

**EFFECT OF FIRM PRODUCTIVITY ON FINANCIAL
PERFORMANCE OF FOODS AND BEVERAGES MANUFACTURING
FIRMS IN NIGERIA**

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ABSTRACT

The study investigated the effect of firm productivity on the financial performance of food and beverage manufacturing firms in Nigeria from 2011 to 2020. The specific objectives of the study are: to ascertain the effect of sales growth, sales per employee, and profit per employee on return on assets of foods and beverage manufacturing firms in Nigeria. A sample of eight (8) firms was selected from the fifteen (15) food and beverage manufacturing firms listed on Nigeria Stock Exchange during the period. The data collected from the selected firms were analysed using multiple regression analysis and t-statistics. Results from the study showed that the effect of all the independent variables (sales growth, sales per employee and profit per employee) on the returns on assets of the foods and beverage manufacturing firms are positive and statistically significant. The implication of these findings is that as sales growth, sales per employee and profit per employee increase, the return on assets of the firms also increases and vice versa. Based on these findings the study recommended that the managers of foods and beverage manufacturing firms in Nigeria should increase their sales growth by increasing sales revenue in order to increase return on assets. The study also recommended that the managers should produce high-quality goods, expand their firms' distribution channels, and engage in advertising and sales promotion so as to increase sales per employee and return on assets. The study further recommended that the firm managers should increase profit per employee to increase return on assets and maximize wealth for shareholders of the firms. An increase in sales revenue, cost reduction, and engagement of a reasonable number of staff are some of the ways to increase profit per employee.

Keywords: Firm Productivity, Financial Performance, Food and Beverages firms, Nigeria

1.0 INTRODUCTION

1.1 Background of the Study

Each firm both on the national and international market must face competition. To be sustainably successful it is decisive to be efficient and productive with respect to the manufacturing process, the administration, in all the operative and none operative business units and in the entire organization. Any long-term success of a firm can only be achieved by

implementing sustainable productivity and efficiency in each of the individual organizational process, particularly, if the firm is in the manufacturing or service industry (Brem, 2013). Being able to measure productivity and understand why it does or does not occur is of grave importance to firms. Also understanding why productivity growth occurs affords firm management the ability to make decisions that foster future growth potential (Sharma et al, 2007)

Marc (2021) defined productivity as a measure of economic or business performance that indicates how efficiently people, firms, industries and whole economies convert inputs, such as labor and capital, into outputs, such as goods or services. Productivity can be measured at various levels, including, personal productivity, employees or workforce productivity, sector productivity, team or departmental productivity and national productivity. Nguyen, Nguyen, Ngo and Nguyen (2019) also describes productivity is also seen as a measure of efficient utilization of organizational resources which shows the efficiency in which inputs are converted to useful outputs.

Ciara (2018) asserted that productivity benefits are obvious and widely felt when implemented in a business environment. Some of the benefits were identified as, increase in profitability, lowering of operational costs, optimizing resources, improving customer service, seizing business growth opportunities, reducing waste and environmental impact, improving competitiveness, reducing employee turnover, enhancing employees' well-being and increasing employees and customers' engagement.

Kan (2018) stated that if an organization experiences a higher level of productivity, then profitability should increase for the following reasons, one, a reduction of cost per capita results in a greater profit per capita. Two, higher productivity reduces waste, reducing the resources required to produce one unit. Three, attaining a lower cost per unit and higher productivity levels can attract more contracts.

Havnes and Senneseth, (2015) described financial performance as the measurement of what have been achieved by the company which shows good condition for certain period of time. The purpose of measuring financial performance is to obtain useful information relating to flow of funds, the use of funds, effectiveness, and efficiency. Besides, the information can also motivate the manager to make the best decision. Firm's success is basically explained by its financial performance over a period of time.

Hagedoorn and Clodt (2003) stated that financial performance emphasizes on variables related directly to financial report. It is often expressed in terms of growth of sales, employment, stocks prices. Golafzani and Ebrahim (2016) stated that finding a measurement for performance of firms enables comparison of performance over different time periods and across firms. However, specific measurements with the ability to measure every performance aspect have yet to be proposed to date. There are many ways of measuring financial performance, the most important and widely used include: Return on assets, return on equity, return on investment, return on capital employed, profit after tax), gross profit margin, earnings per share, market price per share, dividend yield, price earnings ratio and so on. This study adopted return on assets as a measure for financial performance.

1.2 Statement of the Problem

The benefit from increased firm productivity cannot be over-emphasized. Some of the benefits include, increase in profitability, lowering of operational costs, optimizing resources, improving customer service, seizing business growth opportunity, reducing waste and environmental impact; Improving competitiveness, reducing employee turnover, enhancing employees' wellbeing and increasing employees and customers' engagement. Working long hours does not translate to productivity. Thus, firms that reward people for merely looking busy may not achieve high productivity. Productivity is measure with variables such as outputs, customers' satisfaction, sales growth, employees turnover rate, revenue per employee, profit per employee among others.

Despite the usefulness of productivity variables in business decisions, productivity measures are scarcely used in the assessments of the firm performance because firm managers and accountants' main focus is on profitability rather than productivity of firms. This is also true of Nigeria manufacturing firm where some manufacturing firms has liquidated and exited the market as a result of faulty business decisions that were not anchored on firm productivity variables. This development prompted the present study to investigate the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria.

A review of empirical literatures indicates that different variables have been used in the past as measures of firm productivity. For instance, Bahman and Fakhroddin (2012) used human capital efficiency and capital employed efficiency to study the impact of firm productivity on loss of unprofitable firms in India. In Vietnam, Nguyen, Nguyen, Ngo and Nguyen (2019) used labor productivity as independent variable to analyze the relationship between productivity and firm's performance. However, Agiomirgianakis, Magoutas and Sfakianakis (2013) studied Greek manufacturing firms and identified employee productivity, firm size and firm age as measures of firm productivity. Similarly, Marc (2021) was also of the view that productivity can be measured through revenue (sales) per employee, number of units produced, customers' satisfaction, downtimes, employees turnover rate, labour utilization rate, gross profit margin among others. This study, however, adopted sales growth, sales per employee and profit per employee as measures of firm productivity to evaluate the effect of firm productivity on financial performance of foods and beverage manufacturing firms listed in Nigeria.

1.3 Objectives of the Study

The main objective of the study is to investigate the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria. The specific objectives of this study were to:

- i. Examine the effect of sales growth on return on assets of foods and beverage manufacturing firms in Nigeria.
- ii. Explore the effect of sales per employee on return on assets of foods and beverage manufacturing firms in Nigeria.
- iii. Ascertain the effect of profit per employee on return on assets of foods and beverage manufacturing firms in Nigeria

1.4 Research Questions

The following research questions were examined in line with the specific objectives of the study:

- i. How does sales growth affect return on assets of foods and beverage manufacturing firms in Nigeria?
- ii. To what extent do sales per employee affect return on assets of foods and beverage manufacturing firms in Nigeria?
- iii. What is the effect of profit per employee on return on assets of foods and beverage manufacturing firms in Nigeria?

1.5 Statement of the Hypotheses

The following hypotheses were formulated to address the research questions:

- i. Sales growth does not significantly affect return on assets of foods and beverage manufacturing firms in Nigeria.
- ii. Sales per employee do not significantly affect return on assets of foods and beverage manufacturing firms in Nigeria.
- iii. Profit per employee does not significantly influence return on assets of foods and beverage manufacturing firms in Nigeria.

