



MODELLING FINANCIAL PERFORMANCE OF FOOD AND BEVERAGES COMPANIES LISTED ON NIGERIAN EXCHANGE GROUP: THE FIRM CHARACTERISTICS EFFECT

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ABSTRACT:

The financial performance of food and beverages firms in Nigeria dwindle especially when they are unable to effectively combine their experience over the ages, asset base and debt resources in a way that yields profitable returns. The study determines the effect of firm characteristics on the financial performance of listed food and beverages firms in Nigeria. The study intends to ascertain the extent to which firm size, firm age and firm leverage affect the return on assets of listed food and beverages firms in Nigeria. Ex-post facto research design was deployed in the study. Purposive sample of five (5) listed food and beverages firms was used in the study. Secondary data were obtained from the annual reports of sampled companies from 2012 to 2021 reporting periods. Panel least square regression using Fixed Effect Model was utilised in estimating the regression results at 5% level of significance. The findings showed that although Firm size had no significant but positive effect on the return on assets of listed food and beverages firms in Nigeria, Firm age and Firm leverage had a significant but negative effect on the return on assets of listed food and beverages firms in Nigeria; The study conclude that sound firm characteristics basically show the extent of financial performance of firms because they are indices of how effective and efficient the management makes use of firms' available resources. It was recommended that food and beverages firms should increase their asset base in order to have the wherewithal to commit their available resources to more investment opportunities; Older firms should where necessary change their systems to cope with the new environmental conditions, innovation and advancement in order to avoid being rigid, which worsens the firms' financial performance. It was also recommended that there should be a well-planned capital structure in the food and beverages firms in order to prevent risk of insolvency, increase business value, maximize shareholders' wealth, and reduce cost of capital among firms.

Key words: Firm Age, Firm Characteristics, Firm Leverage, Firm Size, Return on Assets

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1. INTRODUCTION

Over the years, financial performance apparently remains the most overbearing concern of all users of financial reports simply because it best measures the financial sustainability of the firm while showing the extent to which the financial goals of the firm has been attained (Akuno & Kariuku, 2019). Firms' financial performance plays the role of increasing the firms' market value and by extension enhances the growth of the whole industry, leading to the overall prosperity of the nation's economy. The characteristics of a firm are undoubtedly indicators of how sound the financial performance of the firm is, which has great implications on not only firm's financial health but its ultimate survival. Thus, sound firm attributes basically show the extent of financial performance of firms because they are indices of how effective and efficient the management is in making use of firms' available (Abdullahi, Enemali, Duna & Ado, 2019). This is why the primary aim of every manager is to utilise firm resources (such as experience over the years, assets and debt resources) in such ways that not only maintain the financial performance level of the firms but also enhances firm performance with the aim of maximizing shareholders value and attracting more investors (Ali, Yassin & Ramia, 2020).

However, corporate financial goals cannot be utterly attained when the characteristics or attributes of the firms are not well put to use. For example, having huge assets that are idle reduces the profitability of the firm because the resources that should have been used to earn income are not well maximized. Secondly, there is a tendency of aged firms being used to static processes and therefore could be reluctant to changing their production and marketing techniques. To cap it up, food and beverages firms with high debt profile also pay high finance costs which directly reduces the earnings of the firms. These anomalies above make the earning capacity of food and beverages somewhat unstable (Uzoka, Ifurueze & Anichebe, 2020; Abdulkarim, Mohammed, Mohammed & Abubakar, 2019). The signals sent through unhealthy firm characteristics to capital providers are such that discourages investment decisions among investors. This equally negatively undermines the firm performance rate as the resources needed for expansion and growth are highly reduced. Therefore, the financial prosperity, growth and survival of the firm is threatened. The financial performance of food and beverages manufacturing firms continues to worsen even beyond the rate at which they grew in the past three decades as a result of the inability of the firms to effectively combine their experience over the ages, asset base and debt resources in a way that yields profitable returns. This has resulted in collapse of some food and beverages firms such as Bendel Brewery Limited; Danico West Africa Limited; Pal Breweries Plc; Port Harcourt Flour Mills Limited; Scoa Foods Limited; Standard Biscuit & Agro Products, Jos; UTC Foods Plc; Vitamalt Plc; Ranona Limited; and Deli Foods Limited (Nigerian Tribune, 2021). Apparently from the above argument, the inter-firm differences in the financial performance of food and beverages firms can be effortlessly attributed to different levels of resources provided to each firm as a result of firm's age, size and leverage. Firm age provides the firm with enormous experience with which more profits can be realized because a firm that has been in operation for years is already acquainted with the market structure, and so, can easily generate sales from its large pool of market share (Shuaibu, Ali & Amin, 2019).

