

FIRM CHARACTERISTICS AND PROFITABILITY OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

¹ABDUL Adamu, Ph.D., ²AHMED Abdullahi Ibrahim, Ph.D. ³ABDUL-KHADIR Musa Ismail

^{1&2} Business Admin., Dept., Nasarawa State University, Nasarawa State

³ Business Admin., & Mgt. Dept., Federal Polytechnic, Nasarawa,

Abstract

This study examined the effect of firm characteristics on the profitability of listed industrial goods firms in Nigeria. Specifically, it examined the effect of firm age, firm size, sales growth, and financial leverage on the profitability (return on asset) of listed industrial goods firms in Nigeria. The study used ex-post facto research design. Purposive sampling technique was used to select a total of five (5) listed industrial goods firm from the population of 13. Time series data generated from the financial statements of the five selected firms and the Nigerian Exchange Group Plc. (NGX Group) fact-book for the period 2013 to 2022 (i.e. 10 year period) were used for the analysis. Partial Least Square- Structural Equation Model (PLS-SEM) model was used to test the hypotheses and the findings revealed that; firm size has an insignificant negative effect on profitability of the listed industrial goods firms in Nigeria; sales growth has an insignificant positive effect on profitability of the studied firms; while financial leverage and firm age had a significant positive effect on the profitability of listed industrial goods firms in Nigeria.. It is therefore recommended that; the management of industrial goods firms should; reduce investment in total assets and ensure efficient management of existing assets; continue to enhance their sales channels by consistent marketing strategies; continue to utilize their debt and equity efficiently and effectively; and continue to take advantage of their experience factor by exploring more markets in order to sustain their profitability.

Keywords: Firm size, firm age, financial leverage, sales growth, profitability

INTRODUCTION

The profitability of a firm may be impacted by firm-related characteristics such as the size of the firm which pertains to investment in total assets that leads to increased production capacity (Abiodun, 2017); sales growth which represents a rise in the number of sales from year to year or from time to time; financial leverage which is a measure of dependence on internal (equity) outside (debt) capitals for obtaining assets (Tulsian, 2010); and firm age – i.e. the length of time a company has existed which reveals its cumulative experience and reflects learning or experience (Olumide, 2010); These characteristics can actively influence how much money companies invest, which may directly impact the profitability of the firm.

Extant literature suggests that most listed industrial goods firms in Nigeria largely find it difficult to manage their operations efficiently and effectively. (Falope & Ajilore, 2009; Salawu & Alao, 2014; Abdul-Khadir, 2018). Whether these difficulties were attributable to firm-related characteristics is a question requiring some investigation. Practically, firm characteristics such as firm size, sales growth, financial leverage and firm age could have some perceived effects on the profitability of listed industrial goods firms in Nigeria. This is because those variables directly or indirectly impact the firms' operations; hence their tendency to affect firms' level of profitability. But the extent to which they affect firms' profitability is still not substantiated. The effect of firm characteristics on the profitability of firms in Nigeria has not been fully explored. Despite the numerous studies on the Nigerian business environment, there is lack of comprehensive understanding of how firm characteristics affect profitability in Nigeria. The few empirical studies carried out in Nigeria such as that of Hassan and Adegbite (2021); Lawrence et al. (2021); Ibrahim and Isiaka et al. (2021); Ogunleye et al. (2018) using different methodology and variables within different periods across different sectors to study the effect of firm characteristics on profitability of firms had reported contradictory results. Therefore, there is the need to further investigate the relationship between these firm characteristics and the profitability of firms in Nigeria using different methodology to provide valuable insights to business managers, policymakers, and researchers. Thus, the aim of this study is to examine how firm characteristics affect the profitability of listed industrial goods firms in Nigeria; specifically, the objectives of this study are

to examine the effect of firm size, sales growth, financial leverage and firm age on the profitability of listed industrial goods firms in Nigeria.

This research is divided into five sections: this introduction is the first section, followed by literature review then the methodology of the study, results and discussion of findings, conclusion and recommendations section.

LITERATURE REVIEW

Conceptual Framework

Firm characteristics are those features or enterprise's demographics and managerial variables, which are part of the enterprise's internal environment, and include size, leverage, asset growth, liquidity, sales growth, turnover, and ownership structure, age of the enterprise, dividend payout, board structure, profitability, growth opportunity, and access to capital markets (Kogan & Tian, 2012) and tend to have impact on an enterprise's profitability (Yadenfar, 2013). Mutende et al. (2017) posits that the more a business has control over its firm characteristics, the more capital investment it makes, and hence the greater the profitability.

According to Ramezani and Alan (2010) firm size is the quantity and range of production capacity and ability that a firm possesses or the amount and variety of services that a firm can supply concurrently to its clients. Most firms use total assets, sales income, and the number of workers to determine their size (Abiodun, 2017; Santosa, 2020; Tanova et al., 2019; Wahome et al., 2015).