1.6 Significance of the Study

This study will be of significance to foods and beverage firms' manufacturing managers in making business decisions. It will among others, enable the firm managers appreciate and measure firm productivity and understand why it does or does not occur. It will also enable the firm managers understand productivity variables and their importance and usefulness in business decision making process.

Banks and other financial institutions will equally find the study of importance in evaluating manufacturing firms for credit facility. Manufacturing firms with positive sales growth, increase sales per employee and profit per employee is likely to have good cash flow that will enable them repay loans as at and when due. In view of this, the study will guide the banks and other fund providers in assessing the credit worthiness of the firms.

The study will also be of importance to the investors in foods and beverage manufacturing sub-sector of the Nigeria economy. Knowing that increased productivity translates to good financial performance, investors will be attracted to invest in those firms that incorporate productivity variables such as sales growth, sales per employee and profit per employee in their business decisions making.

Finally, students of higher institutions of learning and indeed other academic researchers will find the study of great importance in conducting further studies in related areas of studies. This study will provide the necessary guide and rich literature materials that may enable the researchers carry and extend the frontier of knowledge in related areas of studies.

1.7 Scope of the Study

The scope of the study is the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria for 10 years period (2011-2020). A sample of eight (8) firms was selected from the fifteen (15) foods and beverage manufacturing firms listed on the Nigeria Stock Exchange during the period. Disclosure of the required variables was the criteria for this selection. Sales growth, sales per employee and profit per employee are the independent variables and measures of firm productivity while return on assets is the dependent variable and measure of financial performance. The eight (8) firms selected for the study are: Guinness Nigeria Plc, Nigeria Brewery Plc, Cadbury Nigeria Plc, Unilever Nigeria Plc, Nestle Nigeria Plc, UAC Nigeria Plc, Dangote Sugar Nigeria Plc and Honeywell Flour Mill Nigeria Plc.

2.0 REVIEW OF RELATED LITERATURES

2.1 Conceptual Review

2.1.1 Firm Productivity

Mathis and John (2003) defined productivity as a measure of the quantity and quality of work done, considering the cost of the resources used. The more productive an organization is, the better its competitive advantage. This is because of the efficiency of the resources that have been used. Jahchan (2017) equally described productivity as the efficient use of resources, labour, capital, land, materials, energy, information, in the production of various goods and services. According to him, higher productivity means accomplishing more with the same amount of resources or achieving higher output in terms of volume and quality from the same input. Productivity is usually expressed as $\text{output/Input} = \text{productivity}$.

Marc (2021) stated that productivity is important to a firm's profitability and ability to thrive. Too many meetings, too many manual processes and industry-lagging technology were identified as obstacles to improving firm productivity. Identifying and tracking productivity metrics together with performance management software can help firms manage and improve workforce productivity.

Lake (2007) asserted that employee productivity may be hard to measure, but it has a direct effect on a company's profits. Yet, there are several factors on the job that help maximize what an employee does on the job. In view of this, Suganya (2011) stated that productivity can be improved through training and manpower development, making the employees know and properly understand the productivity evaluation methods, providing incentives and appraisals to efficient workers, enhancing discipline measures in the work place, identifying the skills of each employees, giving appropriate feedback to the employees without discouraging them, emphasizing on the positive points to develop productive work and providing continuous training to the employees on multidimensional work. Behnam (2014) also suggested that firms can improve productivity by providing training and development to the employees. Investments in training employees in problem solving, decision-making, teamwork, and interpersonal relations result improves firm productivity. There are many variables that firms use in measuring productivity. This study, however, adopted sales growth, sales per employee and profit per employee as the productivity variables.

2.1.2 Sales Growth

Juniarti (2014) defined sales growth as an increase in the number of sales or sales value from year to year or from time to time. Sales growth is an indicator of demand and competitiveness of the firms in an industry. Klipfolio (2017) also defined sales growth as a metric that measures the ability of the sales team to increase revenue over a fixed period of time. Sales growth has direct effect on revenue and profitability and thus an important indicator used by management in decision making and policy formulation and implementation. Febriyanto (2018) also described a firm's sales growth as an increase in sales from year to year, or as an indicator of increased market share of the firm. For firms that have high sales growth, the firms also have a good growth. The implication of sales growth is that it could be interpreted positively by investors as the firm has good prospects for the future, thereby increasing the value of the firm.

Sari, Miyasto and Mawardi (2017) stated that sales are the activities of a firm in selling its products or services while sales growth is the number of sales from year to year. A positive sales growth means that there is an increase in sales from the previous year. Similarly, negative sales growth implies sales decline from the previous year. In the calculation of the firm's profit/loss, sales are in the top spot in the calculation, hence it is also called top line, then various expenses, including taxes are deducted to generate net income. The greater the firm's sales the better the firm is able to convert its products or services into cash from its sales activities.

Klipfolio (2017) stated that sales ensure the growth and sustainability of a business. When profits dips, the sales force is under pressure to deliver results. Conversely, a high percentage of sales growth is a good prospect for all stakeholders such as executives, board of directors, shareholders, employees and even the customers.

Sales growth can be determined using the following formula:

$$\frac{\text{Sales for the current period} - \text{Sales for the previous period}}{\text{Sales for the previous period}} \times 100$$

2.1.3 Sales per Employee

Kenton (2020) defined revenue or sales per employee as an efficiency ratio used to determine the revenue generated per individual working at a firm. The revenue per employee ratio is important for determining the efficiency and productivity of the average employee of a firm. Krekel, Ward and De-Neve (2019) stated that measures of employee productivity include mostly financial measures such as revenue or sales per person, growth in revenue or sales over time, quantity per time period, enrolments in programs, labour hours, costs to the budget, cross-sells, or performance ratings. Kenton (2020) states that a sale per employee is calculated as a firm's total revenue divided by its current number of employees. A sale per employee is an important ratio that roughly measures how much money each employee generates for the firm.

Prakash, Jha, Prasad and Singh (2017) stated that firms often employ a bundle of resources or input such as labour, capital, material, energy and others to produce output, therefore,

partial productivity indicate the ratio of total output to one class of input. In view of this, labour productivity is computed by dividing total sales with total number of employee. Kenton (2020) stated that sales per employee are calculated as a firm's total revenue divided by its current number of employees. A sale per employee is an important ratio that roughly measures how much money each employee generates for the firm. The sales per-employee ratio is most useful when looking at historical changes in a firm's own ratio or when comparing it against that of other companies in the same industry as part of a fundamental analysis. This is usually expressed as:

$$\text{Sales per Employee} = \frac{\text{Total Sales}}{\text{Full-Time Employees}}$$

2.1.4 Profit per Employee

Klipfolio (2019) defined profit per employee, also referred to as net income per employee, as a productivity and efficiency ratio that tells how much profit each of employees brings into the firm over the course of a given period. Klipfolio (2019) also defined profit per employee also referred to as net income per employee as an efficiency ratio that tells how much profit each of employee brings into the firm over the course of a given period. Theoretically, the higher the net income per employee, the more efficient a firm is. This is calculated as net income divided by the total number of employees in the firm, unlike revenue per employee and expenses per employee, this ratio considers both income and costs. This makes it a good summary metric but hides some details that are exposed by the other two profit indicators. Because labor requirements vary drastically from industry to industry, profit-per-employee formulas are usually used to compare businesses within the same industry. One of the factors that could influence profit per employee is employee turnover which can have a dramatic effect on net income per employee. The age of the firm is also another factor that could influence profit per employee. Younger firms tend to have lower revenues and profit margins, particularly in the very early stage, which means that their net income per employee ratio is likely to be smaller than that of an older firm.