Indeed, firm characteristics entails a number of attributes or features that differentiate a firm from another firm in the same sector or across sectors (Adekoya, Nwaobia & Siyanbola, 2022). It is a term used by policy-makers, researchers and other stakeholders to refer to internal firm mechanisms that make a company unique from other companies (Ezekwesili & Ezejiofor, 2022). A food and beverages firm is characterized by its age, size, liquidity and leverage levels which may jointly interfere with the magnitude of the financial performance of the firm. Financial performance of a firm denotes the extent to which a firm attains its objective of increasing the shareholders wealth invested in the firm (Opoku-Asante, Winful, Sharifzadeh & Neubert, 2022). Measuring the financial performance of firms has gained significant attention across countries in the area of business and



corporate finance literature (Goodluck, Okoye & Nwoye, 2022). This is because financial performance of firms is a vital concern to all stakeholder groups having a direct or indirect interest in a firm. It is on this basis that efforts are made to determine whether firm structural characteristics such as firm age, size and leverage can meaningfully account for the inter-firm differences in return on assets of firms.

Accordingly, the performance of firms is underlined by how well the managers of the firms convert the firms' assets into profit from time to time (Irom, Okpanachi, Ahmed & Tope, 2018). A larger pool of assets afford the firm the ability to get more than average earnings from the market share available. Firms that do not have enough internally-generated funds for investment, often resort to external borrowing whereby debt is obtained at a fixed cost. Leveraging on this arrangement tends to increase firm results through increased monitoring, tax shields and reduction in net cost of capital (Kartiningasih & Daryanto, 2020). However, an abnormal level of noncurrent debt has the tendency of putting the firm in an excessively leveraged state that amplifies the risk exposure of the firm (Opoku-Asante, Winful, Sharifzadeh & Neubert, 2022).

The characteristics of a food and beverages firm, particularly their size, age and leverage, remains the primary concern of this study because of its implications on the financial health and ultimately the survival of the firm (Goodluck, Okoye & Nwoye, 2022). The age of a firm can influence its financial results on the belief that a long-established company would have more experience in carrying out business activities in its industrial sector and it is better known to the broader community rather than newcomers (Kim, Duvernay, & Thanh, 2021). Furthermore, larger firms are believed to have more competitive advantage over small firms since they tend to have bigger market share that enables them make more profit (Lorrana, Correio & Correio, 2022) and create bigger value for the shareholders (Adekoya, Nwaobia & Siyanbola, 2022). Food and beverages firms with more leverage attract severer monitoring exercised by debt holders over managerial activities, which in the long-run reduces agency costs and improves firm's financial results (Yassin, 2021). However, older firms stand the chance of not being flexible enough to make rapid adjustment that would have reduced barriers to innovation (Irom, Okpanachi, Ahmed & Tope, 2018; Ali, Yassin & Ramia, 2020). The rigidity of older food and beverages firms, idle assets of larger food and beverages firms and risk of high indebtedness of the firms can limit their growth and chances of increasing firm performance level.

The effect of firm age, firm size and firm leverage on the return on asset of listed food and beverages firms in Nigeria has equally not received a more elaborate attention. Prior studies such as Adekoya, Nwaobia and Siyanbola (2022); Hossain, Azam, Uddin and Shovon (2022); Lorrana, Correio and Correio (2022); Opoku-Asante, Winful, Sharifzadeh and Neubert (2022); Goodluck, Okoye and Nwoye (2022); Mwendwa and Gatauwa (2022); Dodoo, Donkor and Appiah (2021); Kim, Duvernay, and Thanh (2021); Njiraini, Mwangi, Kaijage and Ganesh (2021); Kamau, Olweny and Muturi (2021); Olowofela, Tonade and Lisoyi (2021); Muema and Abdul (2021); Boshnak, Basheikh and Basaif (2021); Dahmash, Salamat, Masadeh and Alshurafat (2021); Msomi and Nyide (2021); Yassin (2021); et cetera. except the study conducted by Abdullahi, Enemali, Duna and Ado (2019); Dioha, Ahmed and Okpanachi (2018) and Shuaibu, Ali and Amin (2019) which are not up to the 2021 research year, failed to throw more concise light on the subject of discourse. This study therefore addresses this gap in knowledge and examines the effect of firm characteristics on the financial performance of listed food and beverages firms in Nigeria.

1.1 Objectives of the Study

The broad objective of the study is to determine the effect of firm characteristics on the financial performance of listed food and beverages firms in Nigeria. The specific objectives of the study include:



- i. To ascertain the extent to which firm size affects the return on assets of listed food and beverages firms in Nigeria.
- ii. To determine the extent to which firm age affects the return on assets of listed food and beverages firms in Nigeria.
- iii. To investigate the extent to which firm leverage affects the return on assets of listed food and beverages firms in Nigeria.