Juniarti (2014) stated that sales growth is an increase in the number of sales from year to year or from time to time. It is an indicator of the demand and competitiveness of firms in an industry. It is an increase in sales from year to year or from time to time (Hansen & Mowen, 2012). If sales growth is high; it will reflect in increased income so that profits tend to increase. When sales are relatively stable and always increase in a company, it makes it easier for the company to obtain external funds or debt flows to improve its operations (Rakasiwi et al., 2017). The link between sales growth and profitability is thus a crucial concern, and there has been little unanimity on this subject so far.

Firm age is the number of years from the company's establishment or listing (Ilaboya & Ohioka, 2016). It is presumed that firms should deteriorate with time and lose their ability to compete in the market. According to Loderer et al. (2011) if profitability falls as companies' age, it explains why the majority of them are finally taken over. However, aging may actually help companies become more efficient as they learn what they are excellent at and how to execute things better through time. The link between firm age and profitability is debatable.

Das and Swain (2018) described financial leverage as the extent to which firms utilized internal and external funding plan and thus classified financial leverage as short term debts, long term debts, and equity ratio. Short-term debt financing has a one-year or shorter maturity period and should be repaid within four months and offers low interest rates (Yazdanfar & Öhman, 2015). Short-term borrowing, according to Mian and Santos (2018) assist to handle the immediate issue of funding without long-term obligation; while long-term debt is an arrangement between the company and loan issuers that is typically connected with significant agency and financial distress expenses (Chavali & Rosario, 2018). Significant amounts of long-term debt in the company are not conducive to successful operations since they raise the danger of bankruptcy and the interest connected with them is high.

On the other hand, equity ratio is a better measure of the degree of leverage employed by the firm. A high equity ratio is negative for the firm, but a low equity ratio is good for the shareholders as long as the company generates a defined rate of return on assets that is higher than the interest rates given to creditors (Chadha & Sharma, 2015). Equity financing is the least preferred financing source for a company and is only utilized when debt capacity has reached its maximum and the firm lacks an alternative means to finance its activities.

Profitability is defined as the achievement of the firm's financial goals for a certain period covering the collection and allocation of finance (Fatihudin et al., 2018). It covers the firm's ability to manage and control resources at its disposal and indicates how well a firm is utilizing its resources to maximize the shareholder's wealth. According to Baba and Nasieku (2016) profitability demonstrates how a firm uses assets to generate income, and hence it guides stakeholders in their decision-making. Profitability can be assessed through the analysis of firm's financial statements using metrics such as return on asset (ROA), return on equity (ROE), return on investment (ROI) etc.

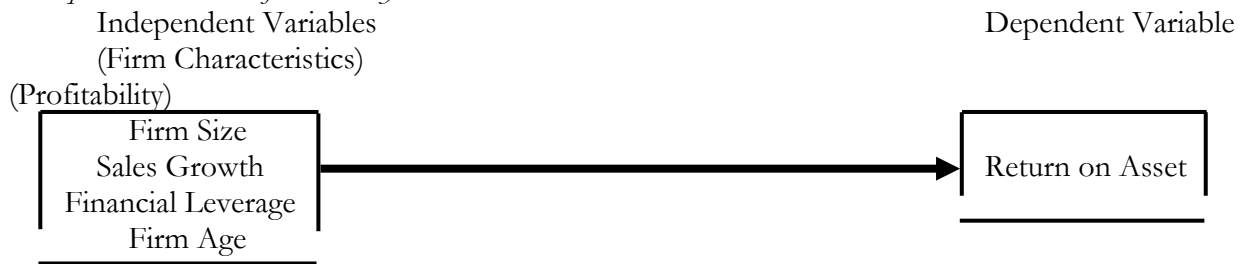
ROA is a measure of the firm's effectiveness in managing wealth (assets) owned by the company, therefore raising the ROA ratio reflects the company's performance in managing assets held, so that profits or earnings may be generated (Elali et al., 2013). ROA was considered the most important measure of profitability in this study. Hence, return on assets was included in the analysis of this study. Kabajeh et al. (2012) used the following formula to define ROA:

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Total Asset (for the past 12 months)}}$$

Figure 1 below presents the conceptual framework for this study which forms the base for conducting this research. It is the integration set of the research concepts and variables together with their logical relationships. The logical relationship among this study's dependent, mediating and independent variables are presented in the diagram below:

Figure 1:

Conceptual Framework for the study



The figure above shows the conceptual framework of this study. In this study; the relationship between the independent variable (firm characteristics such as firm size, sales growth, financial leverage and firm age) and the dependent variable (profitability i.e. return on asset) of the sampled firms shall be evaluated to establish the nature of the relationship.

