HUMAN RESOURCE ACCOUNTING AND FIRM VALUE OF LISTED CONSUMER AND INDUSTRIAL GOODS FIRMS IN NIGERIA

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A DISSERTATION WRITTEN TO THE DEPARTMENT OF ACCOUNTING, FACULTY OF SOCIAL AND MANAGEMENT SCIENCES AND SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN ACCOUNTING OF BENSON IDAHOSA UNIVERSITY, BENIN CITY, EDO STATE, NIGERIA

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DECLARATION

I, EHIGIE, Ikponmwosa Darlington do hereby declare that this dissertation **"HUMAN RESOURCE ACCOUNTING AND FIRM VALUE OF LISTED CONSUMER AND INDUSTRIAL GOODS FIRMS IN NIGERIA"** is entirely my own work and composition. The work embodied in the dissertation has not been submitted for any degree and is not currently being submitted for any other degree. All references made to the works of other persons have been duly acknowledged

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CERTIFICATION

We certify that this dissertation was carried out by **EHIGIE, Ikponmwosa Darlington** with Matriculation Number PG/ACC/190449 in the Department of Accounting, Faculty of Social and Management Sciences, Benson Idahosa University, Benin City.

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DEDICATION

This dissertation is dedicated to God Almighty

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ABSTRACT

The study empirically examined the relationship between human resource accounting and firm value of listed consumer and industrial goods firms in Nigeria. The objective of the study was to examine the relationship between staff cost, training and development cost, pension and gratuity, sundry personnel expenses, health and safety cost on firm value. The study adopted the ex-post facto research design. The population of the study consisted of thirty five (35) listed consumer and industrial goods firms in the Nigerian Exchange Group (NGX) and a sample of twenty-four (24) firms that have consistently published their annual audited financial report and accounts for the period of 2015 to 2024. The study adopted the ex-post facto research design, the data collected were secondary data. They were analyzed using descriptive statistics, correlation analysis, fixed effect panel and random effect panel regression technique. The regression results showed that staff cost exerts a negative and non-significant relationship on firm value in Nigeria, training and development cost produces a positive and non-significant relationship on firm value in Nigeria, pension and gratuity causes a negative and non-significant relationship on firm value in Nigeria, sundry personnel expenses brings about a positive and significant relationship on firm value in Nigeria and health and safety cost exerts a positive and insignificant relationship on firm value in Nigeria at p-value > 0.05 level of significance. The study recommended that management should continue to budget more funds for sundry personnel expenses because it significantly enhance the value of the firm among listed consumer and industrial goods firms in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

From a global perspective, Human Resource Accounting (HRA) has gained increasing recognition as organizations across developed and emerging economies seek to improve competitiveness in knowledge-driven and technology-intensive environments. Globally, firms now acknowledge employees as strategic assets rather than mere costs, leading to the adoption of HRA frameworks that support informed decision-making on recruitment, training, compensation, and performance management. By systematically identifying, measuring, and reporting human capital value, HRA enhances transparency, strengthens investor confidence, and supports sustainable organizational growth in line with international best practices.

In Nigeria, the concept of HRA can be traced back to the 1960s, when scholars and researchers began exploring its connection to employees within organizational contexts (Hieu *et al.*, 2022; Adejuwon *et al.*, 2020). In the contemporary era, characterized by a technology-driven economy, business organizations are required to respond proactively to dynamic changes and emerging challenges (Shahid *et al.*, 2017). Within this context, Nigeria has articulated strategic plans to move up the value chain in selected high-growth industries by developing its human capital in order to enhance competitiveness in the global business environment (Zhang, 2017). Furthermore, the disclosure of human resource accounting information in corporate annual reports reflects firms' accountability in ensuring the provision of accurate and transparent information.

HRA is the basis for sharing vital information concerning employees whom are seen as the asset of any corporate organisations. Human resource managers need to embrace good welfare packages for higher employee efficiency. HRA is concerned with the selections that organisations make, from among the myriad of policies, practices and structures for managing and improving employee's commitment and performance. HRA is described as an investment for human capital development in an organisation for improving accounting information useful for decision-making by users of accounting information (Enyi & Akindehinde, 2018).

Sohel-Uz-Zaman (2019) emphasized that the core elements of Human Resource Accounting (HRA), human capital, and Human Resource Management (HRM) lie in aligning a firm's human resources with its business objectives. Firms that fail to achieve such alignment risk diminishing the value that human resources can contribute to organizational performance. The ultimate goal of corporate organizations in terms of value creation and wealth maximization is to meet the expectations of their shareholders. According to Brigham and Houston (2021), the generation of profits for shareholders serves as an indicator of enhanced firm value (FV). Management, therefore, bears the responsibility of maximizing firm value by strategically investing in human resources (Kafidipe *et al.*, 2021). Mohammed *et al.* (2022) further argued that continuous investment in human resources is essential, as it enhances the ability of employees to perform labor and generate economic value, depending on their competencies, knowledge, and personality traits. Similarly, Fernando *et al.* (2020) noted that human resources possess transferable qualities across jobs, firms, and industries. Human capital, therefore, represents a broad concept encompassing self-generating, expandable, transportable, and shareable attributes that are intrinsically linked to individual economic performance.

The social exchange theory and human capital theory posit that human resource practices shape the relationship between employers and employees within business organizations (Kim & Shin, 2019). However, Timidi and Ine-Tonbarapa (2023) observed that disparities in recruitment and selection, training and development, health provisions, and other employee benefits and practices make it challenging for developing and emerging economies, such as Nigeria, to fully adopt these approaches within corporate organizations. Within this context, the present study focuses on specific Human Resource Accounting (HRA) variables of interest, namely staff costs, training and development expenditures, pension and gratuity, sundry personnel costs, and health and safety costs. Against this backdrop, the study seeks to examine the relationship between human resource accounting and firm value in Nigeria.