1.2 Hypotheses

- a. Firm size has no significant effect on the return on assets of listed food and beverages firms in Nigeria.
- b. Firm age has no significant effect on the return on assets of listed food and beverages firms in Nigeria.
- c. Firm leverage has no significant effect on the return on assets of listed food and beverages firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Firm Characteristics

Goodluck, Okoye and Nwoye (2022) conceptualized firm characteristics as variables that affect a firm's decisions both internally and externally. Firm characteristics are also termed firm structure or firm attributes which is often considered to be a major determinant of firm value and performance in modern business management. Firm characteristics refer to all the factors such as demographic factors and managerial attributes which encompass part of the internal environment of a given firm (Ali, Yassin & Ramia, 2020). Firm characteristics therefore entail all the attributes that a particular firm possesses which define its activities and back the decisions of the firm (Abdullahi, Enemali, Duna & Ado, 2019). Furthermore, firm characteristics entails a number of attributes or features that differentiate a firm from another firm in the same sector or across sectors (Adekoya, Nwaobia & Siyanbola, 2022). It is a term used by policy-makers, researchers and other stakeholders to refer to internal firm mechanisms that make a company unique from other companies (Ezekwesili & Ezejiiofor, 2022). Firm characteristics are those inducement variables which are relatively sticky at firms' level across time such as firm size, leverage, profitability, liquidity, firm growth, among others, which can contribute positively or negatively to firm performance since they influence investment and financing decisions (Olowofela, Tonade & Lisoyi, 2021). They are those factors that are endogenous to a firm and are capable of influencing their financial decision (Abdulkarim, Mohammed, Mohammed & Abubakar, 2019). These factors are within the control of the management because they are firm attributes or characteristics which are financial in nature. Firm characteristics make up the internal environment of the firm using managerial and demographic variables (Mwebia, 2017). Firm characteristics refers to the managerial as well as demographic fickle which comprises the factors that surrounds a company (Muema & Abdul, 2021). Firm characteristics are those attributes which affect firm's operations.

2.1.2 Financial Performance

The concept of financial performance is simply 'a measure of how well a firm can leverage assets in key industries to generate revenue' (Akram, 2017). It serves as a general measure of a firm's overall financial position over a period of time and can also be used to compare similar companies in the same industry or to aggregate and compare industries and sectors (Nworie & Ofoje, 2022). Financial performance is the focal point of stakeholders in exhibiting interest in any activity of a business enterprise (Abubakar, Isah & Haruna, 2018). A sound financial performance is also known to be the reward for good decisions made by the stakeholders through the directors and managers (Goodluck, Okoye & Nwoye, 2022). Financial performance reflects management's effectiveness and efficiency in making use of company's resources (Mwendwa & Gatawa, 2022).



The financial performance of a firm is commonly regarded as a necessary qualification for long-term firm existence and success (Gitman, Juchau & Flanagan, 2015). Financial performance from the perspective of macroeconomics, is the direct outcome of managing economic assets and ensuring its effective use in operational, investment and monetary ventures of the firm (Doodoo, Donkor & Appiah, 2021). Financial performance refers to the extent to which the financial goals of a firm have been achieved (Okechukwu, 2021). It is, in short, the monetary measure of the outcome of a firm's policies and operations. The essence of financial performance measurement is to review the financial status of the firm to help various investors and stakeholders make investment decisions. Financial performance is further defined as the ability of a firm to achieve its planned financial results as measured against its intended outputs and actual outputs (Ali, Yassin & Ramia, 2020). Financial performance is measured using financial ratios in order to give a clear understanding about the extent of firm performance. In the submission of Kim, Duvernay, and Thanh (2021), financial performance of a firm is used as a tool measuring an organization current development and potential growth. Firm financial performance has been a major concern of business practitioners in all kinds of companies (Egbunike & Okerekeoti, 2018) because it has paramount consequences on a firm's health and eventually its survival (Msomi & Nyide, 2021). This study uses Return on Asset (ROA) as the metric for financial performance.

Return on Asset (ROA) helps to determine how much the firm earns from the use of its assets. The amount of profit that is earned for each investment value in the firms' assets is shown by ROA (Opoku-Asante, Winful, Sharifzadeh & Neubert, 2022). ROA measures how profitable a firm is with respect to the total assets invested in the firm (Goodluck, Okoye & Nwoye, 2022). ROA expresses earnings after tax as a percentage of total firms assets owed and used by the firm in generating revenue. Return on asset (ROA) thus technically reveals how much profit per naira which a company earns for its one naira asset. Assets include cash in bank, account receivable property, equipment, inventory and furniture (Kazeem, 2015). These are jointly used to generate earnings for the firm, after which the percentage contribution of assets used towards net income realized is shown through ROA. The formulae is mathematically expressed below thus:

$$\frac{\text{Earnings After Tax}}{\text{Total Assets}}$$

2.1.3 Development of Hypotheses

2.1.3.1 Firm Size and Financial Performance

Firm size classifies a firm as a big or small company based on the total assets owned or the total sales created by the company (Ezekwesili & Ezejiofor, 2022). The size of food and beverages firm can be measured by the value of its assets (Adekoya, Nwaobia & Siyanbola, 2022). Firm Size entails the amount of asset base controlled and owned by the firm. It can affect a company's competitive capacity. For example, large companies have large resources to support competitiveness. In addition, they also benefit from higher economies of scale, which are not present in small companies. As a result, it makes them enjoy lower costs while increasing their output. Firms with large size tend to have more competitive advantage over small firms in that such large-sized firms have bigger market share that enables them make more profit and create bigger value for the shareholders. Size of a firm determine its level of economic activities and the possible economics of scale enjoyed by the firm (Goodluck, Okoye & Nwoye, 2022). Food and beverages firms therefore work constantly to increase the effectiveness and efficiency of their assets utilization and reduce loss in the ongoing effort to achieve high financial performance amidst the ravaging COVID-19 pandemic. To remain competitive and sustainable, food and beverages firm must get more from their assets while keeping costs of operation down. The size of the firm is one of the decisive factors in the achievement of efficiency in its operations.