Empirical Review

Widhiastuti (2021) assessed the effect of firm size (using total sales, total assets and the average level of sales as proxies) on profitability of listed Indonesian real estate companies during the period 2016-2019. Using Partial Least Square (SEM-PLS) -Structural Equation Model as the analytical tool, it was discovered that firm size had significant positive effect on profitability of the studied firms. Zahaghi et al. (2019) using multivariate regression found a significant negative effect of firm size on profitability of 142 listed Iranian firms during 2008-2017 periods. Likewise, Ssendagire (2018) utilizing the Pearson correlation analysis revealed that there exists positive significant effect of firm size (taken as size log of total asset) on profitability (return on assets) of 169 Ugandan manufacturing firms within the period 2011 to 2015.

On effect of firm age on profitability, using pooled ordinary least squares analysis, Ibrahim and Isiaka (2021) reported that firm age had a significant positive effect on profitability of 71 selected Nigeria non-financial firms between the period 2014 and 2018. Also, Nyamiobo et al. (2018) employed multiple regression analysis to report that firm age contributed positively and significantly on financial performance of selected listed firms on the Nairobi Security Exchange (NSE). But, in Oman, Haykir and Celik (2018) investigated the association between firm age and performance of family owned non-financial firms traded on Borsa Istanbul during the period between 2008 and 2016. Using, correlation and regression analysis, they reported a

significant negative effect of firm age on financial performance of the studied firms. But Selcuk (2016) using robust standard error estimates established a negative significant effect of firm age on the profitability of 302 listed Turkish firms between 2005 to 2014-year periods.

On the effect of sales growth on profitability, Iskandar (2021) using multiple regression analysis found significant negative effect of sales growth on firm value of 13 Indonesian consumer goods manufacturing firms listed on the Indonesian Stock Exchange (IDX) between 2016 and 2018. But in Nigeria, Ogunleye et al. (2018) applied panel data estimation technique to report an insignificant positive effect of sales growth on the profitability of quoted manufacturing companies in Nigeria from 2007 to 2011 periods. Also, Odalo et al. (2016) utilizing panel regression analysis found a significant positive relationship between sales growth and profitability of 220 listed agricultural companies at Nairobi Security Exchange (NSE) in Kenya from 2003 to 2013.

To establish the effect of financial leverage on profitability, Hassan and Adegbite (2021) using ordinary least squares regression method reported that financial leverage (debt ratio and equity ratio) had significant positive effect on the financial stability (cash flow, return on equity return on asset and liquidity) of 13 listed manufacturing companies in Nigeria. Also, Lawrence et al. (2021) using ordinary least squares analysis established that financial leverage (total debt - equity ratio) has insignificant positive effect on financial performance (return on assets) of 10 selected listed manufacturing firms in Nigeria between 2009 and 2019. In Kenya, Gathera et al. (2019) used multiple regression analysis to report a significant positive effect of financial leverage on financial performance of 30 selected Kenyan companies during the period 2007 through 2015. In China, Mahmood et al. (2019) after using Generalized Methods of Moments (GMM) technique on panel data collected from the financial records of selected Chinese companies during 2000-2017, found out that financial leverage had a significant positive influence on the profitability of the sampled firms.

While these studies provide some insights into the relationship between firm characteristics and profitability, their limitations and differences in methodology make it difficult to draw definitive conclusions. Further research is needed to better understand this relationship, especially across different industries and countries.

Theoretical Framework

Theoretically, this study is underpinned by technological theory, growth theory, pecking- order theory and experiential learning theory:

Technological Theory

Lucas (1978) propounded the technological theory in his thesis on the fundamentals of the production function. In his hypothesis, he asserts that the size of the firm is determined by its market's size which determines its production function. According to Lucas (1978) the production function is based on the neoclassical theory on the distribution of the firm size. The theorist posited that when a firm is able to expand its market base through its operations and distributive capacity, it accumulates more benefits (profits) to itself. This theory was adopted in this study to underpin the relationship between firm size and profitability because the study assumes that, investment in total assets, may lead to larger market which allows the firm to expand its operations and reach more customers, leading to increased production and sales. This expansion is assumed to positively impact profitability by generating higher revenue streams.

Penrose's Growth theory

Penrose (1959) was at the forefront of this theory. The theory revolves around three stages of growth: - from infancy stage (when an idea is conceived and the business just begins with search for markets for products (i.e. for sales) are developed; through expansion stage (where the firm struggles to increase its share in the market by increasing its sales); up to professionalization stage (i.e. the desire to formalize the operations of the organization. This theory was adopted in this study to underpin the hypothetical effect of

sales growth on profitability because the study presumed that if a firm wishes to achieve growth and make profit, it can adopt good sales practices by expanding their market; thereby achieving sales maximization objective which may increase the firm's profitability.

