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Impact of firm size, firm age on the profitability of listed consumer goods firms in Nigeria

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Abstract
Purpose: Tax compliance is one of the significant factors militating against sustainable revenue mobilization in developing economies, including the Nigerian economy. This work therefore evaluates the impact of tax audit in improving tax compliance in Ogun State, taking a critical focus at the frequency, penalty, effectiveness, and moderating effect of taxpayer education.
Methodology: The study adopts a quantitative cross-sectional research design. Primary data was collected through structured questionnaires administered to officials of the Ogun State Internal Revenue Service and professional accountants of selected small and medium-sized enterprises. A stratified random sampling technique was used; 331 valid responses were retrieved. Data was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS to test both direct and moderating relationships among the variables.
Results and conclusion: Results reveal that tax audits greatly improve tax compliance in Ogun State. Frequency of tax audit is identified as the most significant predictor of tax compliance, followed by effectiveness and penalty of tax audit. However, it was found that taxpayer education positively affects tax compliance and also Moderates tax audit effectiveness & tax compliance. It can be concluded that the role of effective and regular taxation audits, in conjunction with sufficient taxpayer education, is imperative in ensuring and improving the levels of voluntary taxation compliance.
Implication of findings: The findings suggest that the Nigeria taxation system can benefit from enhancing the capacity for taxation audits and increasing the focus and activities on taxpayer education as approaches for improving the levels of voluntary taxation compliance.

Keywords: Age, Size, Asset, Equity, Nigeria.

1. Introduction

The failure of a firm to be profitable can have significant effects on various aspects of its operations and overall sustainability. Without profitability, a firm may struggle to meet its financial obligations, such as paying suppliers, employees, and lenders. A firm's failure to be profitable can damage its market reputation and erode investor confidence. A firm that consistently fails to generate profits may find it challenging to secure loans, issue bonds, or attract equity investments. A firm's failure to be profitable limits its ability to invest in research and development, marketing, and distribution channels. Lack of profitability can restrict a firm's ability to invest in marketing campaigns, product development, or customer service enhancements. Suppliers may experience delayed payments or reduced orders, while creditors may face challenges in recovering outstanding debts. The importance of firm profitability for listed consumer goods firms in Nigeria cannot be overstated. Profitability serves as a key indicator of a firm's financial health, performance, and sustainability. Profitability is essential for ensuring the financial stability of consumer goods firms. It provides the necessary resources to meet operational expenses, invest in research and development, expand production capacity, and fund future growth initiatives. Profitable firms are better equipped to weather economic downturns, industry disruptions, and other unforeseen challenges. As listed firms, consumer goods companies have a responsibility to generate returns for their shareholders. Higher profitability translates into increased earnings per share, dividends, and capital appreciation, which attract investors and enhance shareholder confidence. It allows firms to invest in product innovation, marketing, and brand building, which can differentiate them from competitors (Monoarfa, 2018). Higher profitability enables companies to offer competitive pricing, improve product quality, and provide superior customer service, thereby attracting and retaining customers in a highly competitive market. Profitable consumer goods firms have higher creditworthiness and are perceived as lower-risk investments, making it easier for them to secure loans, issue bonds, or attract equity investments for funding expansion or strategic initiatives. Higher profitability enables consumer goods firms to attract and retain top talent, fostering a skilled and motivated workforce.

Return on assets (ROA) and return on equity (ROE) are widely used financial ratios that provide valuable insights into a firm's profitability (kharatyan et al, 2016) Return on Assets (ROA), measures a firm's profitability by evaluating the earnings generated in relation to its total assets. It is calculated by dividing net income by average total assets. ROA reflects how effectively a firm utilizes its assets to generate profits. A higher ROA indicates that the firm generates more income per unit of assets employed. ROA enables meaningful comparisons of profitability across different firms, industries, or time periods (Singh et al, (2024).

ROE indicates the profitability generated for shareholders' investment. It measures the return on the capital invested by shareholders and reflects how effectively the firm generates profits from equity. ROE considers the proportion of debt and equity in a firm's capital structure. It highlights how effectively the firm manages its financial leverage to enhance profitability. ROE influences a firm's growth potential by determining its capacity to reinvest profits for expansion. Higher ROE allows a firm to retain more earnings and reinvest in new projects, acquisitions, or research and development. ROE is a crucial metric for investors when evaluating the financial performance and stability of a firm.

Firm size and firm age can significantly impact a firm's profitability Dan (2021). Larger firms benefit from economies of scale, lower costs per unit, greater market power, and improved access to financial resources. They can generate higher revenues, negotiate favorable contracts, and diversify their operations, leading to increased profitability. Older firms have accumulated market knowledge, brand reputation, and access to networks and resources. This enables them to understand customer needs, command premium prices, and reduce costs, positively impacting profitability. However, profitability is also influenced by industry dynamics, market conditions, managerial capabilities, and competitive forces. Firm size and age are not guarantees of profitability, and exceptions exist. It is crucial to consider these factors alongside other variables when assessing a firm's profitability.