Large food and beverages firms have the wherewithal to commit their available resources at their disposal to several investment opportunities as a result of their access to resources, greater market



power, and economies of scale, which they can use to generate stronger competitive capability than their smaller firms. Nonetheless, idle assets of larger firms together with the time-consuming bureaucracies of large firms can limit their growth and chances of increasing firm performance level (Goodluck, Okoye & Nwoye, 2022; Kim, Duvernay & Thanh, 2021). The study measures firm size as the natural logarithm of the firm's total assets.

2.1.3.2 Firm Age and Financial Performance

Firm age is defined as the length of time that a firm has existed, which is usually expressed in years (Adekoya, Nwaobia & Siyanbola, 2022) and considered as important determinant of firm performance. Firm age is the difference between a particular year of interest and the year the firm was established (Kartiningasih & Daryanto, 2020). It is expected that the older a food and beverages firms is, the more financially sustainable it attains more because length of time in operation may be associated with learning curve (Kisengo & Kipchumba, 2015). This argument gains more supporters because of the notion that older firms most probably have learned much from their experiences than newcomers. Firm age therefore was defined by McDonald, Senaji and Orero (2020) as the experience of an organization in the market which is computed as number of years the firm has been in operations in that particular industry.

In a more encompassing term, firm age is used to denote the length of life of a firm since it was established until the period of time as long as the company is still in existence. Firm age determines financial performance as it is believed that the risk rate of a firm will fall with time and firm survival increases with age of the firm. Thus, new firms are believed to be unable to achieve economies of scale and they rarely have the sufficient managerial resources and expertise (Irom, Okpanachi, Ahmed & Tope, 2018). "Age of firm" (also "firm age"; both phrases are used interchangeably) is used with an alarming regular frequency in various studies in the fields of organizational behavioral, accounting and corporate finance, law and law and economics, corporate governance, industrial economics and the like. Age is deemed to open new windows of research opportunity in the field of diversification, and especially in well-known topics like integration/specialization in horizontally- or vertically-related industries, as being new in a given industry can also be moderated with age.

A long-established firm would have more experience in carrying out business activities in its industry and it is better known to the broader community rather than newly-established firms (Adekoya, Nwaobia & Siyanbola, 2022). The experienced garnered by older firms over the years helps them to standardize, coordinate and speed up their operation with the purpose of increasing firm operational results and financial performance (Uzoka, Ifurueze & Anichebe, 2020). This will make older firms to leverage on the standard set for most activities and well established policy for various aspect of operations to perform better than young firms. However, a strand of literature argues that older firms stand the chance of not being flexible enough to make rapid adjustment that would have reduced barriers to innovation (Irom, Okpanachi, Ahmed & Tope, 2018; Ali, Yassin & Ramia, 2020). The rigidity of older food and beverages firms towards adapting with the rapid changes in its business environment makes firm age to have a negative effect on the financial performance of the firms. This is to say, the inability of older firms to change their systems to cope with the new environmental conditions, innovation and advancement, makes the firms' current financial performance to be worse (Abdullahi, Enemali, Duna & Ado, 2019). In the study, firm age is operationalized as the length of time that a firm has existed.

2.1.3.3 Firm Leverage and Financial Performance

Debt and Equity constitute the two types of capital available to a firm. Each capital type has its own merits and demerits. The use of debt capital produces firm leverage which is one of the most critical issues for business enterprises that want to sustain its profitability. Firm leverage refers to the contribution of debt securities with equity which are combined to form the capital structure of a business (Opoku-Asante, Winful, Sharifzadeh & Neubert, 2022). The optimal combination of debt



and equity components is essential in minimizing the cost of capital to the firm. Firm leverage always gives rise to financial risk and increase in the cost of capital. Firm leverage is important because it can increase the value of a business, maximize shareholders' wealth, and reduce the cost of capital to its lowest limit, especially with a well-planned capital structure that prevents the firm from the risk of insolvency. The import of optimal leverage utilization is to avoid a case where the business would not take on debts beyond its debt capacity. Also, a good plan of firm leverage ensures that the firm can take advantage of wealth creation opportunities in the market. Thus, firm leverage indicates the effectiveness of a firm in capital utilization.