Bryan (2021) identified two effective ways to increase profit per employee. The first is reducing a firm's workforce which typically results in an increase in the profit per employee ratio. However, this is not always a positive outcome, because if the offloaded employees were generating more income than the capital invested in them, their absence can cause a drop in total profits. In this situation, the only way to improve the overall profits is by hiring new personnel that can produce a higher profit per employee. The second is by replacing capital with labor costs. Basing a firm's growth on employment rather than the use of capital can also increase its profit per employee ratio. While capital investment depreciates over time, investing in human resources is likely to produce a return on investment long into the future, as quality employees are arguably one of the scarcest resources for companies. This is usually calculated as:

$$\text{Profit per Employee} = \frac{\text{Net Profit}}{\text{Full-Time Employees}}$$

2.1.5 Financial Performance

Tangen (2005) described performance as an umbrella term for all concepts that consider the success of a firm and its activities. Performance can refer to actual results or outputs of certain activities, how an activity is carried out, or an ability to achieve results. Atkinson (2012) also defines performance as the achievement of results ensuring the delivery of desirable outcomes for a firm stakeholder. Njihia et al (2013) stated that performance measurement is one of the tools which help firm managers in monitoring performance, identifying the areas that need attention, enhancing motivation, improve communication and strengthen accountability.

Kiragu (2009) highlighted performance in terms of four perspectives which are the financial, customer, internal processes and innovativeness. For the purpose of that study, it considered financial performance.

Asheghian (2012) asserted that financial performance is defined in terms of profitability, debt management, and asset management. Debt management is measured by total debt to equity and long-term debt to equity. Profitability is measured by return on equity, return on assets, and return on investment. Asset management is measured by receivable turnover, total asset turnover, and inventory turnover. Havnes and Senneseth (2001) stated that financial performance emphasizes on variables related directly to financial report and it is often expressed in terms of growth of sales, employment, stocks prices. Financial performance enables comparison of the performance of firms over different period of time and across firms.

Ebrahim, Abdullah and Faudziah (2014) identified the most important and widely used financial performance ratios to include: return on assets, return on equity, return on investment, return on capital employed among other indicators. However, there is no specific financial performance measurement that has the ability to measure every performance of a firm. This study however, adopted return on assets as a measure of financial performance.

2.1.6 Return on Assets

Haniffa and Huduib (2006) described return on assets as a profitability indicator that measures how profitable a firm is relative to its total assets. Return on assets which is usually stated as a percentage gives an idea as to how efficiently firm management is utilizing the total assets at its disposal to generate earnings for the firm. Nixon and Stoeberl, (2011) stated that profitability measure is the ultimate test of managements operating effectiveness and success of a firm. Return on asset is one of the best measurements of efficiency in order to assess the firm's performance. It had been widely used as a measurement of profitability and it reflects the ability of management to generate income on a given amount of total assets. It is one of the popular profitability measures, which is a ratio between earnings after tax and total assets. Klapper and Love (2002) also stated that return on assets, is an accounting ratios that indicates how firm management is using the total assets (or resources) at its disposal to generate income for the firm.

Siminica, Circiumaru and Simion (2012) opined that firm managers are concerned with the efficiency of asset utilization in an effort to improve the performance of their firms. This is in the light of the rising pressure exercised by shareholders and the limited funds available make the firms to search the best ways to increase the efficiency of the firm assets, in order to

maintain competitiveness. Return on asset is the ratio that gives the managers and firm owners an idea as to the extent that the managers have gone in achieving efficiency in assets utilization.

Haniffa and Huduib (2006) stated that return on assets is calculated by dividing a firm's annual earnings by its total assets. Return on assets measurement is such that the higher the return on assets, the more effective management uses the firm's total assets to the advantage of the shareholders.

2. 2 Theoretical Review

The Needs Theory developed by Abraham Maslow in 1943 and also Labor Theory of Value propounded by Adam Smith, David Ricardo and Karl Marx in the 19th century were used to support the study.

2.2.1 Needs-Based Motivation Theory

This theory was developed by Abraham Maslow in 1943. The theory is grounded on the understanding that motivation arises from an individual's desire to fulfill or achieve a need. Human beings are motivated by unsatisfied needs, and certain lower needs must be satisfied before higher needs can be satisfied which will ultimately influence productivity and performance. Generally, motivation can be regarded as the desire to achieve a goal, coupled with the energy, determination and opportunity to achieve it. The foundation of the need theory is that people are motivated to attain outcome at work that will satisfy their needs. It matches the expectancy theory by exploring the depth at which outcomes motivate people to contribute valuable inputs to a job and perform at superior levels. A manager should establish what needs the person is trying to satisfy at work and ensure that the person receives outcomes that help to satisfy those needs when the person performs at a high level and helps the organization to improve its performance.

The very basic human needs, signified by food, water, shelter and safety, are deemed essential for human existence. Higher-order needs are those linked with social activities, esteem building, and self-actualization or constant self-improvement. Each of these needs operates at all times, although one deficient set dominates the individual at any one time and circumstance. The motivation felt by humans to achieve these needs is either derived from internal or external factors. People who experience internal motivation are shaped by dynamics that cause a sense of accomplishment and pleasure, while externally motivated people are commonly influenced by factors controlled by others, such as money and praise. Maslow's hierarchy of need theory is usually showed in a pyramid, with the basic needs at the bottom and the higher needs at the top.

2.2.2 Labor Theory of Value

This Theory was put forward by Adam Smith, David Ricardo, and Karl Marx in the 19th century. The labor theory of value was an early attempt by economists to explain why goods were exchanged for certain relative prices on the market. The theory suggested that the value of a commodity was determined by and could be measured objectively by the average number of labor hours necessary to produce the goods or services. The theory argued that the

amount of labor that goes into producing an economic good is the source of that good's value. In the labor theory of value, relative prices between goods are explained by and expected to tend toward a "natural price," which reflects the relative amount of labor that goes into producing them. The labor theory of value has, however, fallen out of favor among most mainstream economists.

The primary objective of this study was to ascertain the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria. Abraham Maslow Theory of Needs on the other hand emphasized that human beings are motivated by unsatisfied needs which when satisfied will ultimately influence productivity and firm performance. Thus, this theory is well situated for the study.

2.3 Empirical Review

2.3.1 Sales Growth and Financial Performance

In Indonesia, Afinindy, Salim and Ratnawat (2021) examined the effect of profitability, firm size, liquidity, and sales growth on firm value in food and beverage firms listed on the Jakarta Stock Exchange during the period from 2013 to 2018. In order to conduct the study, secondary data were obtained from the firms selected for the study. The study adopted ordinary least square regression analysis and t-statistics to examine the collected data. Results from the analysis show that firm size and sales growth did not increase the capital structure and firm value. Result also suggested that profitability does not affect the capital structure, but it does affect firm value. It was also found that liquidity affects the capital structure, but not firm value. It was equally ascertained from the analysis that capital structure affects firm value. However, results of the mediation test show that the capital structure is only able to mediate the effect of liquidity on firm value. This implies that the implementation of good liquidity can improve the capital structure generated by the firm, so that the firm value also increases, which ultimately investors respond positively.

Zulkifli, Rivai and Suharto (2020) studied the effect of firm size and sales growth on capital structure with profitability as mediation in construction and building sub-sector firms listed on the Indonesia Stock Exchange. The study targeted all construction and building sector firms listed on Indonesia Stock Exchange. Only construction and building firms that disclosed the required variables in their financial statements during the period from 2014-2018 were selected.