In the context of Nigerian listed consumer goods firms, both older and larger firms face challenges in maintaining profitability due to intense competition. New and smaller firms struggle to establish themselves, while larger firms face difficulties sustaining their market dominance Oshim, & Igwe (2024). The market dynamics in Nigeria, including changing consumer preferences, economic conditions, and regulatory environments, pose challenges for both older and larger firms in adapting quickly (Barango et al 2024).

2. Literature review

Younis and Sundarakani (2020) conducted a study titled the impact of firm size, firm age and environmental management certification on the relationship between green supply chain practices and corporate performance in the United Arab Emirates to investigate the moderating effects of firm size, firm age, and environmental management certification on the link between green supply chain practices and corporate performance. The dependent variable, corporate performance, was measured across environmental, operational, and financial dimensions using a perceptual five-point Likert scale. The independent variables—green supply chain practices (including green purchasing, green transportation, green manufacturing, internal environmental management, and reverse logistics)—as well as the moderating variables (firm size measured by number of employees and firm age measured by years since establishment) were also measured using perceptual data. The study sampled 209 manufacturing firms from 2016 to 2017 and employed hierarchical regression analysis to test the proposed relationships.

Also, Benali (2025) conducted a study titled effects of CSR, company size, and company age on financial performance: firms listed on the Tunisian stock exchange in Tunisia to examine the impact of corporate social responsibility (CSR), company size, and company age on the financial performance of firms listed on the Tunisian stock exchange. The dependent variable, financial performance, was measured using return on assets (ROA) and return on equity (ROE). The independent variables included CSR (measured through a composite score based on CSR disclosure), company size (measured by the natural logarithm of total assets), and company age (measured by the number of years since incorporation). The study sampled firms listed on the Tunisian stock exchange, covering the period from 2015 to 2022, and employed panel data regression analysis to test the hypothesized relationships.

Furthermore, Simanjuntak et al. (2022) conducted a study titled The effect of firm age, firm size on financial performance with financial inclusion as intervening variable: Study on the go public banking sector in Indonesia for the 2015-2020 period in Indonesia to examine the effect of firm age and firm size on financial performance, with financial inclusion as an intervening variable, in the Indonesian banking sector. The dependent variable, financial performance, was measured using return on assets (ROA). The independent variables included firm age (measured by the number of years since the company's establishment) and firm size (measured by the natural logarithm of total assets), while financial inclusion served as an intervening variable (measured by the third-party funds to gross regional domestic product ratio). The study sampled banking sector companies listed on the Indonesia Stock Exchange, covering the period from 2015 to 2020, and employed path analysis using panel data regression to test the hypothesized relationships.

Nevertheless, Negash and Rezene (2025) conducted a study titled *Impact of firm's age and size on its financial performance: a case study of restaurants on Eritrea-Asmara city* in Eritrea to examine the impact of firm age and firm size on the financial performance of restaurants in Asmara city. The dependent variable, financial performance, was measured using profitability indicators including net profit margin and return on sales. The independent variables included firm age (measured by the number of years since the restaurant establishment) and firm size (measured by the number of employees and seating capacity). The study sampled restaurants operating in Asmara city, Eritrea, covering the period from 2019 to 2023, and employed multiple regression analysis to test the hypothesized relationships.

Moreover, Wanyonyi et al. (2023) conducted a study titled *Moderating effects of firm size and age on the relationship between celebrity chief executive officer characteristics and firm financial performance* in Kenya to examine the moderating effects of firm size and firm age on the relationship between celebrity Chief Executive Officer (CEO) characteristics and firm financial performance. The dependent variable, firm financial performance, was measured using return on assets (ROA) and return on equity (ROE). The independent variable, celebrity CEO characteristics, was measured using a index based on CEO visibility, credibility, and reputation. The moderating variables included firm size (measured by the natural logarithm of total assets) and firm age (measured by the number of years since incorporation). The study sampled firms listed on the Nairobi Securities Exchange, covering the period from 2012 to 2022, and employed hierarchical regression analysis with panel data to test the hypothesized relationships.

More so, Jamil et al. (2024) conducted a study titled *Exploring the impact of female leadership, company size, and age on financial performance in Indonesia's real estate and property industry* in Indonesia to examine the impact of female leadership, company size, and company age on the financial performance of firms in Indonesia's real estate and property industry. The dependent variable, financial performance, was measured using return on assets (ROA). The independent variables included female leadership (measured as a dummy variable indicating the presence of female directors or CEOs), company size (measured by the natural logarithm of total assets), and company age (measured by the number of years since the company's establishment). The study sampled real estate and property companies listed on the Indonesia Stock Exchange, covering the period from 2018 to 2022, and employed multiple linear regression analysis to test the hypothesized relationships.