Leverage refers to the amount of debt a firm uses to finance assets. In a more specific sense, firm leverage involves the use of debt to acquire additional assets. Firm leverage is a concept that has been evolving from time immemorial, which attracted attention most notably from the works of Modigliani and Miller (1958). As time went on, firm leverage was seen as the amount of external finance or debt finance which a company utilised in bankrolling its assets (Abdulkarim, Mohammed, Mohammed & Abubakar, 2019). It is the degree to which a firm used borrowed fund to execute its operation. This definition clearly pointed out that increases in borrowed money increases the financial leverage (gearing ratio), with a corresponding increase in finance charges and the risk of bankruptcy. Financial leverage enhances the value of firms by yielding tax shield benefits. Leverage decision of a firm is a significant managerial decision because it may influence the shareholder's value, risk and the market value of the firm (Onyekwelu, Nwajei & Ugwu, 2017). More also, food and beverages firms with more leverage attract severer monitoring exercised by debt holders over managerial activities, which in the long-run reduces agency costs and improves firm's financial results (Yassin, 2021).

However, Uzoka, Ifurueze and Anichebe (2020) argued that high leverage may be beneficial in boom periods; and it may cause serious cash flow problems in recession periods, because there might not be enough sales revenue to cover the interest payment. In other words, leverage can only contribute positively to firm performance if there is relatively small amount of cost yield and a relatively high level of values since the use of leverage requires the payment of interest and repayment of principal amount of the debt. The use of leverage can increase the firms' likelihood of bankruptcy especially in an unstable economy such as that of Nigeria.

2.2 Theoretical Review

2.2.1 Resource Based Theory

The resource based theory was originally propounded by Penrose in 1959 and was extensively developed by Wernerfelt in the year 1984. Resource-based theory (RBT) was composed as a method of analyzing and identifying a firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities, and intangibles as an organization (Dioha, Ahmed & Okpanachi, 2018). The assumption of the theory is that a firm is a bundle of resources which are combined to create organizational capabilities which it can use to earn above average profitability (Kaguri, 2013). Each firm develops competencies from these resources, and when they are well developed, these become the source of the firm's competitive advantages. The theory argues that it is the duty of firm managers to exploit these resources by using administrative frameworks that effectively and efficiently combine firm resources for optimal productivity.

The proponents of resource based theory resource based theory opine that firms can easily gain competitive advantage and superior performance through effective utilization of their internal resources such as firm size, firm leverage, firm age, capital expenditure or management efficiency, etc. (Kazeem, 2015). The manner in which firms possess and utilize their individual pool of resources accounts for the differences in the performance of the firms in and across the industry. Based on RBV, the expectation is that the size, age and leverage of the firm place the firm in a better position to increase its financial performance as a result of its access to resources and benefit from



economies of scale and experience. Resource based theory is relevant to the study because it shows that the financial performance of firms which is a reflection of how effective and efficient the management is in making use of firms' available resources is foremost revealed through some firm attributes such as firm size, firm age and firm leverage (Abdullahi, Enemali, Duna & Ado, 2019). Therefore, the study is theoretically anchored on resource based theory.

2.3 Empirical Review

Goodluck, Okoye and Nwoye (2022) examined the effect of firm characteristics on business performance of listed manufacturing companies in Nigeria using 46 companies from 2009 to 2020. The results showed that firm size, leverage and liquidity have negative effect on return on asset while only debt-equity has positive effect even though all effect were significant. Mwendwa and Gatauwa (2022) examined the effects of firm characteristics on the financial performance of manufacturing and allied and construction companies listed on Nairobi Securities Exchange, Kenya using 14 sampled firms from 2014 to 2018. It was found assets structure negatively affects the financial performance of manufacturing and allied firms but no significant positive correlation with the firms' financial performance of the construction and allied firms. Adekoya, Nwaobia and

Siyanbola (2022) investigated the effect of firm characteristics on the financial value of pension fund administrators in Nigeria using fifteen (15) pension fund administrators from 2011-2020. The multiple regression carried out showed that firm characteristics jointly exerted significant impact on net asset value per unit of pension fund administrators. Hossain, Azam, Uddin and Shovon (2022) explored the relationship between firm leverage and profitability of food industry in Dhaka Stock Exchange from 2015 to 2019. The study using panel data regression found that short term leverage has a significant negative impact on ROA and a strong positive impact on ROE of the listed food and allied firms.

Lorrana, Correio and Correio (2022) examined the effect of firm-intrinsic factors on the performance of Brics companies using a sample size of 323 from 2014 to 2019. The panel data regression technique used to validate the hypotheses of the study indicated positive relationship between leverage and stock market performance; firm liquidity has a negative and significant 1% relationship with the stock market performance.

