, p < 0.01$ ) are associated with firm size, which implies that bigger firms are more likely to perform. This is in line with the fact that a high degree of performance is based on economies of scale and more resources. Also, medium correlation between firm age and firm size ( $r = 0.567, p < 0.01$ ) means that old firms tend to be bigger as they have years of growth.

Firm growth (FGROW) is also positively associated with all the measures of performance, strong correlation with ROA ( $r = 0.487, p < 0.01$ ), ROE ( $r = 0.456, p < 0.01$ ), and EPS ( $r = 0.434, p < 0.01$ ). This qualifies the hypothesis of growth-performance, which indicates that the firms with increase in sales are likely to experience subsequent increase in profitability and shareholder returns. The low correlation between the growth of firms and the size ( $r = 0.234, p = 0.05$ ) points to the fact that the growth is not only determined by the size of firms where smaller ones can gain the high growth due to their innovation on the market and their ability to develop adequate strategies.

The connection between performance and firm leverage is less positive. There is a positive but non-significant correlation between leverage and ROA ( $r = 0.089$ ), which is indicative that leverage does not significantly affect the use of assets. However, on the contrary, the relationship between leverage and ROE is positive and statistically significant ( $r = 0.256, p < 0.05$ ), which means that leverage can increase returns to equity holders by increasing

profitability. The correlation between leverage and EPS was found to be a significant but weak ( $r = 0.134$ ) relationship implying that leverage does not have a direct relationship with per-share earnings.

The leverage is also positively and significantly correlated with the size of firms ( $r = 0.345$ ,  $p < 0.01$ ), which means that bigger companies are more likely to borrow debt. This may be explained by the fact that access to credit markets is improved and perceived risk by lenders is lower meaning that larger firms will be able to assume more debt as compared to their assets.

These results suggest the intricate relationships between corporate features and financial outcomes. Although major performance indicators such as ROA, ROE and EPS have strong interrelations, the correlations between the firm size, growth and leverage display more subtle patterns due to the complexity of business performance in the industrial goods industry.

### Breusch-Pagan Lagrange Multiplier (BP-LM) Test

The Breusch-Pagan test is conducted to determine whether random effects estimation is more appropriate than pooled OLS by testing for the presence of panel-level variance.

#### Breusch-Pagan Test Results

Model	Chi-square	p-value
Model 1 (ROA)	45.67	0.0000
Model 2 (ROE)	52.34	0.0000
Model 3 (EPS)	38.92	0.0000

The Hausman test outcome of all three models depicts that the chi-square is significant ( $p < 0.01$ ) hence rejecting the null hypothesis that suggests that the idiosyncratic errors are not correlated with the regressors. This implies that the firm-specific effects are associated with one or more independent variables, which complicates random effects estimation, and it is biased. Hence, the relevant method in the three models is fixed effects estimation.

The large Hausman test indicates systematic differences among firms that are related to the corporate attributes. Indicatively, greater companies can possess hidden attributes (including better management or more effective positioning in the market) that are associated with both the size and performance of the firm. The fixed effects estimation captures these time-invariant firm-specific characteristics which give consistent and unbiased estimates.

Final Decision on Model Specification: Fixed effects panel regression is used in all the three models based on the diagnostic tests. The fixed effects estimator helps to regulate all time-invariant firm specific attributes, and concentrates on the within-firm changes across time in order to estimate the impact of corporate attributes on financial performance.

### Model 1: Corporate Attributes and Return on Assets (ROA)

The coefficient for firm size (FSIZE) is positive and statistically significant at the 5% level ( $\beta = 0.234$ ,  $p < 0.05$ ), indicating that larger firms tend to achieve higher returns on assets. Specifically, A one unit change of the natural logarithm of total assets is linked to a 0.234 percentage point shift of ROA, other things being equal. This is equivalent to a 2.34% ROA growth with a 10 percent growth in total assets. This observation reinforces the hypothesis that the firm size has a positive impact on the profitability of the assets because large firms enjoy the gains of economies of scale, operating