Furthermore, Mayranti (2023) conducted a study titled *the influence of firm size and firm age on financial performance* in Indonesia to examine the effect of firm size and firm age on the financial performance of companies. The dependent variable, financial performance, was measured using return on assets (ROA). The independent variables included firm size (measured by the natural logarithm of total assets) and firm age (measured by the number of years since the company's establishment). The study sampled manufacturing companies listed on the Indonesia Stock Exchange, covering the period from 2017 to 2021, and employed multiple linear regression analysis to test the hypothesized relationships.

Lastly, Rahman & Yilun (2021) conducted a study titled *Firm size, firm age, and firm profitability: evidence from China* in China to examine the relationship between firm size, firm age, and firm profitability. The dependent variable, firm profitability, was measured using return on assets (ROA) and return on equity (ROE). The independent variables included firm size (measured by the natural logarithm of total assets and natural logarithm of total sales) and firm age (measured by the number of years since the company's incorporation). The study sampled non-financial firms listed on the Shanghai and Shenzhen Stock Exchanges, covering the period from 2009 to 2018, and employed panel data regression analysis with fixed effects and random effects models to test the hypothesized relationships.

Empirical review

Younis and Sundarakani (2020) conducted a study titled t*he impact of firm size, firm age and environmental management certification on the relationship between green supply chain practices and corporate performance* in the United Arab Emirates to investigate the moderating effects of firm size, firm age, and environmental management certification on the link between green supply chain practices and corporate performance. The study found that green supply chain practices significantly and positively influenced corporate performance across environmental, operational, and financial dimensions. Regarding the moderating effects, firm size showed a positive moderating effect on the relationship between green supply chain practices and corporate performance, indicating that larger firms benefit more from implementing green practices due to their greater resource availability and economies of scale. Firm age demonstrated mixed moderating effects, with younger firms showing stronger relationships between certain green practices and performance outcomes, possibly because newer firms are more agile and adaptable to innovative environmental practices. The researchers attributed these results to the resource-based view theory, suggesting that larger and appropriately aged firms possess the organizational capabilities and resources necessary to effectively leverage green supply chain initiatives for enhanced performance.

More so, Benali (2025) conducted a study titled *Effects of CSR, company size, and company age on financial performance: firms listed on the Tunisian stock exchange* in Tunisia to examine the impact of corporate social responsibility (CSR), company size, and company age on the financial performance of firms listed on the Tunisian stock exchange. The study found that CSR had a positive and significant effect on financial performance measured by return on assets and return on equity, supporting the stakeholder theory perspective that socially responsible activities enhance firm profitability. Company size also demonstrated a positive and significant relationship with financial performance, which the researcher attributed to larger firms benefiting from economies of scale, greater market power, and better access to resources and financing. Company age, however, showed a negative and significant relationship with financial performance, indicating that younger firms outperformed older ones; this result was explained by the liability of senescence theory, suggesting that older firms may suffer from organizational inertia, bureaucratic rigidities, and resistance to change that hinder their adaptability and efficiency in dynamic market conditions.

Moreover, Simanjuntak et al. (2022) conducted a study titled The effect of firm age, firm size on financial performance with financial inclusion as intervening variable: Study on the go public banking sector in Indonesia for the 2015-2020 period in Indonesia to examine the effect of firm age and firm size on financial performance, with financial inclusion as an intervening variable, in the Indonesian banking sector. The study found that firm size had a positive and significant direct effect on financial performance, indicating that larger banks achieve better profitability due to economies of scale, broader customer reach, and greater operational efficiency. Firm age, however, showed a negative and significant direct effect on financial performance, suggesting that older banks in Indonesia may face challenges related to organizational rigidity and slower adaptation to technological changes in the banking industry. Furthermore, financial inclusion was found to partially mediate the relationship between both firm size and firm age with financial performance, meaning that larger and younger banks were better positioned to promote financial inclusion initiatives, which in turn enhanced their financial performance. The researchers attributed these results to the resource-based view and dynamic capabilities theory, proposing that banks with appropriate size and age characteristics develop superior capabilities in expanding financial access, thereby translating into improved profitability.

Nonetheless, Negash and Rezene (2025) conducted a study titled *Impact of firm's age and size on its financial performance: a case study of restaurants on Eritrea-Asmara city* in Eritrea to examine the impact of firm age and firm size on the financial performance of restaurants in Asmara city. The study found that firm size had a positive and significant impact on financial performance, indicating that larger restaurants with greater seating capacity and more employees achieved higher profitability due to economies of scale, better utilization of resources, and ability to serve more customers. Firm age also demonstrated a positive and significant impact on financial performance, suggesting that older restaurants outperformed newer establishments; this result was attributed to the learning curve effect, where older restaurants benefit from accumulated experience, established customer loyalty, refined operational processes, and better reputation in the local market. The researchers explained these findings through the lens of organizational learning theory and resource-based view, proposing that both size and age contribute to the development of distinctive capabilities and market positioning that enhance financial outcomes in the competitive restaurant industry of Asmara.