Opoku-Asante, Winful, Sharifzadeh and Neubert (2022) investigated the relationship between firm leverage and financial performance of Firms using 425 cross-sectional firm-year samples from firms in Ghana and Nigeria from 2014 to 2019. Analysis was carried out using regression analysis which suggested a significant negative relationship between firm leverage and financial performance. Other studies reviewed include: Dodoo, Donkor and Appiah (2021); Kim, Duvernay, and Thanh (2021); Njiraini, Mwangi, Kaijage and Ganesh (2021); Kamau, Olweny and Muturi (2021); Okechukwu (2021); Olowofela, Tonade and Lisoyi (2021); Muema and Abdul (2021); Boshnak, Basheikh and Basaif (2021); Mbonu and Amahalu (2021); Dahmash, Salamat, Masadeh and Alshurafat (2021); Msomi and Nyide (2021); Riaz, Jinghong and Akhtar (2021); Yassin (2021); Ali, Yassin and Ramia (2020); Opeyemi, Popoola and Yahaya (2020); Uzoka, Ifurueze and Anichebe (2020); Nyabaga and Wepukhulu (2020); Kartiningsih and Daryanto (2020); Efuntade and Akinola (2020); Abdulkarim, Mohammed, Mohammed and Abubakar (2019); Abdullahi, Enemali, Duna and Ado (2019); Akuno and Kariuku (2019); Shuaibu, Ali and Amin (2019); Odusanya and Yinusa (2018); Irom, Okpanachi, Ahmed and Tope (2018); Dioha, Ahmed and Okpanachi (2018).

3. MATERIAL AND METHOD

For the purpose of this study, *Ex-post facto* research design was adopted to address the research problem. An *Ex-post facto* research design is used to examine the statistical association or relationship between two or more variables that took place in the past (Saunders, Lewis & Thornhill, 2007). The present study investigates how firm characteristics are associated with financial

performance of food and beverages firms from 2012 to 2021. *Ex-post facto* research design is therefore considered appropriate for this study because it allows for testing of historical relationships between or among variables that already occurred and making of predictions regarding these relationships (Cooper & Schlinder, 2001). Purposive sampling technique was used to select a sample of five (5) food and beverages firms for the study as shown in the table below.

Table 1: Presentation of the Sample Size of the Study

1. Cadbury Nigeria Plc.	Established in 1965
2. Dangote Sugar Refinery Plc.	Established in 2005
3. Guinness Nig. Plc	Established in 1950
4. Nestle Nigeria Plc.	Established in 1969
5. Nigerian Breweries Plc.	Established in 1946

Source: Researcher’s Compilation, 2022

This secondary data for the study were extracted from published annual reports and accounts of the five (5) food and beverages firms covering a period of ten (10) years (2012 – 2021). Descriptive statistics such as mean, standard deviation, minimum and maximum values were used to organize, summarize and describe the sample data. Panel least square regression was used to model the effect of the explanatory variables (firm age, firm size and firm leverage) on the response variable (return on asset).

3.1 Model Specifications

The regression model specified below was used in conducting the inferential test in the study.

$$ROA_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 AGE_{it} + \beta_3 LEV_{it} + \varepsilon \quad \text{eq (i)}$$

Where;

ROA denote return on asset for firm *i* in period *t*

FSIZE_{it} denotes firm size for firm *i* in period *t*

AGE_{it} denotes firm age for firm *i* in period *t*

LEV_{it} denotes leverage for firm *i* in period *t*

β₀ denotes the constant value of ROA

β₁₋₃ denote coefficients of the explanatory variables

ε denotes the error term

the variable measurements are shown in Table 2.

Table 2 Operationalization of Variables

Variable	Definition	Type of Variables	Measurement
1. ROA	Return on Asset	Dependent	$\frac{\text{Earnings After Tax}}{\text{Total Assets}}$
2. FSIZE	Firm Size	Independent	Natural Logarithm of Total Assets
3. AGE	Firm Age	Independent	Number of Years the firm has existed
4. LEV	Firm Leverage	Independent	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$

Source: Researcher’s Compilation, 2022



4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Statistical Analysis of the Data

The summary statistics of the explained and the explanatory variables are presented in Table 3 where minimum, maximum, mean, standard deviation, kurtosis, Jarque Bera statistics, and skewness of the data for the variables in the study are described.

Table 3 Descriptive Statistical Analysis

	ROA	FSIZE	AGE	LEV
Mean	0.097016	8.116960	49.50000	0.582204
Median	0.092123	8.165602	52.00000	0.573297
Maximum	0.264935	8.683623	75.00000	0.931091
Minimum	-0.087265	7.439775	7.000000	0.377658
Std. Dev.	0.076830	0.365269	21.30081	0.121543
Skewness	0.194453	-0.511089	-0.868112	0.544807
Kurtosis	2.564116	2.329563	2.500367	3.508007
Jarque-Bera	0.710922	3.113194	6.800218	3.011105
Probability	0.700850	0.210852	0.033370	0.221895
Sum	4.850797	405.8480	2475.000	29.11022
Sum Sq. Dev.	0.289241	6.537668	22232.50	0.723862
Observations	50	50	50	50

Source: E-View 10 Output (2022)

The average ROA as shown in Table 3 was 9.7% with a standard deviation of 0.076830. The maximum ROA was 0.264935 while the lowest ROA was -0.087265. The skewness, kurtosis and Jarque-Bera probability for ROA suggested that there are no outliers in the distribution of ROA. In order words, the financial performance of the sampled firms from 2012 to 2021 as measured by ROA was homogenous. This conclusion was drawn from the Jarque-Bera probability for ROA which was 0.700850, the Skewness value for ROA which was nearly 0 and the Kurtosis value for ROA which was approximately 3.