1.2 Statement of the Research Problem

Human Resource Accounting (HRA) is increasingly recognized as a contemporary and evolving issue in the accounting discipline, attracting global attention due to its applicability across different regions and its responsiveness to contextual variations (Islam, 2020). The growing discourse on HRA is rooted in the recognition that traditional financial reporting frameworks inadequately account for the value of human resources, despite their critical role as a fundamental driver of organizational performance. In an era defined by globalization, high production and service demands, rapid technological innovation, and intensified competitive pressures, organizations are compelled to adopt human resource practices that are not only practical and realistic but also strategic in addressing employee-related challenges and enhancing competitiveness (Shahid *et al.*, 2017). Within this context, human resources are widely considered the most essential factor of production, as organizational effectiveness and

efficiency are largely outcomes of employee competence, commitment, and productivity (Khan, 2010).

Conventional financial reporting, however, has long been critiqued for its limitations in adequately capturing the substantial investments made in staff recruitment, training, and related personnel expenditures. These investments, which constitute significant capital outlays, are often treated merely as operating expenses in financial statements, thereby failing to reflect their long-term value-creating potential (Timidi & Ine-Tonbarapa, 2023). This reporting gap has fueled the relevance of HRA, which seeks to integrate human resource costs and value into accounting practices in a more transparent and meaningful manner.

In prior research, human resource practices have commonly been operationalized through components such as recruitment and selection, training and development, compensation and rewards, performance appraisal, and promotion. Similarly, employee performance has been assessed through proxies such as punctuality, commitment, prudence, sense of ownership, teamwork, and the effective implementation of human resource policies and practices (Ozioma & Udeh, 2021; Udeh, 2021). These practices not only shape employee attitudes and behaviors but also contribute to enhancing organizational efficiency and competitiveness. For example, Shahzad *et al.* (2008) established that outcomes of effective recruitment, training, compensation, performance evaluation, and promotion practices collectively influence employee motivation and efficiency, ultimately enhancing firm-level performance. Beyond organizational efficiency, the disclosure of HRA has also been found to positively impact firm value. Empirical evidence from Vietnam, for instance, indicates that HRA disclosure significantly enhances firm value, thereby underscoring its broader economic relevance (Hieu *et al.*, 2022).

In the Nigerian context, existing literature has primarily concentrated on examining the relationship between HRA and firm performance or profitability (Kankpang *et al.*, 2024; Adegbayibi *et al.*, 2024; Timidi & Ine-Tonbarapa, 2023; Israel *et al.*, 2022; Ndum & Oranefo, 2021; Onyekwelu & Ironkwe, 2021; Nwauzor & Longjohn, 2020; Adetoun *et al.*, 2020; Bankole, 2020; Onyekwelu *et al.*, 2019). While these studies have provided valuable insights into the role of HRA in driving organizational outcomes, they have largely overlooked firm value as a critical dimension of analysis. A few notable exceptions exist: for example, Mohammed *et al.* (2022) examined the impact of human capital investment on the firm value of listed agribusiness firms, using directors' remuneration and staff salaries and wages as proxies for human capital investment, while firm value was measured by Tobin's Q. Likewise, Ozioma and Udeh (2021) analyzed the effect of HRA on firm value, employing staff training and development cost and staff numbers as HRA proxies, with firm value similarly measured by Tobin's Q. While these studies provide important starting points, their scope remains limited in both the conceptualization of HRA and the sectors under investigation.

A closer examination of sectorial focus further reveals that Nigerian studies on HRA have been concentrated on industries other than consumer and industrial goods. For instance, Kankpang *et al*. (2024), Adegbayibi *et al.* (2024), Israel *et al.* (2022), Ndum and Oranefo (2021), and Onyekwelu and Ironkwe (2021) focused predominantly on the banking sector, investigating how HRA practices influence the financial performance of deposit money banks. Similarly, Nwauzor and Longjohn (2020) and Adetoun *et al.* (2020) conducted their inquiries within the general manufacturing sector, while Bankole (2020) and Onyekwelu *et al.* (2019) examined HRA in the oil and gas industry. Even the few studies that extended the analysis to firm value such as Mohammed *et al.* (2022) and Ozioma and Udeh (2021) did so in agribusiness and service-oriented firms, respectively. Despite the strategic role of the consumer goods and

industrial goods sectors in Nigeria's economic development, empirical evidence on the effect of HRA on firm value within these sectors remains scarce. This under representation constitutes a clear sectorial gap, as previous studies have focused on unrelated industries or adopted narrow HRA measures that do not sufficiently capture the broader dimensions of workforce investment and welfare relevant to consumer and industrial goods firms. Addressing this gap is therefore both timely and necessary to provide sector-specific insights into how HRA contributes to firm value in these critical segments of the Nigerian economy

To the best of the researcher's knowledge, there are few empirical studies that examine the effect of HRA on firm value within the context of listed consumer and industrial goods firms in Nigeria, despite the strategic importance of these sectors in driving economic growth and development. This gap underscores the relevance of the present study, which seeks to provide robust empirical evidence on the relationship between HRA and firm value within these sectors. Specifically, the study addresses a content gap by broadening the dimensions of HRA beyond those commonly explored in prior studies. In addition to staff costs and training expenditures, this study incorporates pension and gratuity, sundry personnel expenses, and health and safety costs as critical variables of interest. These dimensions are particularly relevant in the Nigerian context, where employee welfare and safety concerns are often under reported but remain essential for sustaining productivity and organizational reputation.

A key problem in existing studies on Human Resource Accounting (HRA) is their reliance on outdated or short-term data, which fails to capture recent trends in workforce management and its impact on firm value. Many prior studies also overlook important HRA components, such as pension and gratuity obligations, sundry personnel costs, and health and safety expenditures, resulting in incomplete assessments of employee-related investments. Additionally, these

limitations reduce the ability of earlier research to reflect changes in regulatory frameworks, corporate strategies, and human capital practices in Nigeria.

To address these issues, this study adopts a ten-year time frame (2015–2024), ensuring that the analysis incorporates contemporary developments and mitigates the problem of data obsolescence. This approach allows for a more comprehensive understanding of the evolving role of HRA in enhancing firm value in Nigeria and provides insights into how modern human capital practices contribute to organizational performance.

1.3 Research Questions

The following were the research questions for the study:

(i) What is the relationship between staff cost and firm value of listed consumer and industrial goods firms in Nigeria?