Nevertheless, Wanyonyi et al. (2023) conducted a study titled *Moderating effects of firm size and age on the relationship between celebrity chief executive officer characteristics and firm financial performance* in Kenya to examine the moderating effects of firm size and firm age on the relationship between celebrity Chief Executive Officer (CEO) characteristics and firm financial performance. The study found that celebrity CEO characteristics, including visibility, credibility, and reputation, had a positive and significant direct effect on financial performance, suggesting that celebrity CEOs enhance firm profitability through their ability to attract attention, build stakeholder confidence, and leverage their personal brands for corporate benefit. Regarding the moderating effects, firm size positively moderated the relationship between celebrity CEO characteristics and financial performance, indicating that larger firms benefit more from celebrity CEOs due to their greater resources, broader stakeholder reach, and ability to amplify the CEO's influence; the researchers explained this through the resource-based view, proposing that larger firms provide platforms that enable celebrity CEOs to fully utilize their reputational capital. Firm age, however, negatively moderated the relationship, meaning that the positive effect of celebrity CEO characteristics on financial performance was stronger in younger firms; this result was attributed to the greater need for legitimacy and market recognition in newer firms, where celebrity CEOs can more dramatically transform stakeholder perceptions and accelerate organizational growth compared to established older firms with existing reputations.

Furthermore, Jamil et al. (2024) conducted a study titled *Exploring the impact of female leadership, company size, and age on financial performance in Indonesia's real estate and property industry* in Indonesia to examine the impact of female leadership, company size, and company age on the financial performance of firms in Indonesia's real estate and property industry. The study found that female leadership had a positive but insignificant impact on financial performance, suggesting that while women in leadership positions may contribute to better decision-making and diverse perspectives, their effect on profitability in the Indonesian real estate sector was not statistically strong enough to be conclusive; the researchers attributed this to the relatively low representation of women in top leadership positions within the industry, limiting the observable impact. Company size demonstrated a positive and significant impact on financial performance, indicating that larger real estate firms with greater total assets achieved higher returns due to economies of scale, stronger market positioning, and better access to funding for property development projects. Company age, however, showed a negative and significant impact on financial performance, meaning that younger real estate companies outperformed older ones; this result was explained by the liability of senescence theory, where older firms may suffer from bureaucratic structures, resistance to innovation, and slower adaptation to changing market trends and consumer preferences in the dynamic Indonesian property sector, while younger firms demonstrate greater agility and responsiveness to emerging opportunities.

Nevertheless, Mayranti (2023) conducted a study titled t*he influence of firm size and firm age on financial performance* in Indonesia to examine the effect of firm size and firm age on the financial performance of manufacturing companies listed on the Indonesia Stock Exchange. The study found that firm size had a positive and significant effect on financial performance measured by return on assets, indicating that larger manufacturing firms achieve better profitability due to economies of scale, greater operational efficiency, and stronger bargaining power with suppliers and customers; the researcher explained this through the resource-based view theory, suggesting that larger firms possess superior resources and capabilities that enhance their competitive advantage. Firm age, however, showed a negative and significant effect on financial performance, meaning that younger manufacturing companies outperformed older ones; this result was attributed to the liability of obsolescence theory, where older firms may become rigid in their operations, resistant to technological innovation, and less adaptable to changing market conditions, while younger firms demonstrate greater flexibility, adopt modern technologies more readily, and respond more effectively to evolving consumer preferences in the Indonesian manufacturing sector.

Lastly, Rahman and Yilun (2021) conducted a study titled *firm size, firm age, and firm profitability: evidence from China* in China to examine the relationship between firm size, firm age, and firm profitability among non-financial firms listed on the Shanghai and Shenzhen Stock Exchanges. The study found that firm size had a positive and significant relationship with profitability measured by return on assets and return on equity, indicating that larger Chinese firms achieve higher profitability due to economies of scale, greater market power, superior access to financing, and ability to diversify risks; the researchers explained this through the industrial organization theory, suggesting that larger firms can leverage their resources to create competitive advantages and barriers to entry. Firm age, however, demonstrated a negative and significant relationship with profitability, meaning that younger firms outperformed older ones in the Chinese market; this result was attributed to the liability of aging, where older firms may suffer from organizational inertia, bureaucratic inefficiencies, and difficulties adapting to rapid technological changes and evolving market dynamics in China's fast-growing economy, while younger firms exhibit greater innovation capacity, flexibility, and alignment with contemporary business practices and consumer preferences.

H1: There is no significant relationship between firm size and profitability, among listed consumer goods firms in Nigeria.

H2: There is no significant relationship between firm age and profitability among listed consumer goods firms in Nigeria.

Theoretical review

The Pecking Order Theory originated from two key stages. In 1961, Gordon Donaldson first observed that managers consistently prefer financing investments with internal funds (retained earnings) before seeking external capital. The formal theory was later developed by Stewart C. Myers and Nicolas Majluf in 1984. They explained why this behavior occurs using the concept of asymmetric information the idea that managers have better information about their company's true value than outside investors do. This information gap creates a hierarchy of financing preferences to minimize costs and avoid sending negative signals to the market.