Variable	Model 1: ROA	Model 2: ROE	Model 3: EPS
FSIZE	0.234** (0.098) [2.39]	0.167 (0.145) [1.15]	0.189** (0.087) [2.17]
FGROW	0.312*** (0.067) [4.66]	0.287*** (0.089) [3.22]	0.256** (0.102) [2.51]
FLEV	-0.078 (0.112) [-0.70]	0.142* (0.078) [1.82]	0.034 (0.095) [0.36]
FAGE	0.156 (0.134) [1.16]	0.123 (0.156) [0.79]	0.098 (0.121) [0.81]
Constant	-2.456 (1.567) [-1.57]	-1.234 (2.123) [-0.58]	-1.876 (1.789) [-1.05]
Observations	100	100	100
Number of firms	10	10	10
R-squared (within)	0.4567	0.3892	0.3645
R-squared (between)	0.5234	0.4567	0.4123
R-squared (overall)	0.4823	0.4178	0.3856
Note: Standard errors in parentheses; t-statistics in brackets			12.67***
*F-statistic < 0.01, ** p < 0.05, * p < 0.1	10* 18.45***	14.23***	

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efficiencies, and utilization of resources. These companies can distribute fixed costs to a greater volume of production, enjoy economies of bulk purchasing, and use brand name to gain greater market strength. Larger companies also have increased access to foreign exchange distributions as well as are sufficiently positioned to overcome regulatory obstacles in the Nigerian environment, which reduces to high-quality asset efficiency. This finding is in line with stewardship theory which argues that

The table Suggests that the optimal size of firms that the steward-managers can grow to, maximizes their operational efficiency, and signaling theory, in which the larger the size, the market power and operational maturity, and therefore may lead to a reduction in the cost of capital and an increase in profitability.

To sustain the firm growth (FGROW), the coefficient is positive and significant at 1% level (0.312,  $p = 0.01$ ), it is found that the sales growth and the return on assets have a positive relationship. The sales growth percentage also increases by one percentage point by 0.312 percentage point by growth hence growth was the biggest corporate attribute in this model. This result supports the fact that growth is a very important factor to improve the profitability in the industrial goods sector in Nigeria. Companies that manage to increase their sales are able to enjoy increased efficiency in terms of asset utilization and operation. Expansion allows companies to distribute fixed cost over a bigger income base, advantages of learning curve impact, and exploit new market chances. The positive correlation between firm growth and asset profitability is consistent with the stewardship theory (the growth-oriented managers help to improve the performance of organizations) and signaling theory (the growth signals competitive advantages and attract the support of stakeholders).

The coefficient of firm leverage (FLEV) however, has a negative but insignificant coefficient ( = -0.078,  $p > 0.10$ ) indicating leverage does not have significant influences on the return on assets in this sample. The negative sign could have indicated that an increase in leverage lowers the profitability of asset, but the non-statistical significance indicates that we cannot conclude that there is a notable relationship. The given outcome can be explained by the non-linear and intricate nature of the leveraging-performance correlation. Although moderate leverage can present tax advantages and efficiency-promoting impacts, an excessively high leverage introduces financial distresses costs and interest payments that might decrease the profitability. Moreover, ROA is determined prior to taking into account capital structure which makes it possibly less susceptible to leverage effects than such measures as ROE.

The firm age (FAGE) coefficient is positive but not significant ( -0.156,  $p > 0.10$ ) indicating that firm age is not a significant effect on return on assets after the other variables have been considered and firm specific effects have been accounted. Although the older firms might have gained valuable experience and knowledge of the market, this does not translate into the efficiency of the assets in this sample. This observation implies that in the vibrant Nigerian market longevity is not a sure way to have better use of the assets. Innovative strategies and modern technologies can equally ensure high efficiency of assets at younger companies.

The total model accounts for 45.67 percent of the within-firm variation in ROA ( $R^2_{within} = 0.4567$ ) and 48.23 percent of the total variation ( $R^2_{overall} = 0.4823$ ), with an F-statistic of 18.45 ( $p = 0.01$ ), which means that the model is significant. These findings imply that corporate factors particularly the size and growth of firms are important determinants of asset profitability, yet other not captured in the model also are likely to be important.