(ii) Does training and development cost have any relationship with firm value of listed consumer and industrial goods firms in Nigeria?

(iii) How does pension and gratuity affects firm value of listed consumer and industrial goods firms in Nigeria?

(iv) What effect does sundry personnel expenses has on firm value of listed consumer and industrial goods firms in Nigeria?

(v) Does health and safety cost have any effect on firm value of listed consumer and industrial goods firms in Nigeria?

1.4 Objectives of the Study

The broad objective of this study was to examine the relationship between human resource accounting and firm value of listed consumer and industrial goods firms in Nigeria. The specific objectives are to:

(i) Examine the relationship between staff cost and firm value of listed consumer and industrial goods firms in Nigeria.

(ii) Investigate the relationship between training and development cost and firm value of listed consumer and industrial goods firms in Nigeria.

(iii) Determine the relationship between pension and gratuity and firm value in Nigeria of listed consumer and industrial goods firms in Nigeria.

(iv) Ascertain the relationship between sundry personnel expenses and firm value of listed consumer and industrial goods firms in Nigeria.

(v) Assess the relationship between health and safety cost and firm value of listed consumer and industrial goods firms in Nigeria.

1.5 Hypotheses of the Study

The following hypotheses stated in the null form were tested for the purpose of the study.

$H0_1$: There is no significant relationship between staff cost and firm value of listed consumer and industrial goods firms in Nigeria.

$H0_2$: There is no significant relationship between training and development cost and firm value of listed consumer and industrial goods firms in Nigeria.

$H0_3$: There is no significant relationship between pension and gratuity and firm value of listed consumer and industrial goods firms in Nigeria.

$H0_4$: There is no significant relationship between sundry personnel expenses and firm value of listed consumer and industrial goods firms in Nigeria.

.$H0_5$: There is no significant relationship between health and safety cost and firm value of listed consumer and industrial goods firms in Nigeria.

1.6 Scope of the Study

This study investigated the relationship between Human Resource Accounting (HRA) and firm value of listed consumer and industrial goods firms in Nigeria, using data from the Nigerian Exchange Group (NGX) covering the period 2015–2024. These sectors were selected because of their labour-intensive nature and heavy reliance on human capital, making them suitable for assessing the value relevance of HRA, as well as their strategic importance to Nigeria's manufacturing output and employment. The study period captures recent regulatory reforms and evolving workforce practices, while ensuring data reliability due to the availability of consistent, audited financial reports. A random sample of 24 listed consumer and industrial goods firms was used for the analysis.

1.7 Significance of the Study

This study would be beneficial to the following stakeholders:

Management: The result of this research is beneficial to top executives and HRM managers and professionals to change their thinking and advance better and enlightened policies about

human resource management practices. It also gives better orientation about the lapses of the current system that creates obstacles in organisational effectiveness and employee contentment.

Employees: This would enable them to engage in activities where the concepts are embraced so that they can give their best in terms of performance to the organisations. In return, managements will be encouraged to engage in activities that accentuate a positive attitude to work amongst employees from time to time in order to attract optimal performance. These were obvious by the consistency or inconsistency of appraisal results for employees within similar departments, in different work periods and schedules.

Business Practitioners: The result of this research is beneficial to business practitioners and human resources managers and professionals to change their thinking and advance better and enlightened policies about human resource management practices. It also gives better orientation about the lapses of the current system that creates obstacles in employee efficiency and contentment.

Researchers and Academia: This study was also relevant to researchers and academia that represents an offshoot from the research, the primary area of significance to which the searchlight is beamed is the corporate business world with particular reference to this study by future researchers and academia.

1.8 Limitations to the Study

The study encountered the following limitations: Appropriateness of the modelling technique was one of the limitations of the study because of the difficulty of modelling human resource accounting variables that would influence firm value. This challenge was addressed by employing panel data and an ex-post facto research design. Panel data provides richer information by combining cross-sectional and time-series observations, thereby reducing the

problem of omitted variables and improving the efficiency of estimates. This approach allowed the study to capture variations in human resource accounting variables and their influence on firm value across different firms and time periods.

The variables employed in this study include gross staff cost, training and development cost, personnel expenses, pension and gratuity cost, and health and safety cost. However, the study excludes quoted financial institutions, other financial services firms, and insurance companies from the sample. This exclusion, while necessary to maintain the focus of the research, inevitably limits the overall sample size of the study.

1.9 Operational Definition of Terms

Firm Value

The firm value is operationally seen as the worth of a business organisation. It is the equity market capitalisation of the business organisation. It is considered as one of the objectives of every organisation, which is achievable through effective management decision that brings about goodwill and sustainable profitability.

Human Resource Accounting

This is the process of identifying, measuring, and communicating human resources information for smooth operation of the business organisation.

Staff Cost

This refers to the compensation provided to employees in recognition of their mental and physical efforts toward the achievement of organizational objectives and goals. It encompasses basic salary or wages as well as fringe benefits, which represent supplementary forms of compensation granted in addition to the regular wage or salary.

Sundry Personnel Expenses

Sundry personnel expenses are operationally defined as indirect costs incurred by corporate organizations to support employee welfare. These expenses include taxes, employee social security contributions, and other mandatory or voluntary benefits provided as part of an organization's overall human resource investment.

Pension and Gratuity

Pension and gratuity are operationally defined as contributory plans designed by both public and private sector organizations, whereby employers make regular payments into a contributory fund alongside corresponding contributions from employees. The accumulated fund represents a financial reserve that forms part of the aggregate benefits received by employees upon retirement.

Training and Development Cost

Training and development cost is operationally seen as a systematic process of transforming the knowledge behaviour and motivation of the individual employees for enhancing employee performance. The training of the employees has direct contributions in the high achievements of organization which shows better performance.

Health and Safety Cost

Health and safety cost is operationally defined as expenditures incurred by organizations to ensure a safe and healthy work environment for employees. These costs include workplace safety equipment, medical check-ups, occupational health programs, accident prevention measures, and compliance with statutory safety regulations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter conceptualized and reviewed extant literature on human resource accounting and firm value. It further presents a survey of related empirical studies, a theoretical review and underpinning, as well as a summary of the empirical literature reviewed. Finally, the chapter identifies the gaps in the existing body of knowledge that the study attempted to address.