Also, **Agency Theory** on the other hand explains the relationship between **principals** (who own a company, e.g., shareholders) and **agents** (who manage the company, e.g., executives), highlighting the inherent conflicts of interest that arise when these parties have different goals and risk tolerances. The theory originated in the early 1970s, notably through the work of **Stephen Ross** and **Barry Mitnick**. It addresses a fundamental problem in modern corporations: the separation of ownership from control. While principals (owners) want to maximize their wealth and the long-term value of the firm, agents (managers) may pursue their own interests, such as job security, high salaries, perks, or short-term bonuses, which may not align with shareholder value.

This divergence creates **agency problems**, primarily stemming from **Information Asymmetry, Moral Hazard, Monitoring costs, Bonding cost and Residual loss**. The theory also emphasizes the use of **incentive alignment mechanisms** to harmonize the interests of both parties. Common tools include performance-based compensation (stock options, bonuses tied to profitability), independent board oversight, and the threat of termination or takeover. In essence, agency theory provides a framework for understanding why corporate governance structures exist and how they aim to ensure that managers act in the best interests of their principal.

For the purpose of this studies Agency theory will be used to align with the studies due to it strongly aligns with the Nigerian context, though with a unique emphasis. Research confirms that the classic conflict between managers and owners exists, where governance mechanisms like monitoring costs and ownership structure significantly impact firm performance.

3. Methodology

This study examines the impact of firm size, firm age on the profitability of listed consumer goods firms in Nigeria. Return on asset and return on equity are measures of profitability while firm age which is measured as years the firm is in the business and firm size measured as total number of employee in the firm. The study covers a period of 13 years (2010-2022). The data were obtained from the Nigerian Exchange Group (NGX) listed consumer goods firms. The study's population consists of twenty-one (21) listed consumer goods companies. To be included in the sample, companies had to meet specific criteria: They must have been listed on the Nigerian Exchange Group market throughout the study period from 2010-2022, none of the companies should have been delisted during the period 2010-2022, they must have remained active and operational throughout the study period; and they must have a complete set of data available covering the study period. As a result of these filters, sixteen (16) companies met the criteria and were included in the sample size.

Model specification

ROA/ROE it= $\beta\beta$O + $\beta\beta$1 FSit + $\beta\beta$2 FAit + εi (1)

ROA = Return on Assets
ROE = Return on Equity
FS = Firm Size
FA = Firm Age
$\beta\beta$O = Constant to be estimated
$\beta\beta$1- $\beta\beta$6 = Coefficient of estimate
ε = Error term
t = Period
i = Firm

The first equation models the impact of firm size and firm age on the return on assets (ROA), while the second equation models their impact on the return on equity (ROE). The coefficients β1 and γ1 represent the effect of firm size on ROA and ROE, respectively, while β2 and γ2 represent the effect of firm age on ROA and ROE, respectively.

4. Results and discussion

Descriptive statistics

The Stata analysis output provided describes the descriptive statistics of four variables: FS, FA, ROA, and ROE, based on data generated from the annual reports of sample firms for 2010 to 2022. These statistics provide insights into the central tendency, variability, and range of the variables FS, FA, ROA, and ROE within the sample firms over the specified period. The mean values indicate the average values of each variable, while the standard deviation gives a measure of the dispersion of data points around the mean. The minimum and maximum values show the range within which the data points fall for each variable.

Table 1: Descriptive Statistics of the Variables

Variables	Obs	Mean	Std Dev.	Min	Max
ROA	208	0.059	0.077	-0.113	0.265
ROE	208	0.142	0.242	-0.89	0.856
FS	208	10.663	0.623	9.086	11.793
FA	208	51.125	18.611	5	99

Source: STATA Output 14.0 Based on Data Generated from Annual Report of Sample firms (2010-2022).

Return on Assets (ROA) measures the profitability of a firm in terms of its assets. In this dataset, there are 208 observations available. The average ROA is approximately 0.0591327, which indicates that, on average, the firms in the sample generate a return of around 5.91% on their assets. The standard deviation of 0.0776911 suggests that the ROA values have a moderate dispersion around the mean. The minimum value of -0.1134 indicates that some firms in the sample are experiencing negative returns on their assets, while the maximum value of 0.2652 represents the highest return on assets observed in the dataset.

Return on Equity (ROE) measures the profitability of a firm in relation to its equity or shareholders' investment. The dataset consists of 208 observations. The average ROE is approximately 0.1417322, which indicates that, on average, the firms in the sample generate a return of around 14.17% on their equity. The standard deviation of 0.2419173 suggests that the ROE values have a relatively high dispersion around the mean. The minimum value of -0.8995 indicates that some firms in the sample have a negative return on their equity, while the maximum value of 0.8564 represents the highest return on equity observed in the dataset.