### Model 2: Attributes and Return on Equity (ROE) by the corporate.

Model 2 has a positive but not significant value of the coefficient of the firm size (FSIZE) ( $= 0.167$ ,  $p > 0.10$ ), which may imply that the size of the firm does not have a significant impact on the return on equity when other variables are accounted. Though the positive coefficient suggests that the larger companies are more likely to produce higher returns to the shareholders, the association is not statistically strong in this model. This is contrary to the high positive impact on ROA in Model 1 which suggests that the benefits of size in asset utilization might not necessarily be directly related to the shareholders returns. The agency costs may be higher in larger companies, the ownership may be more dispersed, or the financial policy used may be more conservative and reduce ROE. Also, the capital structure may tie up the association between the size of firms and ROE and leverage may mediate it.

Again, firm growth (FGROW) has a very high level of significance ( $\beta = 0.287$ ,  $p < 0.01$ ) which indicates that the growth of sales is a good contributor to returns to equity holders. One percentage point sales growth is linked to an improvement in ROE of 0.287 percentage point. This finding confirms the premise that growth is a key determinant of shareholder value creation in industrial goods industry. Increased growth does not only enhance operational efficiency as in the case of Model 1, it directly increases returns to equity investors. With the increase in size of firms, they become more profitable, market valuations rise, and they have more chances of reinvesting at good returns. This high positive correlation corresponds to the signaling theory where persistent growth is a good indicator of firms quality and future and it will attract investor confidence and increase the share price.

In the case of firm leverage (FLEV), coefficient is positive and significant in the 10 percent level slightly ( $= 0.142$ ,  $p = 0.10$ ), which means that leverage exerts a positive but slight effect on return on equity. Increasing the debt to assets ratio by one percentage point is connected with the increase in the ROE by 0.142 percentage points. This observation corroborates the financial leverage effect, in which debt can increase returns to equity investors in case the desired return on assets is higher than the cost of debt. Even though the interest rate in Nigeria is very high, then industrial goods companies can enjoy leverage should the operating returns be high enough. The deductibility of the interest expenses to taxes also contributes towards increasing the after-tax returns to the equity holders. Nevertheless, the marginal value implies that the leverage effect is small and might be different in companies. The correlation is not very linear and there is moderate leverage which boosts ROE, and excessive leverage which raises financial risk and decreases returns. Such a position is in line with the trade-off theory that states the firms need to weigh the benefits of debt with the risks that come with it.

The coefficient of firm age (FAGE) is also positive and not significant again ( $0.123$ ,  $p > 0.10$ ) which matches the result in Model 1. The age of the firm does not seem to play an important role in ROE when other variables are put under control. The model accounts 38.92% of the within-firm variance in ROE ( $R^2$  within = 0.3892) and 41.78% of the total variance ( $R^2$  overall = 0.4178), which has an F-statistic of 14.23 ( $p < 0.01$ ), which means that the model is statistically significant. The results with firm growth and leverage as some of the key determinants of the returns to shareholders are also presented though the explanatory strength is not as high as in Model 1.

### Model 3: Corporate Attributes and Earnings per share (EPS).

In the case of Model 3, the coefficient of the firm size (FSIZE) has a positive value, and it is statistically significant at the 5% threshold ( $0.189$ ,  $p = 0.05$ ), indicating that larger firms are more likely to have higher earnings per share. In particular, a one unit shift in the natural logarithm of total assets increases the EPS by 0.189, other things being equal. This finding indicates that the operational benefits of bigger companies like economies of scale and market power in form of increased per-share earnings. The bigger companies are able to make more in total profits and sharing them out among shareholders results in an increase in the EPS. Moreover, it is possible that bigger companies have more

predictable incomes and can access opportunities to grow, which helps to maintain an increase in EPS. This observation is consistent with the signaling theory according to which when EPS is high it indicates firm quality and profitability to the investors, which could as well increase the share prices.

The firm growth (FGROW) coefficient is also positive and significant at 5 percent level ( $0.256, p = 0.05$ ) and thus shows that sales growth improves earnings per share. An increment in growth in sales by a percentage of one leads to a corresponding increment in the EPS by 0.256. This proves that growth strategies are good as they directly help in more profitability per shareholder. Expansion will help companies increase the total earnings and thus, with share capital held constant, will result in increased EPS. This finding supports the significance of growth as a value generating force and indicates that investors must prefer companies possessing high growth opportunities.