2.2 Conceptual Review

This section addresses review on firm value, human resource accounting, staff cost, training and development cost, pension and gratuity, sundry personnel expenses and health and safety cost and control variables such as firm size, firm age and firm leverage.

2.2.1 Firm Value

Firm value refers to the economic worth of a company as perceived by its shareholders, stakeholders, and the market at large. It represents the outcome of value creation and maximization efforts undertaken by the organization and has attracted significant attention from financial experts, researchers, the general public, and corporate management (Nwanna & Ivie, 2017). The maximization of firm value is considered a fundamental objective of every organization and can be achieved through effective management decisions that enhance goodwill, optimize operational efficiency, and sustain profitability. Firm value can be influenced by multiple factors, including the organization's current revenue streams, quality of future cash flows, and strategic allocation of resources (Harunan, 2008). In empirical studies,

firm value is commonly measured using market-based indicators such as Tobin's Q, market-to-book ratio, share price, or other proxies that reflect investors' perceptions of the firm's long-term financial performance. However, most successful firms has always proved to be a difficult task to many as a firm may have a high level of profitability, but at the same time be in a very bad situation regarding its liquidity and efficiency. Hieu, *et al.* (2022) defined FV as the perception of the investor towards the success of a company in relation to the firm's past, present and future performance. FV is regarded as equity market capitalization.

Ogundajo, *et al.* (2022) affirmed that firm value is the sum of a company's cash flow in its current or projected form. However, the value of the firm influences the assets and cash flow realised in the present or in the future. The cash flow statement is a statement showing the flow of cash inflow and cash outflow of corporate organsations within an accounting year end (Susmitha, *et al.,* 2021). The value maximaziation of corporate organisation can be determined by various factors which include the organisation's available income streams as well as the quality of the company`s future cash flow. Value creation is the increase in shareholders' wealth coming as a result of the firm's operational efficiency (Oladele, 2013). The market value of a share is a good indication of investors' perceptions of its business prospects especially shareholder's wealth (Hamidu & Aliyu, 2015). Stakeholders' value from the organisation can be increased through heavy investments on research and development and other issues in creativity capacity improvement. According to Chukwudi, *et al.* (2020), firm value is seen as the corporate survival of business which is based on the price paid by potential investors when the company is acquired or sold.

Safdar, *et al.* (2013) posited that available new information in the market for company developments and stock recommendations made public while papers are released on new and

different ways in which the market can be exploited. The stock market price is controlled and regulated by the forces of demand and supply in a free market economy. The movement in market value of share of quoted firms is influenced by changes in the firm's fundamental factors such as FV and macro-economic variables (Kehinde, 2012). Shareholder wealth is maximized by maximizing the difference between the market value of firm's stock and the amount of equity capital that was supplied by shareholders. The capital market is a place of contact where investors and investees sort out their business arrangement. The market is an avenue for firms to raise fresh capital for business expansion and those investors wish to invest their excess resources.

Reschiwati, *et al.* (2020) opined that share price is the determining factor that reflects the success of a firm with respect to investors' commitment. FV is generally seen as the worth of a firm given the total value of outstanding shares in the market. Ifada, *et al.* (2019) added that FV is the market value of shares and liabilities of the bank which is regarded as capital employed. FV is a tool of business valuation, portfolio analysis, accounting, financial modelling, and risk analysis explore by financial analysts and business managers in a corporate firm. Timothy, *et al.* (2020) affirmed that FV as how successful a firm is and how the managers of the firm were able to effectively explore the firm resources to generate wealth for the owners**.** Ilaboya, *et al.* (2016) stated that FV signifies the wealth maximisation of the firm in terms of performance. Firm value or performance has been looked at from the dimension of value created by the organisation for its stakeholders.

FV is the success path of the company's owner. The FV can was measured by Tobin's Q. In the studies of Oyedokun, *et al.* (2020) and Doorasamy (2021), FV was proxied by Tobin's Q. Tobin's Q is defined as the ratio of Market Value (MV) of assets (equity and debt) to the

replacement value of assets (Beiner & Schmid, 2005). Vintila and Gherghina (2014) added that Tobin's Q is calculated as the market value of assets divided by the book value of assets, where the market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity. Stock market prices are fundamental metrics for measuring firm values of corporate organisation. In the measurement of FV, this study made use of Tobin's Q ratio.

2.2.2 Tobin's Q

Tobin's Q is becoming more interesting in the light of wider interest in market-based evaluations. Granberg and Dalunde (2025) defined Tobin's Q as the ratio of a firm's market value to the replacement cost of its assets, with values greater than one indicating that the market values the firm more highly than the cost of its assets. Therefore, Tobin's Q, unlike any other parameter, gives an all-in-one shot approach to firm performance concerning market expectations of asset values and the real value of those assets. It extends its insight beyond traditional accounting measures, most of which conduct historical reporting and therefore fall short of considering intangible assets or future growth potential about assessing performance. Tobin's Q is a descriptive element of how an investor perceives the firm concerning its underlying assets. Tobin's Q has the ability to capture both tangible and intangible value, reflecting investor perceptions about future growth, profitability, and strategic capability (Wagdi & Fathi, 2024). Tobin's Q describes how an investor perceives the firm concerning its underlying assets. Thus, if Tobin's Q is above 1, it would mean that the market thinks that the future of the firm is somewhat promising, and its assets are utilised efficiently, and when it is less than 1, implies inefficiency, undervaluation, or lack of confidence of investors.