Pecking - Order Theory

Pecking order theory was first propounded by Donaldson (1961) and modified by Myers and Majluf (1984). The theory assumes that companies prioritize their sources of financing (from internal to equity financing) according to the cost of financing, preferring to raise equity as a financing means of last resort. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued. The theory posits that firms would rather focus on internal sources of financing before resorting to external investors. Financing by internal funds should be encouraged as opposed to financing by external funds, according to the following hierarchy: cash flow/debt/issue of shares' (Myers & Majluf, 1984). The use of these financial resources is assumed to have significant effect on the firms' profitability. The pecking order theory was adopted in this study to underpin the hypothetical effect of financial leverage on profitability since the study assumed that effective use of debt/equity could lead to profitability of the studied firms.

Experiential Learning Theory

Experiential learning theory was propounded by Dewey (1938) but Arrow (1962) was the proponent of experiential learning theory in management. The theory hypothesized that firms are exposed to new experiences as they continue to do their business operations which presents them opportunity for growth and profitability. According to Arrow (1962) when the firm aged (i.e. as it grows older) doing/ acting, it is presumed to be learning; the more enhanced they are in their line of business. The experiential learning theory proposed by Arrow (1962) in management suggests that the age of a firm can have a significant impact on its performance. The theory is adopted in this study to underpin the relationship between firm age and profitability based on the assumption that as a firm continues to operate and accumulate experience, it can become more efficient, effective, and profitable.

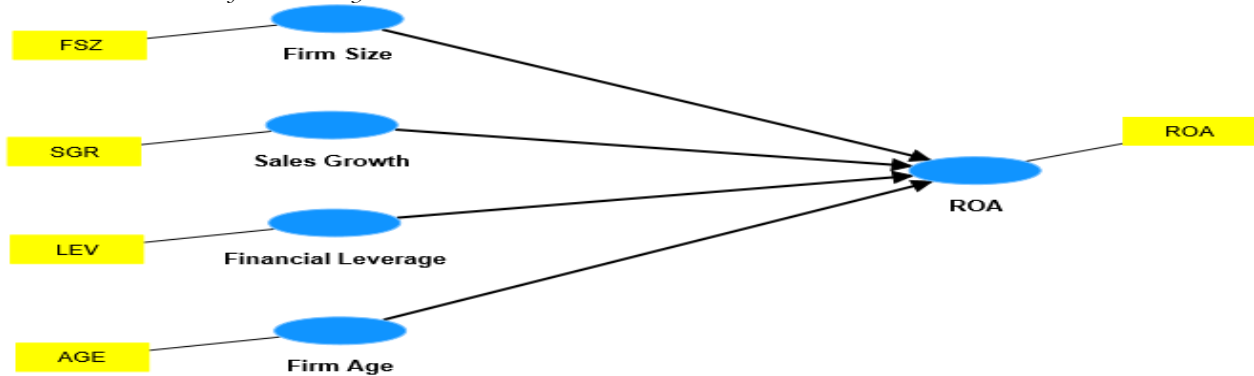
METHODOLOGY

This study used ex-post facto research design. The research design was regarded suitable design for this study because the existing data on firm characteristics (proxy by firm size, sales growth, financial leverage, firm age) and profitability (proxy by return on asset) were not subject to the researcher's manipulations since they are already in existence. The population of the study is the thirteen (13) listed industrial goods firms on the Nigerian Exchange Group Plc. (NGX Group) as at December, 2022. Purposive sampling technique was used to select the firms considered in this study based on the criteria that; the firm must remain listed on the Nigerian Exchange Group Plc. (NGX Group) during the 2013 – 2022 periods; and that the firm must have complete financial statements with data on the research selected variables for the period under review. Based on this criterion, a total of five (5) listed industrial goods firms (i.e. Berger Paints Plc., Dangote Cement Plc., Lafarge Africa Plc., Portland Paints & Products Nig. Plc., and Beta Glass Plc.) were selected for the study. The study utilized secondary data which consists of both time series and cross-sectional data (expressed using ratios to enhance the analysis) which were generated from the financial statements of the five selected listed industrial goods firms and the Nigerian Exchange Group Plc. (NGX Group) fact- book for the period 2013 to 2022 (i.e. 10 year period).

To analyze the effect of firm characteristics on profitability, Partial Least Square- Structural Equation Model (PLS-SEM) model was developed. The PLS-SEM model is developed using diagrams and not mathematical model (Hair, et al., (2018). The model is presented in figure 2 below:

Figure 2:

PLS – SEM Model for the Study



The variables for this study are divided into dependent and independent variables. Their measurements are as shown in table 1 below:

Table 1:

Measurements of Variables

Type of Variables	Indicators	Measurements	Sources
Dependent Variables	Profitability		
	Return on Asset (ROA)	Net Profit after Tax / Total Assets	Kabajeh et al. (2018)
Independent Variables	Firm Characteristics		
	Firm Size (FSZ)	Natural (Ln) of Total Assets	Kawakibi & Hadiwidjoja (2019)
	Sales Growth (SGR)	$Sale_t - Sale_{t-1} / Sale_{t-1}$	Iskandar (2021)
	Financial Leverage (LEV)	Total Debt to Equity Ratio	Lawrence et al.(2021)
	Firm Age (FA)	Natural (Ln) of Age	Haykir & Celik (2018)

Source: Researcher's Computations (2022)

RESULTS AND DISCUSSIONS

Descriptive Statistics

Table 2 presents the descriptive statistics of the entire variables (i.e. return on asset, firm size, sales growth, financial leverage and firm age as represented by ROA, FSZ, SGR, LEV and FA respectively) for the five (5) industrial goods firms for the period 2013-2022.