The data collected from the selected firms were analyzed using regression analysis. Finding indicates that company size did not have a significant effect on profitability. The sales growth variable does not partially affect profitability. Finding also shows that sales growth and firm size does not significantly affect the firms' structure. The study also found that capital structure does not significantly affect profitability. It was also ascertained that the direct effect of firm size on capital structure is greater than the indirect effect indicating that the profitability is not a mediating variable because its existence does not increase the effect of firm size on capital structure. The result also discloses that the effect of sales growth on profitability is greater than the effect of sales growth on capital structure, thus profitability variable is not a mediating variable because its existence does not increase the influence of growth on the capital structure.

Wahyud (2020) analyzed the effect of leverage, profitability, and sales growth on firm value using a sample of 13 out of a population of 43 manufacturing firms listed in Jakarta, Indonesia Stock Exchange during the period from 2016 to 2018. Purposive sampling technique was adopted in selecting the sample while multiple regression analysis was used in analyzing the secondary data obtained from the sample firms. Findings from the analysis suggest that leverage has a significant positive effect on firm value while sales growth and profitability have no significant effect on firm value.

Dewi and Nataherwin (2019) studied the effects of leverage, sales growth, firm size, and corporate social responsibility disclosure on earnings in Indonesia during the period of 2016 to 2018. The independent variables of the study are leverage, sales growth, firm size, and corporate social responsibility disclosure while the dependent variable is firm earnings. A sample of 58 manufacturing firms listed on the Indonesia Stock Exchange was taken using purposive sampling method. Results show that leverage had a negative and significant effect on earnings, sales growth had a positive and significant effect on earnings, while firm size and corporate social responsibility disclosure had no significant effect on earnings during the period.

Amanda (2019) studied the impact of inventory turnover, cash turnover, receivable turnover, current ratio and debt to equity ratio on the profitability of Indonesia listed firms from 2013 to 2017. Firms in the basic Chemical Industry Sector of Indonesia were sampled for the study. Purposive Sampling method was used in selecting the sample while regression analysis was used to analyze the data collected for the study. Results from analysis suggest that cash turnover has no impact on firm profitability. It was also observed that receivable turnover has no impact on firm profitability. Result further indicates that inventory turnover has no impact on firm profitability. It was also ascertained that current ratio has a positive and significant impact on firm profitability while debt to equity ratio has no impact on firm profitability.

Mappanyuki and Sari (2017) evaluated the effect of sales growth ratio, inventory turnover ratio, and growth opportunity on the profitability of manufacturing firms listed on Indonesia Stock Exchange. Return on assets, net profit margin, return on equity were used as the dependent variables and measures of firm profitability. Secondary data were obtained from the annual reports and financial statements of the selected firms while descriptive statistics and multiple linear regression analysis were used to analyze the data. Results show that partially, sales growth ratio had no significant effect on return on assets and net profit margin. Result further shows that return on equity significantly affects sales growth ratio. Findings show that inventory turnover ratio partially affects return on assets and return on equity. Net Profit Margin significantly affects inventory turnover ratio. Growth opportunity insignificantly affects return on assets, net profit margin, and return on equity.

Bilgi and Yönetimi (2014) investigated the interaction between firm growth and profitability using panel data of manufacturing firms listed in Turkey from 1997-2012. The target population is the 191 manufacturing firms listed in Istanbul Stock Exchange during the period. A sample of 137 manufacturing firms was taken from the population for analysis. Secondary data collected obtained from the sampled firms were analyzed using system-GMM (Blundell and Bond, 1998) to estimate growth and profit regressions. Sales growth rate was used as proxy for growth while gross operating profit was used as proxy for profitability.

Firm age, liquidity ratio and financial leverage were used as control variables. Findings show that there is a statistically significant positive relation between current profits and current growth. It was equally observed that the impact of current profits on current growth is much stronger than the impact of current growth on current profits. In addition, the results suggest that lagged profits affect current profits positively and lagged profitability is a significant determinant of current profits. Moreover, the link between current profits and lagged profits is much stronger than the link between current growth and current profits.

2.3.2 Sales per Employee and Financial Performance

Harb (2019) studied the effect of profitability and financial performance on improving productive efficiency in Jordanian industrial companies. Survey research design was adopted whereby questionnaires were distributed to respondents from Jordanian industrial firms. Cronbach Alpha, multiple linear regression analysis, sample t-test analysis were used to analyze the data obtained from the respondents. Results indicate that there is a statistically significant impact of the profitability and financial performance on improving productive efficiency in Jordanian industrial companies. The study recommended that Jordanian industrial firms should increase the interest in profitability and financial performance to improve productive efficiency.

Nguyen, Nguyen, Ngo and Nguyen (2019) analyzed the relationship between productivity and firm's performance in Vietnam. Specifically, the relationship between labor productivity, foreign ownership and other firm-level characteristics and firm performance were evaluated. All the non-financial firms listed on Ho Chi Minh City Stock Exchange and Ha Noi Stock Exchange during the period of 2010 to 2017 were used for the study. The data collected from the firms were analyzed using correlation analysis. Findings indicated that increasing labor productivity and increasing foreign ownership increase firm value. Also variables such as liquidity and firm size have positive effects on firm value measured by Tobin's Q.

Alemayehu and Belete (2019) assessed the effect of operational efficiency on the performance of private and state owned commercial banks in Ethiopia. The study targeted all commercial banks registered by NBE and under operation in the country presently. Currently, there are 18 banks in Ethiopia, comprising of two (2) government owned and sixteen (16) private banks. Seven of these banks were selected using purposive sampling technique. The banks are: Commercial, Awash, Dashen, Abyssinia, Wegagen, United and Nib bank. Only those which are in the operation for at least twelve years are included in the sample. The study used secondary data, which were obtained from the annual report of the selected banks covering the period from 2012 to 2017. The data were analyzed using descriptive statistics. The result of this study indicates that state owned banks have shown superior performance than private banks. Out of the seven ratios used in performance analysis, five ratios support state owned banks for superior performance as compared to private banks and also operational efficiency has great impact on performance of commercial banks.

Krekel; Ward and De-Neve (2019) conducted a study on employee wellbeing, productivity and firm performance. Correlation analysis was used to study the wellbeing of 1,882,131 employees and the performance of 82,248 business units, from 230 independent organizations across 49 industries in the Gallup client database. Results from the analysis

indicate that a significant, strong positive correlation between employees' satisfaction with their firms and employee productivity and customer loyalty. A strong negative correlation was also observed between employees' satisfaction with staff turnover. It was concluded that, higher wellbeing at work is positively correlated with more business-unit level profitability and productivity.

Fauver, McDonald and Taboada (2015) conducted a study to ascertain if employee-friendly corporate culture that provides higher levels of compensation, benefits, training, and equal opportunities for advancement increases firm financial value and efficiency. A sample of 3,034 firms from 44 countries of the World for the period 2002 to 2013 was used for the study. Regression analysis was used to analyze the data collected from the sampled firms. Finding suggests that firms with a more employee-friendly culture have higher valuation and better performance. Finding also shows that better employee treatment fosters innovation and technical efficiency, suggesting that these are two viable channels through which an employee-friendly culture affects firm value. The results were more obvious in countries with high labor market flexibility.

In Iran, Bahman and Fakhroddin (2012) sampled 45 unprofitable firms and analyzed the impact of firm productivity on loss of unprofitable firms listed on the Tehran Stock Exchange. The independent variables and proxies for productivity are, human capital efficiency and employed capital efficiency. Secondary data were collected from the sampled covering the period of 2002 to 2008. Regression analysis was used to analyze the data collected and to test the null hypotheses formulated for the study. Findings indicate that both human capital efficiency and capital employed efficiency negatively related with firm loss. The study also found that firm size as well as sale growth has negative impact on firm loss. No relationship was detected between state ownership and firm loss.