2.3 Human Resource Accounting

Human Resource Accounting (HRA), often used interchangeably with terms such as human asset accounting and intellectual capital, has been conceptualized in diverse ways within the literature. Ndum and Oranefo (2021) describe HRA as a new dimension of accounting that focuses on human capital–related expenditures, assessed against the revenue generated within a given period. Woodruff (2023) advances this view by defining HRA as the process of recording and analyzing human capital investments while disseminating accounting information to management to facilitate informed decision-making in response to systematic changes in accumulated data. Similarly, Sarkar *et al.* (2016) define HRA as the communication of human resource information to end users through the identification, estimation, and reporting of employee-related data within corporate organizations. Extending the discourse, Amah and Amauwa (2019) link HRA to the broader construct of intellectual capital, which they describe as an aggregate of intangible organizational value. Intellectual capital comprises human capital; encompassing knowledge, skills, and capabilities alongside other intangible resources that contribute to the overall value and competitiveness of the firm.

Kashive (2019) posits that Human Resource Accounting (HRA) represents organizational expenditure on human assets with the aim of positively influencing earnings. Similarly, Frederikson and Westphalen (2020) affirm that HRA constitutes an investment in human assets, encompassing the processes of identifying, measuring, and disseminating human capital information to facilitate the smooth functioning of corporate organizations. In this regard, HRA is widely regarded as a strategic investment by firms in their employees, who are conceptualized as human capital or assets. Gillies (2017) provides a useful categorization of human capital into three dimensions: **c**ompetencies (skills and expertise), attitude (motivation

and leadership qualities, particularly among top management), and intellectual agility (the ability of organizational members to think quickly, innovate, engage in entrepreneurial activity, and adapt through cross-fertilization of ideas). Expanding on this conceptualization, Wang *et al.* (2014) define human capital as encompassing learning, training, experience, knowledge, capabilities, capacities, creativity, and the core competencies of employees within an organization.

The practice of recording, identifying, measuring and assessing the potential and value of human assets in a firm and communicating the said information to the relevant stakeholders is the focus point of human resource costs (Inua &-Oziegbe, 2018 cited in Adegbayibi, *et al.,* 2024). Human investment in organisation is tied to the strength, talents, and knowledge of people in ensuring the production of goods and rendering of services. The HRA parameters that will be employed in this study include staff cost, training and development cost, sundry personnel expenses, pension and gratuity and health and safety cost.

2.3.1 Staff Cost

Staff costs form part of administrative costs of corporate firm. Staff costs could be measured by the ratio of staff cost to total revenue.. The cost is associated with salaries/wages, staff medical expenses, staff training expenses, etc. (Nangih, *et al.,* 2020). Garnero, *et al.* (2018) stressed that good wages and salaries to employees is a great motivational tool for efficient business operation, higher productivity and improved firm value. Staff cost form part of the basic salary; fringe benefits are supplementary compensation awarded to employers over and above the basic wage or salary. Klopotan, *et al.* (2018) affirmed that good salaries bring about higher motivation of employees and improved firm value.

Orwa, *et al.* (2022) defined staff cost as the total investment committed by organisation to satisfy and maintain the human asset or workforce. The staff costs are incurred to cater for the welfare of the staff for improved staff efficiency and performance. Job-Olatunji, *et al.* (2020) posited that human efficiency is based on recruiting the right human resource that is accountable and capable of managing other resources such as physical, financial, natural, and environmental resources. Liang, *et al.* (2023) staff cost incurred on skill, experience and competent employees stimulate commitment to work and drive the value of the firm. The essence of staff cost is premised on wages and-salary which is the basis of compensation for work done (Bankole, 2020). According to Israel, *et al.* (2022), staff cost is mainly seen as staff salary paid to the human asset of a business organisation on regular basis on work done. In the opinion of Wahyuni, *et al.* (2023) staff cost is built on the compensation packages manufacturing firms offered to the staff for services rendered.

2.3.2 Training and Development Cost

Training and development costs could be measured by a dummy variable: "1" for amount of money spent on training and development reported in the audited annual financial statement OTHERWISE "0" (Adegbayibi, *et al.*, 2024). Training and development activities are designed to support an effective performance appraisal process that involves establishing an ongoing communication process between employee and management, and the presence of training and development is one of the ways by which employee feels that the organisation is taking care of the problems in the organisations (Afaq, *et al.*, 2016). Training effort are staggered and discrete learning experiences organized from time to time to make employees improve on their productive efforts. Training aims at achieving four objectives namely skill acquisition, expansion of knowledge particularly the knowledge of the job one is employed to do, the

acquisition of the right attitude to work and adaptation to new work environment. According to Anidebe, *et al.* (2021), Research and development cost is a dimension among corporate organization in order to maximize value and to sustain the level of competition.

Salau, *et al.,* (2014) maintained that induction and staff attitude towards retention and organisational effectiveness indicates that work attitude tends to be favourable when organisations facilitate industrial harmony, affection, recognition, friendliness, freedom which is very important for enhancing organisational performance. The opportunity offer to employee through training has a direct contribution to overall achievements of organisational goals (Ibrahim, *et al.,* 2013). Expenditures incurred by corporate organistion in relation to training and development are also referred to as research and development (R&D) expenditure. Corporate organistion made these expenses for the purpose of enhancing the value of the firm overtime. Timidi and Ine-Tonbarapa (2023) opined that training cost is the greatest assets of corporate organisation which is aimed at capacity building and sustaining economic growth and development of the firm. In addition, Muriuki and Wanyoike (2021) maintained that training and development cost is a vital performance appraisal system that influences the value of the firm and performance.

Khawaja and Nadeem (2018) contend that training is an organizational activity designed to enhance employee awareness and skill acquisition, thereby contributing to the growth of human capital and improving overall corporate performance. Training not only enhances employee output but also bridges the gap between current performance levels and the optimal performance required. Similarly, Berber *et al.* (2017) highlight that training opportunities play a critical role in attracting and retaining valuable employees, while also fostering job satisfaction and motivating individuals to achieve higher levels of performance. From this perspective,

Jahan (2015) views workplace learning opportunities as processes that inspire and educate employees to effectively fulfill their roles in alignment with organizational goals.

Training and development costs represent expenditures incurred by firms to build employee capacity and strengthen staff competencies with the objective of maximizing corporate wealth (Nangih *et al.,* 2020). Such costs are considered investments in human capital that enhance employee skills and capabilities, ultimately leading to increased future sales, profits, and cash flows. Armstrong (2018) further emphasizes that training constitutes a systematic and formal change in individual behavior, achieved through planned learning experiences and structured instruction.