Firm Size (FS) represents the size of the firms in the dataset. There are 208 observations available. The average firm size, as indicated by the mean value of 10.66368, suggests that, on average, the firms in the sample have a size around this figure. The standard deviation of 0.6236269 indicates that the firm size values have relatively little dispersion around the mean. The minimum value of 9.0868 represents the smallest firm size observed, while the maximum value of 11.7933 represents the largest firm size in the dataset.

Firm Age (FA) represents the age of the firms in the dataset. There are 208 observations available. The average firm age, as indicated by the mean value of 51.125, suggests that, on average, the firms in the sample have an age of approximately 51 years. The standard deviation of 18.61182 indicates that the firm age values have a relatively high dispersion around the mean. The minimum value of 5 represents the youngest firm in the dataset, while the maximum value of 99 represents the oldest firm.

Table 2: Correlation Matrix

Variables	ROA	ROE	FS	FA	VIF
ROA	1.0000				1.04
ROE	0.8960	1.0000			1.02
FS	0.1682	0.1775	1.0000		1.05
FA	-0.0588	0.0832	0.8960	1.0000	1.03

Source: STATA Output 14.0 Based on Data Generated from Annual Report of Sample firms (2010-2022).

ROA and FS (Firm Size): have a Correlation coefficient of 0.1682 which indicates a weak positive correlation coefficient of 0.1682 suggests that there is a slight tendency for larger firms (measured by firm size, FS) to have slightly higher returns on assets (ROA). However, the correlation is not strong, indicating that the relationship between firm size and ROA is not very pronounced. In other words, while there may be a small positive association between firm size and ROA, it is not a significant factor in determining a firm's profitability. Other factors, such as operational efficiency, industry dynamics, and management effectiveness, may have a more substantial influence on a firm's ability to generate higher returns on assets. This result is consistent with the work of Hongli, et al, (2019) Khoiro, (2015).while the result deviates from the study of Majumdar, (1997) and Goddard, et al, (2005).

ROA and FA (Firm Age): has a Correlation coefficient of -0.0588 which indicates a weak negative correlation coefficient of -0.0588 suggests that there is a slight tendency for older firms (measured by firm age, FA) to have slightly lower returns on assets (ROA). However, the correlation is weak and not statistically significant, meaning that the relationship between firm age and ROA is not prominent. This indicates that firm age alone is not a strong determinant of a firm's profitability. Other factors, such as industry competition, technological advancements, and market conditions, may have a more substantial impact on a firm's ability to generate higher returns on assets. This result is consistent with the work of Loderer and Waelchli, (2010) Rahman, and Yilun, (2021). While the result deviates from the study of Akben, (2016) and Rafiq, et al (2016).

ROE and FS (Firm Size): have a Correlation coefficient of 0.1775 which indicates a weak positive correlation coefficient of 0.1775 and suggests a slight tendency for larger firms (measured by firm size, FS) to have slightly higher returns on equity (ROE). However, the correlation is not strong, indicating that the relationship between firm size and ROE is not highly significant. While there may be a small positive association between firm size and ROE, other factors, such as capital structure, profitability ratios, and market conditions, may have a more substantial influence on a firm's ability to generate higher returns on equity. This result is consistent with the work of Akram, et al (2021) Rahman and Yilun, (2021). While the result deviates from the study of Majumdar, (1997) and Goddard, (2005).

ROE and FA (Firm Age): have a Correlation coefficient of 0.0832 which indicate a weak positive correlation coefficient of 0.0832 suggests a slight tendency for older firms (measured by firm age, FA) to have slightly higher returns on equity (ROE). However, the correlation is weak and not statistically significant, indicating that the relationship between firm age and ROE is not prominent. This suggests that firm age alone is not a major determinant of a firm's profitability. Other factors, such as industry dynamics, competitive advantage, and financial management practices, may have a more significant role in determining a firm's ability to generate higher returns on equity. This result is consistent with the work of Rahman, and Yilun (2021) Loderer, and Waelchli, (2010). While the result deviates from the study of Serrasqueiro, and Nunes, (2008) and Majumdar (1997).

R-Squared: has R-Squared of 0.821, this shows that R-squared value indicates the proportion of the variation in the dependent variable that can be explained by the independent variables in the regression model. In this case, approximately 82.15% of the variation in the dependent variable can be explained by the independent variables included in the model. This suggests a relatively good fit of the model to the data, indicating that the independent variables (FS, and FA) collectively have a strong relationship with the dependent variable.

Prob>F: has a Prob>F of 0.000, The Prob>F value represents the overall statistical significance of the regression model. In this case, the extremely low p-value of less than 0.000 indicates that the regression model as a whole is statistically significant. This means that there is strong evidence to suggest that the independent variables (FS, and FA) collectively have a significant relationship with the dependent variable.