2.3.3 Profit per Employee and Financial Performance

Sudiyatno, Puspitasari, Nurhayati and Rijanti (2021) analyzed the the relationship between profitability and firm value of manufacturing firms in Indonesia. Specifically, the study tested whether profitability acts as a moderating variable that moderates the influence of the firm growth and capital structure on the firm value. Firm growth and capital structure were used as the independent variables while profitability is the moderating variable. Some firms were sampled from a population of manufacturing firms listed on the Indonesia Stock Exchange during the period 2016-2018. Panel data regression and descriptive statistics were used to analyze the data collected from the selected firms. The results showed that company growth and profitability had a positive effect on the firm value, while capital structure does not. Findings from the analysis indicates that profitability does not moderate the effect of firm growth and capital structure on the firm value, the interaction of firm growth and capital structure with profitability has a negative impact on the firm value.

Boring (2019) examine how a firm productivity level is related to corporate social responsibility objectives for innovations in Norway, and whether this relationship is affected by firm size. Two CSR objectives for innovations were examined, a firm's objective of reducing environmental impacts, and an objective of improving health or safety of the employees. Firm size is measured by the number of employees. A data set comprising

Norwegian manufacturing firms with or without innovation activity in 2013 is used. Result of the study show that the predicted probability of adopting the objective of reducing environmental impacts has a significant negative effect on the productivity level among large firms while this effect is not significant among small firms. It was also found that the predicted probability of adopting the objective of improving health or safety of the employees has no significant effect on the productivity level of small or large firms. The implication of the results is that whether 'it pays to be green' or not, depends on firm size.

Boateng (2019) examined the impact of operational efficiency and productivity on the profitability of Ghanaian banks from 2009 to 2017. Return on assets served as the proxy for profitability and acted as the dependent variable, whereas the efficiency and productivity ratios served as the independent variables. The sampling technique used was purposive because of the unavailability of data on some of the banks for the study period. Secondary data was obtained from the annual financial reports of nine (9) sampled banks for nine (9) years while multiple regressions were used for the analyses. The results of the analysis indicate that, the most significant variables that affect the profitability of banks in Ghana are net interest margin, non-interest income margin, operating expenses to income ratio, profit per employee, and business per employee. Equity to assets ratio and personnel expenses to operating expenses ratio on the other hand, had a non-significant relationship with the profitability of Ghanaian banks. The study recommended that Ghanaian banks management should place emphasis on having lean employees size, and increase the banks' business by mobilizing more deposits and advancing more quality loans. It also recommended that management should ensure a reduction in operational expenditure through minimization of wastages and cost cutting to improve operational efficiency.

Kan (2018) examined the factors influencing profitability of manufacturing firms listed on the New York Stock Exchange during the period of 2012 to 2017. The variables investigated are: firm size, intensity of research and development, growth rate, productivity, age, net asset turnover, leverage ratio, and current ratio. The dependent variable is profitability. Data were collected from the ORBIS database on 250 American manufacturing firms for years 2012-2017. Descriptive statistics, correlation and regression analysis were used to analyze the data collected. Results suggest that a positive relationship exist between investment in research and development, growth rate, employee productivity, leverage ratio, current ratio and profitability. No statistically significant relationship was found between firm size and age with profitability. The results also suggest a negative relationship between net asset turnover and profitability.

Narwal and Pathneja (2015) examined the determinants of productivity and profitability of banks functioning in India. The performance of public and private sector banks in terms of productivity and profitability is being assessed in two different time periods (2003-04 to 2008-09 and 2009-10 to 2013-2014). The decomposition of total factor productivity into pure technical and scale efficiency was done to get a comprehensive insight of the effect of these two on the overall productivity. Further, regression analysis discovers the determinants of different bank groups. Finding suggests that private sector banks are more productive than public sector banks over the whole study period. But no significant difference exists in the profitability of two bank groups. The main reason of more productivity of private sector banks is the better utilization of technology than the public sector banks. Further, the

productivity of banking sector of India was not significantly different in the two sub-periods although the banks have performed better in the sub-period II (2009-10 to 2013-14).

Matui (2011) analyzed the influencers of employee productivity and subsequent impact on organizational performance in Kenyan Banking sector with main reference to Kenya Commercial Bank Limited. Stratified sampling procedure was used to select a sample of 61 respondents comprising senior management, middle level managers and low level managers of Kenya Commercial Bank branches within Nairobi Central Business District. Questionnaires were administered to the respondent to collect primary data. Descriptive statistics, charts, graphs and tables were used to analyze the data. The findings show that effective training programs enhances the knowledge, skills an attitude of the employees thus improving their productivity which contributes to superior organizational performance. Finding also shows that organizational climate ensures less absenteeism, improved participation and work commitment hence high employee productivity. The study recommends that comprehensive training and development programs should be provided to employees to equip them with the right skills so as to enhance their productivity and subsequently enhance organizational performance. It was also recommended that the bank provide a good working environment for employees so as to enhance their efficiency and productivity.

2.5 Gap in Empirical Literature

The empirical summary presented in table 2.4.1 shows that none of the 19 studies was conducted in Nigeria. This means that studies in this area are required in the country. The table also indicate that only 5 out of the 19 studies reviewed were conducted in the manufacturing sector of the countries' economies while the remaining 14 were conducted in other economies. In addition to this, none of the studies was conducted in the foods and beverage sub-sector of the manufacturing firms. It was further observed from the empirical summary that none of the studies covered the period of 2019 to 2020. The present study was instigated by these literature gaps to examine the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria from 2011 to 2020.

3.0 METHODOLOGY

3.1 Research Design

This study adopted an ex post facto research design. This means that the data used for the study are historical financial data collected from the published annual reports and financial statement of the selected listed foods and beverage manufacturing firms in Nigeria.

3.2 Sources of Data

The secondary data is the source of data for the study. The data were collected from the annual report and financial statement of the selected foods and beverage manufacturing firms listed on the Nigeria Stock Exchange during the period of 2011 to 2020.

3.2 Area of Study

This study was conducted in Nigeria and precisely on foods and beverage manufacturing firms in Nigeria during the period.

3.3 Population

The population of the study comprised the 20 foods and beverage firms listed on the Nigeria Stock Exchange during 2011 to 2020.

3.5 Sample Size Determination

A sample of eight (8) firms was selected from the fifteen (15) foods and beverage manufacturing firms listed on the Nigeria stock exchange through purposive sampling. Disclosure of the required variables is the criteria for the selection. Sales growth, sales per employee and profit per employee are the independent variables and measures of firm productivity while return on assets is the dependent variable and measure of financial performance. The eight (8) firms selected for the study were: Guinness Nigeria Plc, Nigeria Brewery Plc, Cadbury Nigeria Plc, Unilever Nigeria Plc, Nestle Nigeria Plc, UAC Nigeria Plc, Dangote Sugar Nigeria Plc and Honeywell Flour Mill Nigeria Plc.