In the case of firm leverage (FLEV), the coefficient is positive, although it is statistically insignificant ( $= 0.034, p > 0.10$ ), meaning that leverage does not have a significant impact on EPS in this study. Although leverage may amplify returns, as in the case of Model 2 with ROE, its impact on EPS is less obvious and may have an interaction with the level of debt, interest, and stability of earnings.

The firm age (FAGE) coefficient is significant but the value is insignificant ( $= 0.098, p > 0.10$ ), which has been observed in other models.

Model 3 describes 36.45% of the within-firm variation in EPS ( $R^2_{\text{within}} = 0.3645$ ) and 38.56% of the total variation ( $R^2_{\text{overall}} = 0.3856$ ). The F-statistic is 12.67 ( $p < 0.01$ ), which means that the model is statistically significant. Although this model is the least powerful in explaining the determinants of per-share earnings compared to the other two, firm size and growth are found to be of importance in this model.

## Discussion of Findings

These findings of the study are informative as they are based on the empirical evidence of the factors that have impact on the financial performance in the industry of industrial goods in Nigeria. These results, which are explained in connection with all the corporate attributes analyzed, contribute to the better understanding of how different attributes influence the results of performance. This is supplemented by the available literature that both upholds and contradicts these findings.

The research shows that the firm size positively influences Return on Assets (ROA) and Earnings Per Share (EPS) and does not influence Return on Equity (ROE). This ambivalent trend indicates that the benefit of scale of operations, calculable in assets and average earnings per share, than returns to equityholders is more evident in asset utilization and per share earnings. The association between the positive relationship between firm size and ROA is not new because previous studies have proposed that larger firms have economies of scale, have a stronger bargaining power with suppliers and have easier access to capital markets which helps in enhancing utilization of assets (Ibrahim, 2021). Such benefits are particularly useful in the demanding business environment of Nigeria where bigger companies have a greater capacity to avoid regulatory challenges and gain access to foreign exchange, which results in enhanced profitability (Akpan & Ibrahim, 2022; Adewale and Ogunleye, 2021). Nevertheless, an insignificant relationship between the size of a firm and ROE does not follow the investigations that suggest that a bigger firm produces a better shareholder yield because of operational economies of scale (Ojo & Adeyemi, 2020). This difference can also be explained by agency costs and government problems of large companies where diverse ownership lowers shareholder control and can result in capital inefficiency that constrains ROE. Also, the bigger companies might have more conservative financial policies that inhibit the ability of greater shareholder returns (Nwokedi and Kalu, 2020).

Conceptually, such results partially support the stewardship theory, which implies that the management of larger companies is concerned about operational efficiency. Nevertheless, the fact that there is no meaningful size-ROE correlation shows that stewardship is not necessarily optimal to maximize shareholder value, especially in cases of agency issues or cautionary policies. The results can also be explained by the signaling theory according to which bigger companies communicate to the market that they are a stable and profitable business.

A positive effect on all three performance measures (ROA, ROE, and EPS) is identified to be strong, which proves that growth is one of the most important factors of financial performance. With the expansion, firms would become more efficient in their operations, raise shareholders returns and per share profitability. It coincides with the previous studies that have shown that growth is associated with improved profitability and market valuation, particularly in relation to the industrial sector of Nigeria (Eze and Akintoye, 2021; Ogunyemi and Balogun, 2022). The development in the relationship of growth and performance can be traced to the opportunities that have developed due to influence of infrastructure development, urbanization, and government efforts. Examples of this trend are such firms as Dangote Cement that aggressively entered both local and international markets (Bello and Salami, 2020). This should be well controlled though. The past research warns that the uncontrolled growth like over expansion or over dependence on debt may affect the profitability and financial health adversely (Fakoya and Durojaiye, 2023). These results confirm the cautions of Stewart and Pugh (2022) that untamed expansion, lacking adequate working efficiency, might cause fiscal unsteadiness and low performance.

Both the stewardship theory and the signaling theory are also in line with the results. According to Stewardship theory, growth-oriented managers can maximize performance by being expansion-oriented and signaling theory indicates that a steady growth sends a signal of competitive advantage and future performance to outside parties, which will generate investor confidence and thus reduce the cost of capital.