2.3.3 Pension and Gratuity

Pension and gratuity is measured by prior studies as cost incurred on pension and gratuity reported in the audited annual financial statement for the periods scaled by total revenue. Pension and gratuity are important components of employee welfare at the workplace and are often regarded as motivational tools that strengthen the employment relationship. Adegbayibi *et al.* (2024) noted that retirement benefits constitute a significant proportion of post-retirement costs, including pension plans, employer contributions to pension funds, and gratuity payments. However, the structure and sustainability of contributory pension schemes vary across advanced and emerging economies. In many cases, these schemes face challenges such as fiscal pressures on central budgets to cover deficits, demographic changes that undermine long-term sustainability, and an inability to consistently provide adequate benefits to employees. Smart (2015) observed that contributory pension systems in advanced economies such as the United States and the United Kingdom, as well as in emerging economies like Chile and Mexico, have undergone substantial reforms to address such challenges. In Nigeria, contributory pension

schemes introduced through the pension reforms of 2004 and 2014 were designed to ensure a more reliable system of retirement benefits for workers (Unachukwu *et al.*, 2020).

Despite these reforms, several challenges persist. Ketkaew *et al.* (2022) emphasized the role of governments, pension fund administrators, and financial institutions in raising awareness and encouraging employees to plan for retirement before reaching the pensionable age of 60. However, in Nigeria, delays in the payment of pensions and gratuities have subjected many retirees to severe hardship and, in some cases, premature death. Consequently, retirement is often perceived with apprehension rather than anticipation. This situation is exacerbated by poor planning and management of post-retirement life, as many employees enter retirement without adequate personal savings or pre-retirement counseling. Employers, for their part, have also failed to provide sufficient enlightenment programs to prepare workers for retirement. Oladeinde (2021) argued that effective pension administration is particularly critical in aging populations, where economic insecurity is becoming increasingly pervasive. Yet, in Nigeria, pension fund management remains fraught with inefficiencies. Ibeme and Aniche (2016) noted that the contributory pension scheme is still at a "crawling stage," largely due to poor implementation and mismanagement by government agencies and pension fund administrators. This has fueled widespread public outcry over the ineffective management of pension funds, raising concerns about transparency, accountability, and the overall credibility of the system.

Pension contribution plan is design by public and private sector organisations in which an employer pays certain amount of money regularly into the contributory fund while the employee also pays certain amount of money into the same contributory fund which forms the aggregate (salary, allowance) of what the employee gets at the time of retirement (Egbe, 2013). Ahmed, *et al.* (2016) cited in Ekwunife, *et al.* (2019) added that contribution pension benefit is

the money set aside either by employer or employee in a going concern business organisation to ensure that at retirement, the staff has to fall back on after service. This indicates that employee contribution in terms of pension and retirement plan cannot be devoid of challenges, issues of accuracy and timeliness in the remittance of benefits to the deserving staff. The gratuity is a retirement plan enables the employee to a positive feeling of financial security upon retirement (Dugguh & Iliya, 2018). It is perceived that contributory pension improve the quality of life for employee and providing a level of protection and financial security for workers and for their family members after retiring from the paid employment (Oaya, *et al.,* 2019).

2.3.4 Sundry Personnel Expenses

Sundry personnel expenses are conceptualized as encompassing both management costs and indirect costs, which serve as a foundation for sustaining firm value and enhancing organizational performance (Okezie *et al.,* 2017), and it could be measured by cost incurred on personnel expenses scaled by total revenue. The sundry personnel expenses are critical for the continuous operations of the firm. Oracle (2015) cited in Okezie, *et al.,* 2017) affirmed that indirect cost aid the strategic and tactical planning of the firm. The personnel cost of corporate organisations covered expenses on taxes, employee social security contributions, and pensions as part of employee benefits in a workplace (Ozovehe, 2024). According to Bullen and Eyler (2013), the cost of human resource is mainly on personnel costs incurred by manufacturing firm which is spent on selection and hiring of staff, training and development, salaries and-wages, retirement benefits, allowances, social welfare, and medical expenses of staff respectively.

2.3.5 Health and Safety Cost

Health and safety cost is seen as staff medical expenses for sustaining the good health of the employees (Nangih, *et al.,* 2020). It could be measured in literature by a dummy variable: "1"

for expenditure on health and safety cost reported in the audited annual financial statement for the periods OTHERWISE “0” (Agubata, *et al.*, 2022). Investments of manufacturing firm on health and safety cost, staff costs, training costs, and pensions as part of HRA costs contribute immensely to the value of the firm (Nwauzor & Longjohn, 2020). The HRA is made up of indirect cost incurred on health insurance, retirement contributions, paid time off, and other related non-monetary incentives for sustaining the human resources of firm (Vithana, *et al.,* 2023). The health and safety cost is used to take care of the well-being of the staff in a workplace. The well-being of staff is a function of psychological outcomes are lack of distress, anxiety and emotional exhaustion and physiological outcomes are blood pressure, heart condition, and general physical exhaustion. Staff well-being is the state of individuals’ psychological, physical, social, economic and general health in relation to satisfaction at work and outside workplace (Nielsena, *et al.,* 2017).

The workplace well-being is characteristed by the pleasure and displeasure obtains from job engagement and individuals’ interactions with colleagues, teammates, and supervisors. According to Bangara, *et al.* (2024), disclosure of human resources or capital is made up of eemployee competence and capabilities, employee diversity, employee loyalty and motivation, human resource development, employee, health and safety, alignment and support of the organizations governance structure, implementing organizations strategy, and capability to lead and collaborate.

The health and safety of employee is given considerable interest by management because health employee is a productive and efficient workforce that will contribute immensely to the value of the firm. Workplace human resources enable the staff to be successfully engaged and work for the achievement of job tasks and goals (Bakker & Demerouti, 2007). The presence of available

resources is a driving force for improve well-being of the employees to perform credibly (Balducci, *et al.,* 2011). Therefore, the resources that enhance the well-being of the staff are self-efficacy, competence, and self-esteem and for maintaining competitive advantage in the global business world (Känsäläe, *et al.,* 2017).