3.6 Model Specification

The following model was developed based on the variables used in the study:

$$ROA_i = \beta_0 + \beta_1 \text{LogSLG} + \beta_2 \text{SPE} + \beta_3 \text{PPE} + \epsilon$$

Where:

ROA_i = Return on Assets

SLG = Log of Sales Growth

SPE = Log of Sales per Employee

PPE = Profit per Employee

3.7 Description of Variables in the Model

Variable Name	Label	Description of Variables	Variables Formulae
Return on Assets	ROA	This is a printability ratio that measures how efficiently firm management is utilizing the total assets at their disposal in generating profit for the firm.	Return on Assets = Profit for the Year–Total Assets
Sales Growth	SLG	Sales growth is a metric that measures the ability an organization to increase its sales revenue over a period of time. The period could be one month, one quarter or one year. Calculated as current year sales less prior year's sales.	Sales Growth = Current Year Sales – Prior Year Sales.
Sales Per Employee	SPE	This is a productivity measure that indicates the amount of sales made by a firm during a	Sales Per Employee = Sales/Number of Employee.

		period.	
Profit Per Employee	PPE	This is an efficiency ratio that shows the amount of profit generated by each permanent employee in a firm. This ratio is important to determine if each employee is generating the amount of investment made by the firm on the employees.	Profit Per Employee = Profit for the Year/Number of Employee

Source: Author's Compilation 2021.

3.8 Method of Data Analysis

Multiple regression analysis and t-statistics were used to analyze the data collected and to test the null hypothesis formulated for the study. Adjusted Coefficient of Determination (R²) was used to examine the extent by which the variations in the dependent variable were caused by the independent variables. The independent variables of the study and proxies for productivity are Sales Growth, Sales per Employee and Assets per Employee while the independent variable and measure of firm value is Net Assets.

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

The study investigated the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria. Secondary data were collected from the annual reports and financial statements of the selected eight (8) foods and beverage manufacturing firms during the period from 2011 to 2020. The data were used to calculate sales growth, sales per employees, profit per employee and return on assets and presented in tables 4.1.1 to 4.1.8 as follows:

TABLE 4.1.1: GUINNESS NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETURN ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	109,366,975								
2011	123,663,125	109,366,975	14,296,150	92,175,032	17,927,934	1,237	99,970	14,493	0.1945
2012	116,461,882	123,663,125	(7,201,243)	102,534,172	14,671,195	1,406	82,832	10,435	0.1431
2013	122,462,538	116,461,882	6,000,656	121,060,621	11,863,726	1,433	85,459	8,279	0.0980
2014	109,202,120	122,462,538	(13,260,418)	132,328,273	9,573,480	1,368	79,826	6,998	0.0723
2015	118,795,882	109,202,120	9,593,762	122,246,632	7,794,899	1,371	86,649	5,686	0.0638
2016	101,973,030	118,795,882	(16,822,852)	136,992,444	(2,015,886)	1,344	75,873	(1,500)	-0.0147
2017	125,919,817	101,973,030	23,946,787	146,038,216	1,923,720	951	132,408	2,023	0.0132
2018	142,498,373	125,919,817	16,578,556	153,254,968	6,717,605	804	177,237	8,355	0.0438
2019	131,498,373	142,498,373	(11,000,000)	160,792,627	5,483,732	780	168,588	7,030	0.0341
2020	104,376,015	131,498,373	(27,122,358)	144,145,581	(12,578,818)	822	126,978	(15,303)	-0.0873

Source: Annual reports and financial statements of Guinness Nig Plc

TABLE 4.1.2: NIGERIA BREWRIES PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETURN ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	185,862,705								
2011	207,303,379	185,862,705	21,440,674	235,701,196	38,050,756	3,316	62,516	11,475	0.1614
2012	252,674,213	207,303,379	45,370,834	253,633,629	38,042,714	3,214	78,617	11,837	0.1500
2013	268,613,518	252,674,213	15,939,305	252,759,633	43,080,349	3,195	84,073	13,484	0.1704
2014	266,372,475	268,613,518	(2,241,043)	349,229,163	42,520,253	3,048	87,393	13,950	0.1218
2015	293,905,792	266,372,475	27,533,317	356,218,163	38,056,123	3,777	77,815	10,076	0.1068
2016	313,743,147	293,905,792	19,837,355	367,146,468	28,416,965	3,646	86,051	7,794	0.0774
2017	344,562,517	313,743,147	30,819,370	382,228,093	33,048,559	3,328	103,534	9,930	0.0865
2018	324,388,500	344,562,517	(20,174,017)	388,262,869	19,437,009	2,983	108,746	6,516	0.0501
2019	323,007,470	324,388,500	(1,381,030)	382,777,522	16,105,912	3,102	104,129	5,192	0.0421
2020	327,046,213	323,007,470	4,038,743	445,857,202	7,368,369	2,990	109,380	2,464	0.0165

Source: Annual reports and financial statements of Nigerian Breweries plc

TABLE 4.1.3: CADBURY NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETURN ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	32,850,641								
2011	34,110,547	32,850,641	1,259,906	33,656,352	3,670,555	1,020	33,442	3,599	0.1091
2012	33,550,501	34,110,547	(560,046)	40,156,508	3,454,991	1,011	33,185	3,417	0.0860
2013	35,760,753	33,550,501	2,210,252	43,172,624	3,350,113	1,064	33,610	3,149	0.0776
2014	30,518,586	35,760,753	(5,242,167)	28,811,286	2,137,319	847	36,031	2,523	0.0742
2015	27,825,194	30,518,586	(2,693,392)	28,417,005	1,153,295	783	35,537	1,473	0.0406
2016	29,979,410	27,825,194	2,154,216	28,409,000	(296,403)	727	41,237	(408)	-0.0104
2017	33,079,486	29,979,410	3,100,076	28,423,122	299,998	562	58,860	534	0.0106
2018	35,972,479	33,079,486	2,892,993	27,528,040	823,085	550	65,405	1,497	0.0299
2019	39,326,807	35,972,479	3,354,328	28,801,938	1,070,845	536	73,371	1,998	0.0372
2020	35,407,323	39,326,807	(3,919,484)	33,210,684	931,287	497	71,242	1,874	0.0280

Source: Annual reports and financial statements of Cadbury Nigeria Plc

TABLE 4.1.4: UNILEVER NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETURN ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	46,827,860					994			
2011	54,724,749	46,827,860	7,896,889	32,279,928	5,491,076	1,070	51,145	5,132	0.1701
2012	55,547,798	54,724,749	823,049	36,497,624	5,597,613	1,240	44,797	4,514	0.1534
2013	60,004,119	55,547,798	4,456,321	43,754,114	4,806,907	1,206	49,755	3,986	0.1099
2014	55,754,309	60,004,119	(4,249,810)	45,736,255	2,412,343	1,292	43,153	1,867	0.0527
2015	59,221,748	55,754,309	3,467,439	50,172,484	1,192,366	1,248	47,453	955	0.0238
2016	69,777,061	59,221,748	10,555,313	72,491,309	3,071,885	1,207	57,810	2,545	0.0424
2017	90,771,306	69,777,061	20,994,245	121,084,365	7,450,085	1,148	79,069	6,490	0.0615

2018	92,899,969	90,771,306	2,128,663	131,843,373	10,522,140	1,174	79,131	8,963	0.0798
2019	60,486,835	92,899,969	(32,413,134)	103,677,519	(7,419,674)	1,010	59,888	(7,346)	-0.0716
2020	61,959,678	60,486,835	1,472,843	915,717,538	(3,965,921)	777	79,742	(5,104)	-0.0043