Table 2:

Descriptive Statistics

Variables	Mean	Median	Minimum	Maximum	Standard Dev.
ROA	0.281	0.281	0.008	0.596	0.178
FSZ	22.34	22.235	0.019	36.75	5.592
SGR	0.371	0.115	-0.99	8.395	1.446
LEV	0.459	0.387	0.041	1.782	0.244
AGE	40.74	37	19	60	12.882

Source: Smart PLS Result (2023)

It has been observed that there exist no missing values on the datasets for all the variables that have been used for this analysis. This connotes that the data is accurate for meaningful analysis and inference. The

mean and median of ROA are very close, indicating a relatively symmetrical distribution. The average return on assets is 0.281, which suggests that, on average, the companies generate a return of 28.1% on their assets. The standard deviation from the mean was 0.178 which means the ROA is stable for the period under review. The minimum value of ROA was 0.008 while the maximum was 0.596 which means there were some firms that do realized very low profitability in the industry.

The mean value for firm size (FSZ) was 22.34 while the median value was 22.235 suggesting the absence of outliers in the dataset. The standard deviation of 5.592 indicates a moderate level of variability in the firm size values. The minimum value of FSZ was 0.019 while the maximum was 36.79 which mean that some firms are relatively small in size compared to most of the studied firms.

The mean sales growth rate is 0.371, indicating positive average growth. However, the median is significantly lower at 0.115, suggesting a distribution that is skewed towards lower growth rates. The negative minimum value (-0.99) indicates that there are observations with negative growth rates. The maximum growth rate observed is 8.395. The standard deviation of 1.446 indicates a moderate level of variability in the sales growth rate values.

For financial leverage (LEV), the mean and median of financial leverage are relatively close, indicating a relatively symmetrical distribution. The average leverage is 0.459, suggesting that, on average, the firms have a moderate level of leverage. The standard deviation from the mean was 0.244 indicating some level of consistency in dataset. The minimum value of LEV was 0.041 while the maximum value was 1.782. This means that some firms in that most of the listed industrial goods firms employed the use of debt/equity in financing their operations.

The mean value for firm age (AGE) was 40.74 with a median value of 37 also signifying the absence of outliers. The standard deviation from the mean was 12.882 which prove consistency in data sets. The minimum value of AGE was 19 while the maximum value was 60 which indicates that some firms included in the analysis are relatively new in the industry while others have longer years of operations in the industry.

Table 3:

Collinearity Test

Variables	VIF
FSZ	1.455
SGR	1.012
LEV	1.132
AGE	1.427

Source: Smart PLS Result (2023)

Table 3 presents the Variance Inflation Factor (VIF) to detect co linearity issues. The Variance Inflation Factor (VIF) was used to evaluate co linearity of the formative indicators. VIF values of 5 or above indicate critical co linearity issues among indicators of formatively measured construct (Hair et al., 2018). From the analysis carried out, all the VIF values for all the indicator variables – firm size (FSZ), sales growth (SGR), financial leverage (LEV), and firm age (AGE) are less than the threshold of co linearity issue. This means that there is no issue of co linearity among the variables suggesting the absence of overlapping variables.

Table 4:

Model Fit

	Estimated Model
SRMR	0.000
d_ ULS	0.000
d_ G	0.900
Chi-square	0.000

NFI 1.000

Source: Smart PLS Result (2023)

Henseler et al (2012) introduced the Structural Root Mean Square Residual (SRMR) as a goodness of fit measure for PLS-SEM that can be used to avoid model misspecification and posited that for a model to be fit for analysis, the SRMR value should be less than 0.8. Table 4 presents the model fit. As can be seen, the SRMR value (0.000) is quite less than the threshold; so we can conclude that the model used in this study is fit for the analysis. Also, the Normed Fit Index (NFI) value was introduced by Bentler and Bonett (1980) to measure PLS path model fit used in analysis. According to them, the NFI represents an incremental fit measure and a value closer to 1 indicates an acceptable fit. From the analysis performed, the NFI (1.000) means that the model is fit for the analysis.