The average firm size as shown in Table 3 was 8.116960 with a standard deviation of 0.365269. The maximum firm size was 8.683623 while the lowest firm size was 7.439775. The skewness, kurtosis and Jarque-Bera probability for firm size suggested that there are no outliers in the distribution of firm size. In order words, the firm size of the sampled firms from 2012 to 2021 as measured by natural log of total assets was homogenous. This conclusion was drawn from the Jarque-Bera probability for firm size which was 0.210852, the Skewness value for firm size which was nearly 0 and the Kurtosis value for firm size which was 2.34.

The average firm age as shown in Table 3 was 49.5 with a standard deviation of 21.30081. The maximum firm age was 75 while the lowest firm age was 7. The ages of the firms were not normally distributed as was shown by the Jarque-Bera probability of 0.033370. Firm age deviated significantly from a normal distribution since the probability value of 0.033370 is less than 0.05. The average firm leverage as shown in Table 3 was 58.22% with a standard deviation of 0.121543. The maximum firm leverage was 0.931091 while the lowest firm leverage was 0.377658. The skewness, kurtosis and Jarque-Bera probability for firm leverage suggested that there are no outliers in the distribution of firm leverage. In order words, the financial leverage of the sampled firms from 2012 to 2021 as measured by debt to asset ratio was homogenous. This conclusion was drawn from the Jarque-Bera probability for firm leverage which was 0.221895, the Skewness value for firm leverage which tended towards 0 and the Kurtosis value for firm leverage which tended towards 3.

4.1.2 Hausman Test

Hausman test is necessary for the study because it determines which panel least square technique to choose. The data collected have both cross-sectional and time series attributes. Therefore, either of Random Effect Model or Fixed Effect Model is required to take into consideration the temporal and spatial dimension inherent in the data. Table 4 shows the result of the test.

Table 4 Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	38.348723	3	0.0000

Source: E-View 10 Output (2022)

The outcome of the Hausman test above suggests that the most appropriate model is Fixed Effect model. This is because the χ^2 value of this test is 38.348723 which is significant. Therefore, Hausman specification test proved that fixed effect model is the more appropriate for study. Therefore, Panel Fixed Effect Regression was deployed to determine the effect of firm characteristics on the financial performance of listed food and beverages firms in Nigeria

4.2 Test of Hypotheses

The null hypotheses of the study affirmed that firm size, firm age and firm leverage have no significant effect on the ROA of listed food and beverages firms in Nigeria. The Hausman specification test conducted suggested that the Fixed Effect estimation approach was most appropriate in examining the regression model formulated for the study. Therefore, the formulated multiple regression model below was analysed using Fixed Effect Panel Least Square model.

$$ROA_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 AGE_{it} + \beta_3 LEV_{it} + \varepsilon$$

The result of the regression estimation is presented in Table 5.

Table 5 OLS Test for Second Hypothesis

Dependent Variable: ROA

Method: Panel Least Squares

Date: 11/20/22 Time: 01:15

Sample: 2012 2021

Periods included: 10

Cross-sections included: 5

Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FSIZE	0.135387	0.070626	1.916957	0.0621
AGE	-0.013270	0.003010	-4.409094	0.0001
LEV	-0.169741	0.081491	-2.082947	0.0434
C	-0.246209	0.466331	-0.527970	0.6003

Effects Specification

Cross-section fixed (dummy variables)



R-squared	0.751212	Mean dependent var	0.097016
Adjusted R-squared	0.709747	S.D. dependent var	0.076830
S.E. of regression	0.041392	Akaike info criterion	-3.385796
Sum squared resid	0.071960	Schwarz criterion	-3.079873
Log likelihood	92.64491	Hannan-Quinn criter.	-3.269299
F-statistic	18.11693	Durbin-Watson stat	1.718834
Prob(F-statistic)	0.000000		

Source: E-View 10 Output (2022)

The result of the Fixed Effect Panel least squares regression estimates for the research model revealed that the coefficient of determination or R – square is 0.751212, an indication that firm size, firm age and firm leverage jointly accounted for 75.12% changes in the ROA of listed food and beverages firms in Nigeria. Using the adjusted R-squared of 0.709747, the precise variation in ROA explained by the predictor variables is 70.97%. The F-statistic = 18.11693 and its corresponding Prob(F-statistic) = 0.0000, an indication that the model which regressed ROA on firm size, firm age and firm leverage is accurate, reliable and significant. Therefore, ROA of listed food and beverages firms can be predicted using a joint effect of firm size, firm age and firm leverage at 5% level of significance.

4.2.1 Hypothesis One

H01: Firm size has no significant effect on the return on assets of listed food and beverages firms in Nigeria.

From Table 5 above, the reported regression coefficient value of 0.135387 for firm size indicates that firm size has a positive effect on ROA. It equally suggests that a unit increase in firm size will lead to 0.135387 unit increase in ROA. Firm size has t-statistics value of 1.916957 with an associated probability of 0.0621 that is insignificant at 5% level.