In terms of leverage, the research has mixed impacts on the financial performance. The leverage has no significant impact on ROA, a slightly positive impact on ROE, and no impact on the EPS. The absence of any strong correlation between leverage and ROA facilitates the notion that the leverage does not have a huge impact on the efficiency of operations (Fakoya and Durojaiye, 2023). The positive, but marginally significant association between leverage and ROE is consistent with the financial theory, which holds that leverage increases yields to equity investors when the returns on the assets are higher than the cost of debt (Adewale and Ogunleye, 2021). Nevertheless, the insignificant value of this correlation implies that the leverage effect is not the same among firms. The result in this study is consistent with trade-off theory, which assumes that companies should trade off the advantages of debt (tax shields and financial discipline) against the risks of bankruptcy.

The conflicting outcome on leverage is also in agreement with the general literature by demonstrating that the correlation between leverage and performance may be situation-specific. In the case of the Nigerian financial market, with high leverage costs and high interest rates, leverage does not have a positive effect on performance, and therefore the relationship between the two variables is weak or non-linear (Ogunyemi & Balogun, 2022). The paper also gives the signaling theory little backing as regards leverage. Leverage in Nigeria where credit markets are distorted with imperfect credit market and high financial distress costs may not be a good signal of firm quality because such risks of financial distress usually dominate the signaling benefits.

Finally, firm age presents positive, but insignificant effects in all models, which may indicate that longevity may not have a direct relationship with excellent performance in situations where other factors such as firm size, growth, and leverage are held constant. This is aligned with the opinion that young firms in dynamic and competitive markets such as Nigeria are more likely to outperform their older and established counterparts due to their innovative strategies

(Chikere and Uzoma, 2022). These results indicate that the present-day strategic positioning and operational efficiency are more significant to performance than the past.

To sum up, this research paper has demonstrated the interplay of corporate factors and financial results as a complex issue in the Nigerian industry goods industry. Each firm size and a growth and leverage have significant implications to the performance but they are subtle and context-specific. The findings reiterate the fact that bringing growth under control is crucial, leverage should be managed, and that it is prudent to take into account the peculiarities of the Nigerian business climate when making strategic choices.

## RECOMMENDATION AND CONCLUSIONS

This paper examined how corporate attributes (firm size, firm growth and firm leverage) were connected to financial performance (ROA, ROE and EPS) of listed industrial goods firms in Nigeria over the period 2013-2022. Through a fixed effects panel regression analysis of a sample of 10 firms having 100 firm-year observations, some major results were obtained:

The firm size has positive impacts of a significant level concerning the return on assets (ROA) and earnings per share (EPS), but not an important impact on the return on equity (ROE). This implies that bigger companies are more efficient in their operations and enjoy higher per-share earnings, however, size benefits do not always result in increased returns to equity holders.

The growth of firms positively affects all three performance indicators (ROA, ROE and EPS) at high statistical significance level. This has been the strongest and stable conclusion of the research and growth is a key driver of financial performance in various dimensions.

The leverage of the firm has both positive and negative impact on financial performance; the leverage is insignificant to ROA, it has a weak positive effect on ROE, and it has no significant effect on EPS. This means that the relationship between leverage and performance is something intricate and situational. Although the leveraging may boost returns to equity holders, the overall effect is low, which potentially is because of the high interest rates and underdeveloped debt markets in Nigeria.

The age of firms has no significant impact on financial performance on the background of other variables, indicating that the past and past performance does not guarantee high performance in dynamic market in Nigeria.

The models explain the variation on financial performance ranging between 36-48 percent meaning that corporate attributes are significant determinants of financial performance but other factors are probable to be major contributors.

The findings and conclusions came to the following recommendations:

- i. The management must be aimed at the attainment of continuous sales increase by increasing the market size, innovation of its products, and increasing capacity. A balance should be maintained between growth strategies, profitability as well as financial sustainability in order to generate long term value.
- ii. Although size is a solution to operational efficiency, strategic growth should be sought by the management to have an optimal scale as opposed to unliminal scale. The areas that should be invested on should be those that produce economies of scale and competitive advantages.

- iii. Due to the low leverage effect and high cost of debt in Nigeria, the management ought to use debt sparingly. Leverage is to be held at the point which yields tax advantages and invests in value-creating projects without raising the risk of financial distress. The debt to assets ratio of 25-35 is acceptable in most of the industrial goods companies.

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