VIF of 1.04 the Variance Inflation Factor (VIF) measures the extent of multicollinearity (correlation between predictor variables) in the regression model. A VIF value of 1.04 suggests that there is minimal multicollinearity among the independent variables, as it is close to 1. This indicates that the variables are relatively independent of each other in explaining the variations in the dependent variable. Therefore, multicollinearity is not a major concern in this regression model.

Heteroskedasticity of 0.807, the heteroskedasticity value represents the presence of heteroskedasticity in the regression model. A value of 0.8069 suggests that there is some degree of heteroskedasticity present in the model. The presence of heteroskedasticity may indicate that the standard errors may be biased, and the significance of coefficients may be affected. It is important to be cautious when interpreting the coefficients and their standard errors in the presence of heteroskedasticity.

Hausman test statistics have a value of 0.561, which is not statistically significant. This suggests that there is no evidence to reject the null hypothesis that the random effects model is appropriate. Therefore, the random effects model can be considered as a suitable choice for analyzing the relationship between the independent variables and the dependent variable in this regression.

Table 3: Regression Results (OLS – Robust Standard Errors)

Variables	Coefficient	Robust Std. Error	t-Statistic	P-value	95% Confidence Interval
ROA	1.219542	1.290992	0.94	0.346	-1.325856 to 3.764940
FS	0.0035713	0.0043553	0.82	0.413	-0.0050159 to 0.0121584
FA	-0.0005769	0.0001141	-5.06	0.000	-0.0008018 to -0.0003520
Constant (_CONS)	0.0094690	0.0463502	0.20	0.838	-0.0819179 to 0.1008558
R-Squared					0.8215
Prob > F					0.0000
Mean VIF					1.04
Heteroskedasticity Test (p-value)					0.8069
Hausman Test (p-value)					0.5614
Breusch–Pagan LM Test (p-value)					0.8069

Source: STATA Output 14.0 Based on Data Generated from Annual Reports of Sample Firms (2010–2022).

ROA increases by 1.2195 units for every one-unit increase in the predicted value based on firm size and firm age, assuming other factors remain constant. Robust Std. Error (1.2910) Indicates variability in the estimated coefficient. T-statistic (0.94) and P-value (0.346): since the p-value > 0.05, the result is not statistically significant. This means that the model does not provide strong evidence that firm size and firm age significantly impact ROA. 95% Confidence Interval (-1.326 to 3.765): the interval includes zero, which further confirms no significant effect.

Coefficient (0.2898): Indicates that for every unit increase in the predictors (firm size and age), **ROE increases by 0.2898 units** on average. **Robust Std. Error (0.0190) t**his small error suggests the estimate is very precise. **T-statistic (15.28)** and **P-value (0.000)** the **p-value is < 0.01**, meaning the relationship is **highly statistically significant**. **95% Confidence Interval (0.2524 to 0.3272) d**oes not include zero, which confirms a strong and reliable relationship.

Firm Size has a Coefficient of 0.0035713, Robust Standard Error: 0.0043553 is indicate that the coefficient for FS (Firm Size) is 0.0035713. This suggests that, holding other variables constant, a one-unit increase in firm size is associated with an estimated increase of 0.0035713 units in the dependent variable. However, the coefficient is not statistically significant at the 0.05 significance level (P > 0.05), indicating that there is no strong evidence of a relationship between firm size and the dependent variable.

Firm Age has a Coefficient of 0.0005769, Robust Standard Error: 0.0001141 It indicates that the coefficient for FA (Firm Age) is -0.0005769. This means that, holding other variables constant, a one-unit increase in firm age is associated with an estimated decrease of 0.0005769 units in the dependent variable. For example, if the firm age increases by one year, the dependent variable is expected to decrease by approximately 0.0005769 units. The coefficient is statistically significant at the 0.05 significance level (P < 0.05), indicating a significant relationship between firm age and the dependent variable.

Breusch and Pagan Lagrangian Multiplier Test for Random Effects the Breusch and Pagan Lagrangian Multiplier Test shows 0.8069. In this case, the test statistics have a value of 0.8069, indicating that there is no statistically significant evidence of heteroskedasticity in the random effects model. This suggests that the assumption of homoskedasticity (equal variances of error terms) in the random effects model is reasonable.

5. Conclusion

In conclusion, the study reveals a differentiated impact of firm size and firm age on profitability within the Nigerian consumer goods sector. Firm size does not statistically significantly influence either ROA or ROE. However, firm age exerts a statistically significant negative influence specifically on Return on Equity (ROE), suggesting that as these firms mature, their ability to generate returns for shareholders tends to diminish. While the model effectively explains a large portion of ROE's variation, it does not significantly explain ROA.

Stakeholders should consider various factors beyond firm size and age when assessing a firm's profitability, including operational efficiency, industry dynamics, management effectiveness, capital structure, profitability ratios, and market conditions. Older firms in the Nigerian consumer goods sector should strategically address potential age-related challenges by prioritizing innovation, enhancing adaptability to market changes, and actively combating organizational rigidities or inertia that may lead to declining profitability over time. Younger firms should leverage their inherent advantages in agility and innovation to capitalize on opportunities and receive strategic support for growth and capability development.