4.2.1.1 Decision: Since the absolute value of the t-statistic is less than 2 and the probability of t-statistic is greater than 0.05, the study therefore concludes that Firm size has no significant but positive effect on the return on assets of listed food and beverages firms in Nigeria (β1 = 0.135387, p-value = 0.0621).

Thus, increasing firm size adds non-significantly to the ROA of listed food and beverages firms in Nigeria. This could be because firms with large size tend to have more competitive advantage over small firms in that such large-sized firms have bigger market share that enables them make more profit and create bigger value for the shareholders. This result agreed with those of Dodoo, Donkor and Appiah (2021); Boshnak, Basheikh and Basaif (2021); Dahmash, Salamat, Masadeh and Alshurafat (2021) but disagreed with those of Goodluck, Okoye and Nwoye (2022).

4.2.2 Hypothesis Two

H02: Firm age has no significant effect on the return on assets of listed food and beverages firms in Nigeria.

Table 5 shows that the reported regression coefficient value of -0.013270 for firm age indicates that firm age has a negative effect on ROA. It equally suggests that a unit increase in firm age will lead to 0.013270 unit decrease in ROA. Firm age has t-statistics value of -4.409094 with an associated probability of 0.0001 that is significant at 5% level.

4.2.2.1 Decision: Because the absolute value of the t-statistic is greater than 2 and the probability of t-statistic is less than 0.05, it was concluded that Firm age has a significant negative effect on the return on assets of listed food and beverages firms in Nigeria (β2 = -0.013270, p-value = 0.0001).

Thus, increasing firm age significantly reduces the ROA of listed food and beverages firms in Nigeria. This could be because older firms stand the chance of not being flexible enough to make



rapid adjustment that would have reduced barriers to innovation. The rigidity of older food and beverages firms towards adapting with the rapid changes in its business environment makes firm age to have a negative effect on the financial performance of the firms. Irom, Okpanachi, Ahmed and Tope (2018) also found a negative effect of firm age on financial performance but the finding of this study negated those of Kartiningasih and Daryanto (2020) and Abdullahi, Enemali, Duna and Ado (2019).

4.2.3 Hypothesis Three

H₀₃: Firm leverage has no significant effect on the return on assets of listed food and beverages firms in Nigeria.

The reported regression coefficient value of -0.169741 for firm leverage indicates that firm leverage has a negative effect on ROA. It equally suggests that a unit increase in firm leverage will lead to 0.169741 unit decrease in ROA. Firm leverage has t-statistics value of -2.082947 with an associated probability of 0.0434 that is significant at 5% level.

4.2.3.3 Decision: Since the absolute value of the t-statistic is greater than 2 and the probability of t-statistic is less than 0.05. the study therefore concludes that *Firm leverage has a significant negative effect on the return on assets of listed food and beverages firms in Nigeria* ($\beta_3 = -0.169741$, p -value = 0.0434).

Thus, increasing firm age significantly reduces the ROA of listed food and beverages firms in Nigeria. Leverage negatively influences firm performance when there is relative huge amount of cost yield or finance costs since the use of leverage requires the payment of interest and repayment of principal amount of the debt. This finding is in line with the results of Goodluck, Okoye and Nwoye (2022); Mwendwa and Gatauwa (2022); Opoku-Asante, Winful, Sharifzadeh and Neubert (2022); Boshnak, Basheikh and Basaif (2021) but countered the results found by Lorrana, Correio and Correio (2022) and Dahmash, Salamat, Masadeh and Alshurafat (2021).

CONCLUSION AND RECOMMENDATIONS

The major argument supported in the study is that firms with large size also have larger pool of resources that allows them the capacity to utilize every chances that require large capital base for the purpose of increasing their firm performance. On the other hand, there is a tendency for aged firms to be used to static processes and therefore be reluctant towards changing their production and marketing techniques. To cap it up, food and beverages firms with high debt profile also pay high finance costs which directly reduces the earnings of the firms. These anomalies above make the earning capacity of food and beverages firms decline.

Sound firm characteristics basically show the extent of financial performance of firms because they are indices of how effective and efficient the management is in making use of firms' available. The characteristics of a food and beverage firm, particularly their size, age and leverage, remains the primary concern of this study because of its implications on the financial health and ultimately the survival of the firm. The age of a firm can influence its financial results on the belief that a long-established company would have more experience in carrying out business activities in its industrial sector and it is better known to the broader community rather than newcomers. Larger firms are believed to have more competitive advantage over small firms since they tend to have bigger market share that enables them make more profit and create bigger value for the shareholders. On this basis, the study recommends the following:

- i. Food and beverages firms should increase their asset base in order to have the wherewithal to commit their available resources to more investment opportunities that will enable the firms generate stronger competitive capability.



- ii. Older firms should where necessary change their systems to cope with the new environmental conditions, innovation and advancement in order to avoid being rigid that worsens the firms' financial performance.
- iii. There should be a well-planned capital structure in the food and beverages firms in order to prevent the firm from the risk of insolvency, increase the value of a business, maximize shareholders' wealth, and reduce the cost of capital.

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