Table 5:

Predictive Relevance of the Model

	R²	Q²predict	Sig
ROA	0.557	0.46	0.000

Source: Smart PLS Result (2023)

Table 5 above presents the R² and Q² values of the model. R² and Q² are standard assessment criteria in PLS-SEM which include the coefficient of determination (R²) and the blindfolding based cross validated redundancy measure Q². The R² measures the variance which is explained in each endogenous construct and is therefore a measure of the model's explanatory power (Shmueli & Koppius, 2011). As a guideline, R² values of 0.75, 0.50 and 0.25 can be considered substantial, moderate and weak (Henseler et al., 2012; Hair et al., 2018). Hence, from the analysis presented in the table above, the R² value of 0.557 indicates that proxy for firm characteristics (i.e. firm size, sales growth, financial leverage and firm age) predict 55.7% of the variation in the profitability (ROA) of listed industrial goods firms in Nigeria. Another means adopted to assess the path model predictive power or accuracy is the Q². As a rule of thumb, Q² values higher than 0.25 and 0.50, 75 depict small, medium and large predictive relevance of the PLS path model (Hair et al., 2018). From the analysis, the Q² (0.46%) indicates that the model has moderate predictive accuracy in explaining changes in profitability (ROA) due to effect of firm characteristics.

Finally, the significance level (Sig) is a measure of the probability that the relationship between the independent variable(s) and the dependent variable (ROA) is due to chance. In the given analysis, the Sig value for ROA is 0.000, which means that the relationship between the independent variable(s) and ROA is statistically significant at a 0.05 significance level. This means that we can be confident that the relationship between the independent variable(s) and ROA is not due to chance.

Table 6:

Test of Hypotheses

Hypotheses		Beta Coefficient	T statistics	P values
Firm Size ->	ROA	-0.033	0.295	0.768
Sales Growth ->	ROA	0.09	1.139	0.255
Financial Leverage ->	ROA	0.278	2.776	0.006
Firm Age ->	ROA	0.4	4.454	0

Source: Smart PLS Result (2023)

Table 6 above presents the evaluation of structural path coefficients (i.e. the relationships amongst the study constructs) and their statistical significance.

H₁ evaluates the effect of firm size (FSZ) on profitability (ROA) of listed industrial goods firms in Nigeria. The results revealed that FSZ has an insignificant negative ($\beta = -0.033$, P-value = 0.768) effect on profitability of the studied firms. The result is inconsistent with Widhiastuti (2021); Zahaghi et al. (2021);

and that of Ssendagire (2018). This finding does not concur with the views of the technological theory since in this case the size or market base of the firms had negative effect on the firms' profitability.

H₂ evaluates the effect of sales growth (SGR) on profitability (ROA) of listed industrial goods firms in Nigeria. The results revealed that sales growth has an insignificant positive effect ($\beta = 0.09$, P-value = 0.255) on profitability of the studied firms. The finding is consistent with that of Ogunleye et al. (2018); Odalo et al. (2016). The study conforms to Penrose firm's growth theory because in this situation, the firms adopted good sales practices by expanding their market; thereby achieving sales maximization objective values which had positive effect on their profitability.

H₃ evaluates the effect of financial leverage (LEV) on profitability of listed industrial goods firms in Nigeria. The results revealed that financial leverage has a significant positive effect ($\beta = 0.278$, P-value = 0.006) on profitability of the studied firms. This result is similar to the findings of Hassan and Adegbite (2021); Lawrence (2021); Gather (2019). It align with the assertion of the Perking -order theory because within this study's period, the use of these debt and equity as sources of funds by the firms' seen to have significant positive effect on the firms' profitability.

H₄ evaluates the effect of firm age (AGE) on profitability of listed industrial goods firms in Nigeria. The results revealed that firm age has a significant positive effect ($\beta = 0.4$, P-value = 0.001) on profitability of the studied firms. This finding is in line with that of Ibrahim and Isiaka (2021); but different from that of Iskandar (2021); Haykir and Celik (2018). The result conforms to the postulations of Dewey's (1938) experiential learning theory because it indicates that the experience gained from their mode of operations led to profitability.

CONCLUSION AND RECOMMENDATIONS

From the analysis conducted thus far, it can be concluded that: firm size, sales growth, financial leverage and firm age have some significant and insignificant effect on the profitability (ROA) of listed industrial goods firms in Nigeria. Based on the results obtained, it is recommended that, the management of listed industrial goods firms:

- i. Should reduce their investment in total assets and ensure efficient management of existing assets
- ii. Should continue to enhance their sales channels by consistent marketing strategies (e.g. increasing purchase frequency, focusing on existing customers etc);
- iii. Should continue to utilize their debt and equity efficiently and effectively; and
- iv. Should continue to take advantage of their age factor (i.e. years of experience) by exploring more markets in order to sustain their profitability.