2.3.6 Control Variables

The control variables used in this study were firm size, firm age and firm leverage..

2.3.6.1 Firm Size

Firm size has been conceptualized in the literature using various indicators such as total assets, revenue, scale of operations, number of employees, and market capitalization (Esan *et al.*, 2023; Mansour *et al.*, 2023). Larger firms are generally expected to enjoy the advantages of economies of scale, diversified operations, and greater visibility in capital markets, which in turn enhance performance and strengthen investor confidence. Esan *et al.* (2023) further observed that large firms tend to manage their cash balances more efficiently than smaller firms, leveraging their reputation and the scrutiny of financial analysts to optimize resource allocation.

Firm size has been widely employed as a control variable in empirical research, particularly in studies exploring the relationship between human resource accounting (HRA) and firm value (Timidi & Ine-Tonbarapa, 2023). This is largely because firm size reflects the scale and magnitude of a company's operations, which has significant implications for financial decision-making, organizational performance, and market positioning. Firm size is considered a major control variable in HRA–firm value studies, as it influences virtually all aspects of organizational functioning, including operational efficiency, access to resources, market power,

and strategic behavior. Hussaini and Fadjarenie (2022) conceptualize firm size as the assessment of a company's overall scale. Theoretically, larger firms are assumed to face higher agency problems due to the complexities of managing extensive operations and dispersed ownership. However, empirical findings suggest that the advantages of larger firm size may outweigh such challenges. For instance, Okoye *et al.* (2020) examined the effect of corporate governance on the financial performance of commercial banks in Nigeria and found that firm size exerted a positive impact on performance, measured by return on assets (ROA). Similarly, Mustapha *et al.* (2020), using a sample of fifteen banks listed on the Nigerian Stock Exchange between 2013 and 2015, investigated the relationship between corporate governance and financial performance. Their results, based on random effects regression, revealed a significant positive relationship between firm size and financial performance.

2.3.6.2 Firm Age

Firm age is mostly explored as control variable in academic research. Firm age has the likelihood of influencing business performance and that the nature of this relationship depends on the nature of the tasks involved and on the business area in which an organisation is active. Firm age is seen as the life cycle of the business organisation which might influence the value of the firm. Ashharia and Faizala (2018) argued that older firms have the tendency of witnessing more stable cash flows and lower growth opportunities than younger firms to achieve the compensation strategy of the organisation. Akenroye, *et al.* (2022) used the ex-post facto research design to examine the effect of firms' attributes firm performance of quoted companies in Nigeria, and established that firm age had no significant effect on firm performance and firm value. Uzoka, *et al.* (2020) studied the effect of firm attributes on firm performance through an interaction approach by applying ex-post facto and panel research

design, and found out that firm age and corporate stability exert negative no significant effect on firm performance leading credence to firm value.

2.3.6.3 Firm Leverage

Leverage is widely conceptualised and measured by the ratio of total liabilities to total assets (Baffa, *et al*., 2023). Firm leverage is the size of the debt component of a company and it might have the likelihood of influencing the value of the firm. It is seen as the quantity of debts corporate organisations employs to acquire assets, increase corporate performance, establish, or purchase a new company (Igbal & Usman, 2018). Ofulue, *et al*. (2022) defined firm leverage as the total sum of liability (debt) corporate organisation utilizes to support, finance as well sponsor corporate assets. Firm leverage is a finance model explored by management of consumer goods and industrial goods manufacturing companies to improve production efficiency through new asset acquisition in the actualization of the firm's goal which is premised on the maximization of the shareholders' wealth. Firm leverage is a concept that deals with the ability of an organisation to utilize the assets or funds that a fixed load to augment the degree of earnings for corporate owner and thereby affecting the value of firm positively (Onifade, *et al*., 2021).

Leverage is a key element of the capital structure of Nigerian listed consumer and industrial goods firms, affecting their financial flexibility and ability to invest in human capital. While high leverage limits resources for employee development and weakens Human Resource Accounting (HRA), optimal leverage supports better compensation, training, and talent retention. Leverage also shapes firm value: excessive debt raises financial risk and lowers value, whereas moderate leverage offers tax benefits and enhances investment capacity, boosting profitability. Strong HRA further improves productivity and contributes to higher firm

value. Overall, leverage plays a central role by influencing HRA, which in turn affects firm value. Optimal leverage enhances both, while excessive leverage diminishes them.

2.4 Empirical Review

The empirical review was carried out in accordance with the objectives of the study.

2.4.1 Staff Cost and Firm Value

Kankpang, *et al.* (2024) studied the effect of human resource cost (HRC) on firm profitability in Nigeria. The aim of the study is to investigate the effect of staff remuneration cost, staff size and staff training and development on profitability proxied PAT. Ex-post facto research design was adopted to sample 15 oil and gas companies quoted on NGX for the period of 2011 to 2021, and analysed using descriptive statistics and robust random effect estimation method. The results showed that staff remuneration cost and staff training and development cost exert a significant positive relationship with PAT while staff size exerts significant negative effect on PAT. Timidi and Ine-Tonbarapa (2023) conducted a study on the relationship between human assets accounting and financial performance of listed commercial banks in Nigeria. The aim of the study to examine the relationship between staff compensation cost recruitment, hiring costs and financial performance proxied by ROA. The study explored the use of ex-post facto research design sample twelve (12) money deposit banks for the period of 2020, and analyzed with descriptive statistics and lease square panel data regression. The results showed that staff compensation cost, recruitment and hiring costs exert a significant positive relationship with ROA while firm size as a control variable has a significant relationship between human asset accounting and ROA.

Nwachukwu and Worlu (2023) studied the connection between sales force compensation and sales performance in Nigeria. The study used cross-sectional survey research design to collect primary data through the administration of questionnaires to 381 respondents from 127 bakery firms registered in Yellow Pages Directory of Rivers State Ministry of Commerce & Industry among bakery firms in Port Harcourt through census sampling technique. The Spearman rank correlation coefficient result showed that salary strongly promotes productivity and profitability of bakery firms. Israel, *et al.* (2022) studied the influence of human resource expenditure on financial performance in Nigeria. Secondary data were used to sample 52 listed manufacturing firms and analysed using multivariate econometric regression. The results revealed that staff salaries, wages and allowances exert a positive and significant influence on financial performance measured by ROE.