Reference

Akben-Selcuk, E. (2016). Does firm age affect profitability? *Evidence from turkey. International Journal of Economic Sciences*, *5*(3), 1-9.

Akram, T., Farooq, M. U., Akram, H., Ahad, A., & Numan, M. (2021). The Impact of Firm Size on Profitability–A Study on the Top 10 Cement Companies of Pakistan. *Jurnal Aplikasi Manajemen, Ekonomi Dan Bisnis*, *6*(1), 14-24.

Barango-Tariah, M. U., & Oguru, P. G. (2024). The Future of Marketing Opportunities in Nigeria's Economic Development. *BW Academic Journal*, *1*(3), 31-37.

Benali, W. (2025). Effects of CSR, company size, and company age on financial performance: firms listed on the Tunisian stock exchange. *SN Business & Economics*, *5*(7), 80.

Dan Perbankan, J. K. (2021). The impact of firm size, leverage, firm age, media visibility and profitability on sustainability report disclosure. *Jurnal Keuangan dan Perbankan*, *25*(1), 36-47.

Goddard, J., Tavakoli, M., & Wilson, J. O. (2005). Determinants of profitability in European manufacturing and services: evidence from a dynamic panel model. Applied Financial Economics, 15(18), 1269-1282.

Hongli, J., Ajorsu, E. S., & Bakpa, E. K. (2019). The effect of liquidity and financial leverage on firm performance: Evidence from listed manufacturing firms on the Ghana stock exchange. *Research Journal of Finance and Accounting*, *10*(8), 91-100.

Jamil, P. C., Nur, N. M., & Sianturi, R. S. M. (2024). Exploring the Impact of Female Leadership, Company Size, and Age on Financial Performance in Indonesia's Real Estate and Property Industry. *INVEST: Jurnal Inovasi Bisnis dan Akuntansi*, *5*(2), 465-471.

Kharatyan, D., Nunes, A., & Lopes, J. (2016). Financial ratios and indicators that determine return on equity. *XVII–Encuentro AECA*.

Loderer, C. F., & Waelchli, U. (2010). Firm age and performance. *Available at SSRN 1342248*.

Mayranti, A. (2023, January). The Influence of Firm Size and Firm Age on Financial Performance. In Bandung Conference Series: Accountancy (Vol. 3, No. 1, pp. 177-184).

Monoarfa, R. (2018). The role of profitability in mediating the effect of dividend policy and company size on company value. *Business and Management Studies*, *4*(2), 35.

Negash, Y. A., & Rezene, K. K. (2025). Impact of firm's age and size on it's financial performance: a case study of restaurants on Eritrea-Asmara city. *International Journal of Economics, Business and Social Science Research*, *3*(4), 01-39.

Oshim, J. C., & Igwe, A. O. (2024). Corporate governance and financial performance of listed consumer goods firms in Nigeria. *International Journal of Business and Management Review*, *12*(1), 96-115.

Rafiq, S., Salim, R., & Smyth, R. (2016). The moderating role of firm age in the relationship between R&D expenditure and financial performance: Evidence from Chinese and US mining firms. *Economic Modelling*, *56*, 122-132.

Rahman, J. M., & Yilun, L. (2021). Firm size, firm age, and firm profitability: evidence from China. *Journal of Accounting, Business and Management*, *28*(1), 101-115.

Rahman, J. M., & Yilun, L. (2021). Firm size, firm age, and firm profitability: evidence from China. *Journal of Accounting, Business and Management*, *28*(1), 101-115.

Serrasqueiro, Z., & Nunes, P. M. (2008). Performance and size: empirical evidence from Portuguese SMEs. Small Business Economics, 31(2), 195-217.

Simanjuntak, O. T. W., Suripto, S., Wardianto, K. B., & Mulkhan, U. M. (2022). The effect of firm age, firm size on financial performance with financial inclusion as intervening variable: Study on the go public banking sector in Indonesia for the 2015-2020 period. *International Journal of Advanced Multidisciplinary Research and Studies*, *2*(3), 607-615.

Singh, et al, (2024). Defining Return on Assets (ROA) in empirical corporate finance research: a critical review. *Empirical Economics Letters*.

Wanyonyi, E., Mulili, B., Kirori, G., Njagi, B., & Macheru, J. (2023). Moderating Effects of Firm Size and Age on The Relationship Between Celebrity Chief Executive Officer Characteristics and Firm Financial Performance. *Journal of African Interdisciplinary Studies*, *7*(8), 23-47.

Younis, H., & Sundarakani, B. (2020). The impact of firm size, firm age and environmental management certification on the relationship between green supply chain practices and corporate performance. *Benchmarking: An International Journal*, *27*(1), 319-346.