References

- Abdul-Khadir, M.I, Abdul, A, &Aliyu, S. (2018). Effect of working capital management on financial performance of quoted conglomerate firms in Nigeria. *AE-FUNAI Journal of Accounting, Business and Finance*, ISSN: 2635-392X. www.fujaf.org.
- Abiodun, B. Y. (2017). The effect of firm size on firms profitability of commercial banks in Nigeria. *Journal of Economics and Sustainable Development* 4 (5) 102 -126
- Anton, S.G.,&Nocu, A.E. (2021). The impact of working capital management on firm profitability: Empirical evidence from Polish listed firms. *Journal of Risk and Financial Management*. 14(9), <http://dx.doi.org/10.3390/srfm14010009>.
- Arrow, K.J. (1962). The economic implications of learning by doing. *Review of Economic Studies*. Retrieved from: academic.oup.com
- Baba, S., & Nasieku, T. (2016) Effect of macroeconomic factors on financial performance of commercial banks in Nigeria. *International Journal of Social Sciences and Information Technology*, 11 (IX).
- Bentler, P.M. and Bonnet, D.C. (1980). Significance Tests and Goodness of Fit in the Analysis of Covariance Structures, *Psychological Bulletin*, 88 (3), pp. 588-606.

- Chadha, S., & Sharma, A. K. (2015). Capital structure and firm performance: Empirical evidence from India. *vision: The Journal of Business Perspective*, 19(4), 295–302.
- Chavali, K., & Rosario, S. (2018). Relationship between capital structure and profitability: A study of non-banking finance companies in India. *Academy of Accounting and Financial Studies Journal*, 22(1), 1-8.
- Das, C. P., & Swain, R. K. (2018). Influence of Capital Structure on Financial Performance. *Parikalpana-KIIT Journal of Management*, 14(1), 161-170.
- Dewey, J. (1938). Experience and education. New York: Simon and Schuster. Retrieved from: <https://www.tandfonline.com/doi/abs/10.1080/13561820.2016.1233390>
- Donaldson, G. (1961). Corporate Debt Capacity: A study of corporate Debt Policy and the Determination of Corporate Debt Capacity. Washington, D.C: Beard Books, 2000.
- Elali, W., Gitman, L., Zutter, C., & Roubaie, A. (2013). Principles of managerial finance, Pearson Publishers.
- Falope, O., & Ajilore, O. (2009). Working Capital Management and Corporate Profitability: Evidence from Panel Data Analysis of Selected Quoted Companies in Nigeria. *Research Journal of Business Management*, 3(3), 73-84.
- Fatihudin, D., & Mochklas, M. (2018). How measuring financial performance. *International Journal of Civil Engineering and Technology*, 9(6).
- Gathera, Z.M., Kilika, J.M., & Maingi, J.N. (2019). Effect of leverage on financial performance of selected companies listed in the Nairobi Securities Exchange, Kenya. *International Journal of Innovative Finance and Economic Research*.
- Hair, J. F., Jr.; Hult, G., Tomas, M., Ringle, C. M.; & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling (PLS- SEM). Thousand Oaks, CA: Sage Publications.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2018). [A primer on partial least squares structural equation modeling \(PLS-SEM\)](#), 3rd Ed., Sage: Thousand Oaks.
- Hansen, R., & Mowen, M. (2012). Management Accounting (7th). Singapore.
- Hassan, O., & Adegbite, F.F. (2021). Financial leverage and financial stability of quoted manufacturing companies in Nigeria. *International Journal of Scientific and Research Publications*, 11 (1)
- Haykir, O., & Celik, M.S. (2018). The effect of age on firm's performance: Evidence from family-owned companies. *Omer Halisdemir Universitesi iktisadi ve idari Bilimler Fakultesi Dergisi*, Vol. (11), 2, pp. 129-137.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2012). [Using partial least squares path modeling in international advertising research: Basic concepts and recent issues](#), in handbook of research in international advertising, Edward Elgar Publishing: Cheltenham, pp. 252-276.
- Ibrahim, U.A., Isiaka, A. (2021). Working capital management and financial performance of non-financial quoted companies. *International Journal of Research in Business and Social Sciences*, 10 (3).
- Ilaboya, O.J., & Ohiokha, I.F. (2016). Firm age, size and performance dynamics: A test of learning by doing and structural inertia hypothesis. *Business and Management Research Journal*, 5(1).
- Iskandar, D., Buana, M. (2021). The effect of profitability and sales growth on company value moderated by leverage in Indonesia. *International Journal of Management Studies and Social Science Research*, 3 (5) 32. www.ijmsssr.org
- Jensen, M. C., & Meckling, W. H. (1984). Theory of the firm: Managerial behavior. Agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Juniarti, A. T., & Sukartini, T. (2014, December 14). Analisis Kompetensi Lulusan melalui Kinerja Guru di SMPN Wilayah III Cirebon. *TRIKONOMIKA*, 13(2), 145. <https://doi.org/10.23969/trikonomika.v13i2.610>
- Kabajeh, M. A., AL Nu'aimat, F. D., & Ahmed, S.M. (2012). The relationship between the ROA, ROE and ROI ratios with Jordanian Insurance Public Companies Market Share Prices, *International Journal of Humanities and Social Science*, (2)11.
- Lawrence, I., David, A., & Olubukola, F. (2021). Effect of financial leverage on financial performance: A comparative study of deposit money banks and manufacturing companies in Nigeria, *UNILAG Global Journal of Accounting*, 7 (1).