Source: Annual reports and financial statements of Unilever Nigeria Plc

TABLE 4.1.5: NESTLE NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETUR ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	82,726,000								
2011	97,961,260	82,726,000	15,235,260	77,728,293	16,496,453	2,168	45,185	7,609	0.2122
2012	116,707,394	97,961,260	18,746,134	88,963,218	21,137,275	2,179	53,560	9,700	0.2376
2013	133,084,076	116,707,394	16,376,682	108,207,780	22,258,279	2,288	58,166	9,728	0.2057
2014	143,328,982	133,084,076	10,244,906	105,062,067	22,235,640	2,245	63,844	9,905	0.2116
2015	151,271,526	143,328,982	7,942,544	119,215,053	23,736,777	2,356	64,207	10,075	0.1991
2016	181,910,977	151,271,526	30,639,451	159,585,932	7,924,968	2,325	78,241	3,409	0.0497
2017	244,151,411	181,910,977	62,240,434	146,804,128	33,723,730	2,201	110,927	15,322	0.2297
2018	266,274,621	244,151,411	22,123,210	162,334,422	43,008,026	2,187	121,753	19,665	0.2649
2019	284,035,255	266,274,621	17,760,634	193,374,314	45,683,113	2,219	128,001	20,587	0.2362
2020	287,084,087	284,035,255	3,048,832	246,184,996	39,212,025	2,239	128,220	17,513	0.1593

Source: Annual reports and financial statements of Nestle Nigeria Plc

TABLE 4.1.6: UAC NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETUR ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	52,313,682								
2011	63,588,189	52,313,682	11,274,507	113,700,201	10,202,167	2,542	25,015	4,013	0.0897
2012	69,632,321	63,588,189	6,044,132	122,975,593	7,102,951	2,293	30,367	3,098	0.0578
2013	78,714,437	69,632,321	9,082,116	123,018,476	9,902,858	2,197	35,828	4,507	0.0805
2014	85,654,346	78,714,437	6,939,909	130,360,660	10,944,795	2,423	35,351	4,517	0.0840
2015	73,145,987	85,654,346	(12,508,359)	128,655,328	5,184,671	2,287	31,983	2,267	0.0403
2016	82,572,262	73,145,987	9,426,275	138,229,559	6,293,695	1,983	41,640	3,174	0.0455
2017	89,178,082	82,572,262	6,605,820	130,617,133	1,324,387	2,141	41,653	619	0.0101
2018	40,473,640	89,178,082	(48,704,442)	130,971,984	(9,530,145)	1,837	22,032	(5,188)	-0.0728
2019	79,202,140	40,473,640	38,728,500	107,595,263	(9,257,642)	1,486	53,299	(6,230)	-0.0860
2020	81,357,960	79,202,140	2,155,820	92,166,559	3,927,926	1,396	58,279	2,814	0.0426

Source: Annual reports and financial statements of UAC Nigeria Plc

TABLE 4.1.7: DANGOTE SUGAR NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETUR ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	89,980,499								

2011	107,218,642	89,980,499	17,238,143	72,814,721	7,244,056	652	164,446	11,111	0.0995
2012	102,467,361	107,218,642	(4,751,281)	87,112,182	10,735,450	659	155,489	16,291	0.1232
2013	103,153,735	102,467,361	686,374	83,159,877	16,265,159	1,302	79,227	12,492	0.1956
2014	94,856,203	103,153,735	(8,297,532)	92,801,301	11,635,779	1,363	69,594	8,537	0.1254
2015	101,057,905	94,856,203	6,201,702	102,624,834	11,535,062	722	139,969	15,977	0.1124
2016	169,724,936	101,057,905	68,667,031	172,169,458	14,395,938	1,419	119,609	10,145	0.0836
2017	204,422,379	169,724,936	34,697,443	195,080,449	39,783,605	1,994	102,519	19,952	0.2039
2018	150,373,083	204,422,379	(54,049,296)	175,116,627	21,976,468	2,408	62,447	9,126	0.1255
2019	161,085,778	150,373,083	10,712,695	193,705,916	22,361,276	2,487	64,771	8,991	0.1154
2020	214,297,747	161,085,778	53,211,969	278,032,389	29,775,243	2,880	74,409	10,339	0.1071

Source: Annual reports and financial statements of the firms

TABLE 4.1.8: HONEYWELL FLOUR MILL NIGERIA PLC

YEAR	CURRENT YEAR	PRIOR YEAR	SALES	TOTAL	PROFIT FOR	NUMBER OF	SALES PER	PROFIT PER	RETURN ON
	SALES	SALES	GROWTH	ASSETS	THE YEAR	EMPLOYEES	EMPLOYEE	EMPLOYEE	ON ASSETS
	N(000)	N(000)	N(000)	N(000)	N(000)		N(000)	N(000)	
2010	33,528,011								
2011	34,057,624	33,528,011	529,613	29,504,549	2,492,397	656	51,917	3,799	0.0845
2012	38,052,227	34,057,624	3,994,603	47,930,278	2,693,975	757	50,267	3,559	0.0562
2013	45,709,382	38,052,227	7,657,155	55,437,478	2,843,520	827	55,271	3,438	0.0513
2014	55,084,305	45,709,382	9,374,923	63,830,440	3,352,564	842	65,421	3,982	0.0525
2015	49,057,511	55,084,305	(6,026,794)	67,943,444	1,120,267	851	57,647	1,316	0.0165
2016	50,883,780	49,057,511	1,826,269	76,046,576	(3,023,853)	844	60,289	(3,583)	-0.0398
2017	53,227,891	50,883,780	2,344,111	113,151,715	4,304,955	700	76,040	6,150	0.0380
2018	71,476,319	53,227,891	18,248,428	124,850,013	4,426,978	701	101,963	6,315	0.0355
2019	74,409,113	71,476,319	2,932,794	137,472,444	719,448	785	94,789	916	0.0052
2020	80,450,397	74,409,113	6,041,284	142,261,292	650,492	819	98,230	794	0.0046

Source: Annual reports and financial statements of Honeywell Flour Nigeria Plc

4.2 Data Analysis

The effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria was investigated using multiple regression analysis and t-statistics. This section presents the results of data analysis, that is, the model summary and multiple regression results in tables: 4.2.1 and 4.2.2 respectively.

Table 4.2.1: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.988 ^a	.961	.950	1212.56124	.961	75.588	10	8	.000	1.825

SOURCE: SPSS output

a. Predictors: (Constant), SLG, SPE, PPE

b. Dependent Variable: ROA

The results of the model summary are presented in table 4.2.1. It could be observed from the table that adjusted coefficient of determination (R²) is 0.950. This implies that 95% of the variations in return on assets of the selected foods and beverage manufacturing firms during the period are explained by the independent variables (sales growth, sale per employee and profit per employee) while the remaining 5 is explained by error margin and other factors not included in the model of the study. This result corroborated by the results obtained from F-statistics in the model summary table. F-statistics results from the table indicate that the coefficient of F-Statistics stands 75.588 which is significant at 0.05 level of significance (0.05>0.000). Based on these results, we opine that the entire model is significant in predicting the return on assets of the foods and beverage manufacturing firms during the period.

Durbin-Watson Statistic was also used to test the presence of autocorrelation in the model of the study. The coefficient of the Durbin-Watson Statistic in the table is 1.825. This result is closer above 1, thus, confirming that there is no presence of autocorrelation in the model of the study.

Table 4.2.2: Multiple Regression Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3586.520	1707.411		1.966	.075
SLG	241.627	172.156	.085	2.454	.028
SPE	125.067	20.254	.066	3.226	.041
PPE	169.940	20.271	1.046	8.383	.000

SOURCE: SPSS output

4.3 Test of Hypotheses

Decision rule:

Level of significance (α) = 0.05. Reject the null hypothesis if the significant value in the regression coefficient is less than the level of significance (0.05), otherwise accept the null hypothesis. In line with this decision rule, the results of the test of hypotheses are presented hereunder:

Hypothesis One

H₀: Sales growth does not significantly affect return on assets of foods and beverage manufacturing firms in Nigeria.

Hi Sales growth significantly affects return on assets of foods and beverage manufacturing firms in Nigeria.