- Loderer, C., & Waelchli, U., (2011). Firm age and performance. Unpublished manuscript, MPRA Paper 26450, University Library of Munich- Germany.
- Lucas, H. C. 1978. Empirical evidence for a model of implementation. *MIS Quarterly* 2 (2), 27 - 42.
- Mahmud, F., Han, D., Ali, N., Muben, R., & Shahzad, U. (2019). Moderating effect of firm size and leverage on the working capital finance-profitability relationship: Evidence from China, *MDPI Sustainability Journal*.
- Mutende, E.A., Mwangi, M., & Ochieng, D.E. (2017). The moderating role of firm characteristics on the relationship between free cash flows and financial performance of firms listed at the Nairobi Securities and Exchange. *Journal of Finance and Investment Analysis*, 6(4), 35-74, scienpress.com
- Mian, Atif & Santos, João A.C., (2018). [Liquidity risk and maturity management over the credit cycle](#). *Journal of Financial Economics*, Elsevier, 127 (2), pp. 264-284.
- Nyamiobo, J.K., Muturi, W., Okibo, W.B., Olweny, T. (2018). Effects of firm characteristics on financial performance of listed firms in Nairobi Security Exchange. *International Journal of Business and Law Research*, 6 (4), www.seahiaji.org.
- Odalo, S.K., Njuguna, A., & Achoki, G. (2018). Relating sales growth and financial performance in Agricultural firms listed in the Nairobi Securities Exchange in Kenya. *International Journal of Economics, Commerce and Management*, IV (7)
- Olumide, C.A. (2010). The relationship between firm experience and growth in the Nigeria food, beverages and tobacco industry, Unpublished PhD Dissertation, University of Illorin.
- Ogunleye, E.O., Adeyemi, P.A., & Asamu, G.T. (2018). The size, growth and profitability of quoted manufacturing companies in Nigeria: Panel data analysis. *Journal of Poverty, Investment and Development*, Vol. 45
- Penrose, T. (1959). The theory of the growth of the firm, Oxford: Blackwell
- Pervan, M., Pervan, T., Curak, M. (2017). The influence of age on firm performance: Evidence from the Croatian food industry. *Journal of Eastern Europe Research in Business and Economics*. Vol. 2017(2017).
- Ramezani, A., & Alan, J. (2010) Profitability, corporate profitability, and value creation, *Financial Analysts Journal*, 58 (6):56
- Rakasiwi, F.W., Pranaditya, A., & Andini, R. (2017). The influence of EPS, company size, profitability, leverage, sales growth and dividend policy on company value in the food and beverage industry listed on the Indonesia Stock Exchange in 2010-2015. *Journal of Accounting*, 3(3).
- Salawu, R.O., & Alao, J.A. (2014). Working Capital Management and the Performance of Selected Quoted Manufacturing Companies in Nigeria (2000-2009). *Research Journal of Finance and Accounting*, Vol. 5, No. 14.
- Santosa, P. W., Aprilia, O., Tambunan, M. E. (2020). The Intervening Effect of the Dividend Policy on Financial Performance and Firm Value in Large Indonesian Firms. *International Journal of Financial Research*, 11 (4). pp. 408.
- Selcuk, E.A. (2016). Does firm age affect profitability? Evidence from Turkey. *International Journal of Economics Sciences*. Vol.3, pp. 1-9.
- Shmueli, G., & Koppius, O.R. (2011). Predictive analytics in information systems research. *MIS Quarterly*, (35), 553-572.
- Ssendengire, D.L. (2018). Working capital level, working capital financing approaches, firm size and profitability of manufacturing firms in Uganda. Doctoral Thesis: University of Nairobi
- Tanova, C., Dalci, I., Ozyapici, H., Bein, M. A. (2019). [The moderating impact of firm size on the relationship between working capital management and profitability](#). *Prague Economic Papers*, Prague University of Economics and Business. 2019 (3), pp. 296-312.
- Wahome, M. N., Memba, F. & Muturi, W. (2015). The effects of firm size and risk on capital structure decisions of insurance industry in Kenya. *International Journal of Scientific and Research Publications*, 5(8), 1-12.
- Widhiastuti, S. (2021). The Effect of Company Size as a Mediating Variable on the Relationship of Working Capital to Profitability. *Journal of Hunan University of Natural Sciences*, 48 (6)

- Yazdanfar, D., & Öhman, P. (2015). The impact of cash conversion cycle on firm profitability: An empirical study based on Swedish data. *International Journal of Managerial Finance*, 10(4), 442–452.
- Zahaghi, H., Godini, M., Mansouri, K. (2019). The moderating role of firms characteristics on the relationship between working capital management and financial performance. *Advanced Researches in Mathematical finances and Applications*, 4 (1), pp. 71 – 88.