From the multiple regression analysis in table 4.2.2, it could be ascertained that the significant value of sales growth is 0.028. This value is significant at 0.05 level of significance ($0.05 > 0.028$). Therefore, we reject the null hypothesis and accept the alternative which states that sales growth significantly affects return on assets of foods and beverage manufacturing firms in Nigeria.

Hypothesis Two

H₀: Sales per employee does not significantly affect return on assets of foods and beverage manufacturing firms in Nigeria.

Hi: Sales per employee significantly affects return on assets of foods and beverage manufacturing firms in Nigeria.

Results from the multiple regression analysis also reveal that the significant value of sales per employee is 0.041. This value is also significant at 0.05 level of significance ($0.05 < 0.041$). Based on this information, we reject the null hypothesis and accept the alternative which states sales per employee significantly affect return on assets of foods and beverage manufacturing firms in Nigeria.

Hypothesis Three

H₀: Profit per employee does not significantly influence return on assets of foods and beverage manufacturing firms in Nigeria.

H₁: Profit per employee significantly influence return on assets of foods and beverage manufacturing firms in Nigeria.

The multiple regression analysis further disclosed that the significant value of profit per employee is 0.000. This value is equally significant at 0.05 level of significance ($0.05 < 0.000$). Based on this, we reject the null hypothesis and accept the alternative which states profit per employee significantly affects return on assets of foods and beverage manufacturing firms in Nigeria.

4.4 Discussion of Findings

Findings One

Sales Growth and Return on Assets: The coefficient of sales growth in the multiple regression model is 541.627 which is significant at 0.05 level of significance ($0.05 > 0.028$). Based on these findings, we opine that sales growth positively and significantly affect return on assets of foods and beverage manufacturing firms in Nigeria. The multiple regression model also shows that the coefficient of sales growth in the t-statistics is 2.454, which is significant at 0.05 level of significance ($2 < 2.454$). Therefore, we conclude that the effect of sales growth

on return on assets of the foods and beverage manufacturing firms in Nigeria is positive and also statistically significant.

This finding is consistent with: Dewi and Nataherwin (2019) who studied the effects of leverage, sales growth, firm size, and corporate social responsibility disclosure on earnings in Indonesia and found that sales growth had a positive and significant effect on earnings. Sudiyatno, Puspitasari, Nurhayati and Rijanti (2021) that analyzed the relationship between profitability and firm value of manufacturing firms in Indonesia and found that company growth and profitability had a positive effect on the firm value. The finding, however, contrasts with: Wahyud (2020) who analyzed the effect of leverage, profitability and sales growth on firm value of manufacturing firms in Jakarta, Indonesia and found that sales growth and profitability have no significant effect on firm value. Afinindy, Salim and Ratnawat (2021) who examined the effect of profitability, firm size, liquidity, and sales growth on firm value in food and beverage firms listed on the Jakarta, Indonesia and found that firm size and sales growth did not increase the capital structure and firm value. Zulkifli, Rivai and Suharto (2020) who studied the effect of firm size and sales growth on capital structure with profitability as mediation in construction and building sub-sector firms listed on the Indonesia and found that sales growth and firm size does not significantly affect the firms' structure

Findings Two

Sales Per Employee and Return on Assets: We also observed that the coefficient of sales per employee in the multiple regression model is 125.067, which is significant at 0.05 level of significance ($0.05 > 0.041$). Based on these findings, we state that sales per employee positively and significantly affect return on assets of foods and beverage manufacturing firms in Nigeria. The multiple regression model equally indicates that the coefficient of sales per employee in the t-statistics is 3.336, which is equally significant at 0.05 level of significance ($2 < 2.3.336$). Thus, we conclude that the effect of sales per employee on return on assets of the foods and beverage manufacturing firms in Nigeria is positive and also statistically significant.

This result is in agreement with: Nguyen, Nguyen, Ngo and Nguyen (2019) who analyzed the relationship between productivity and firm's performance in Vietnam and found that increasing labor productivity and increasing foreign ownership increase firm value. Krekel, Ward and De-Neve (2019) who conducted a study on employee wellbeing, productivity and firm performance and found a significant, strong positive correlation between employees' satisfaction with their firms and employee productivity and customer loyalty. Matui (2011) who analyzed the influencers of employee productivity and subsequent impact on organizational performance in Kenyan Banking sector, and it was observed that effective training programs enhances the knowledge, skills an attitude of the employees thus improving their productivity which contributes to superior organizational performance.

Findings Three

Profit per Employee and Return on Assets: It was further observed that the coefficient of profit per employee in the multiple regression model is 169.940, which is significant at 0.05 level of significance ($0.05 > 0.000$). Based on these findings, we state that profit per employee positively and significantly affect return on assets of foods and beverage manufacturing firms

in Nigeria. The multiple regression model further disclosed that the coefficient of profit per employee in the t-statistics is 8.383, which is also significant at 0.05 level of significance ($2 < 2.8.383$). Therefore, we opine that the effect of profit per employee on return on assets of the foods and beverage manufacturing firms in Nigeria is positive and statistically significant.

This result is in line with: Harb (2019) who studied the effect of profitability and financial performance on improving productive efficiency in Jordanian industrial companies and findings reveal a statistically significant impact of the profitability and financial performance on improving productive efficiency in Jordanian industrial firms; and Kan (2018) who examined the factors influencing profitability of manufacturing firms listed on the New York Stock and found a positive relationship exists between investment in research and development, growth rate, employee productivity, leverage ratio, current ratio and profitability.

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

In line with the data analysis, test of hypotheses and the findings from the study and the ensuing discussions, we summarize the findings of the study as follows:

- i. Sales growth positively and significantly affected return on assets of the foods and beverage manufacturing firms in Nigeria during the period.
- ii. Sales per employee positively and significantly affect return on assets of the foods and beverage manufacturing firms in Nigeria during the period.
- iii. Profit per employee positively and significantly affect return on assets of the foods and beverage manufacturing firms in Nigeria during the period.

5.2 Conclusion

The study investigated the effect of firm productivity on financial performance of foods and beverage manufacturing firms in Nigeria from 2011 to 2020. Sales growth, sales per employee and profit per employee were used as the independent variables and measures of firm productivity while return on assets is the dependent variable and measure of financial performance. A sample eight (8) firms was selected from the fifteen (15) foods and beverage manufacturing firms listed on the Nigeria Stock Exchange during the period. The data obtained from the sampled firms were analyzed using multiple regression analysis and t-statistics. Based on the results from the analysis, it was concluded that the independent variable strongly explained the variations in the financial performance of the foods and beverage manufacturing firms in Nigeria. The study also concluded that the effect of all the independent variable (sales growth, sales per employee and profit per employee) on return on assets of the foods and beverage manufacturing firms in Nigeria are positive and statistically significant.

5.3 Recommendations

Based on the findings and conclusions, we propose the following recommendations for the firm managers of foods and beverage manufacturing firms in Nigeria:

- i. The managers of the manufacturing firms should increase their sales in other to increase return on assets and maximize wealth for the shareholders. Return on assets ratio can be increase by increasing firm revenue, controlling expenses and investing in only assets that van increase the firms' profitability.
- ii. The managers should increase their firm sales to increase sales growth, maximize return on assets and wealth for the shareholders. Production of high quality products, expansion of distribution channels, advertising and sales promotion is some of the ways to increase the firm sales.
- iii. The managers should further increase their profit per employee to increase return on assets and maximize wealth for shareholders. Increase in sales revenue, cost reduction and engaging of reasonable number of staff are some of the ways to increase profit per employee.

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