In Nigeria, Mohammed, *et al.* (2022) examined the impact of human capital investment on firm's value of listed agribusiness firms. Human capital investment was proxied by directors remuneration and staff salaries and wages cost and firm value measured by Tobin Q. Ex-post facto research design was used to sample thirteen (13) agri-business listed firms for the period of 2011 to 2020 and analysed with descriptive statistics, correlation matrix and panel multiple regressions. The results showed that staff salaries and wages costs exert a negative and significant effect on firm value while director's remuneration exerts a negative and no significant effect on firm value. Ndum and Oranefo (2021) used ex-post-facto research design to examine the effect of human resource cost on financial performance in Nigeria. Secondary data were collected from a sample of 5 breweries companies quoted on NGX for the time frame of 2007 to 2019, and proxied financial performance by PATM and ROA. The result showed that staff cost exhibits a significant positive effect on PATM while no significant positive effect on ROA.

Nangih, *et al.* (2020) studied the relationship between staff costs and profitability in Nigeria. The aim of the study is to examine the relationship between staff salaries, medical expenses and training costs on profitability measured by profit margin. Secondary data were collected a sample of five (5) listed oil and gas firms for the period of 2013 to 2018 through judgmental sampling technique, and analysed using descriptive, correlation and regression technique. The empirical findings revealed that staff salaries and training costs exert a positive and significant relationship with profit margin and medical expenses exert a negative and significant relationship with profit margin.

Nwauzor and Longjohn (2020) sample nine (9) oil and gas to investigate HRA and firm performance in Nigeria for the period of 2018. The secondary data collected were analyse using OLS regression technique. The results revealed that compensation cost exerts a significant positive effect on firm performance at p-value < 0.05, and firm size exerts a moderating and non-significant effect on the relationship between HRA and firm performance. Inua and Oziegbe (2018) studied the effect of HRA on financial performance. HRA was proxied by staff cost, staff strength, director remuneration, and firm size. Secondary data was gathered through ex-post-facto research design from selected Nigerian banks and regression analysis to analysed the data. The regression results showed that staff cost, staff strength and firm size exhibit a significant effect on financial performance while director remuneration exhibit non-significant effect on financial performance.

In Nigeria, Asaju and Yarie (2017) carried out a study on assessment of the influence of extrinsic rewards on performance of senior non-teaching staff of Federal College of Education Zaria. Primary data collected through the administration of questionnaire and analysed using descriptive statistics and least square regression technique. The regression results show that

salaries had a significant influence on employee performance. Nagaraju and Pooja (2017) studied the impact of salary on employee performance in Pakistan. They made up use of survey research design where questionnaire were distributed to 150 employees working in different public and private sector banks. The data collected were analyzed using descriptive techniques and regression technique. The results showed that salary has positive impact on employee performance. Nnorom, *et al.* (2016) studied the effect of compensation administration on employee productivity in Nigeria. Primary data were gathered through the distribution of questionnaire to employees of Dangote Plc in Lagos and analysed using descriptive statistics and least square regression technique. The result showed that compensation exerts a significant positive effect on employee productivity.

2.4.2 Training and Development Cost and Firm Value

Ozovehe (2024) studied the effect of effect of HRA cost information on investment decision. The study proxied HRA cost information by training and development cost, personnel cost and investment decision proxied by ROI with firm size serving as a control variable. The study made use of ex-post facto research design was used to sample 15 listed assurance companies through purposive sampling techniques for the period of 2013 to 2022 and panel regression analysis. The empirical results show that training and development costs and personnel costs exert a positive and significant effect on ROI. Ogundajo, *et al.* (2022) carried a study in Nigeria on the impact of HRA disclosure on firm value. HRA disclosure was proxied by employee training and development and employee information. Ex-post facto research design was adopted to collected secondary data from some selected firm in NGX from 2011 to 2022 and analysed with unit root, cointegration test, descriptive statistics, correlation analysis and panel regression. The empirical evidence showed that employee training and development disclosure

exhibit a significant negative impact on firm value at 1% level of significance while employee information disclosure exhibit a significant positive impact on firm value at 1% level of significance. This means that HRA exhibit a significant impact on a firm value.

Anidebe, *et al.* (2021) conducted a study on the effect of research and development expenditures on firm value in Nigeria. The study made use of ex-post facto research design to sample seven (7) out of thirteen (13) industrial goods companies listed on NGX for the period of 2010 to 2019 through purposive sampling technique. The firm value was proxied Tobin's Q, earnings per share, market price per share while the multiple regressions technique to analyse the data. The results showed that research and development expenditures had no significant effect on firm value. Onyekwelu and Ironkwe (2021) carried out a study on the influence of HRA on corporate financial performance. HRA The study made use of ex-post facto research design to sample 12 quoted insurance companies in Nigeria covering the period of 2012 to 2017, and the least square regression analysis to analyse the data. The findings revealed that disclosure of human resource HRA and training costs experience a significant positive influence on financial performance measured by ROA and ROE.

Ozioma and Udeh (2021) examined the effect of HRA on firm value in Nigeria. The proxied HRA by staff training and development cost and staff number while firm value was measured by Tobin Q and PEPS. A study employed ex-post facto research design to sample 76 out of 116 non-financial firms on the NGX from 2010 to 2020 with the help of purposive sampling technique and linear structural relations to analyse the daa. Data were sourced from annual reports and accounts and Nigerian stock exchange fact book 2020. The findings revealed that staff training and development cost and staff number exert no significant positive effect on firm value. This indicates that HRA has does not influence firm value. In Turkey, Erdogan and

Adilya (2019) cited Anidebe, *et al.* (2021) studied the effect of R&D expenditures on financial performance. The study proxied financial performance by assets (ROA), return on equity (ROE) while the ratio of R&D intensity and R&D expenditures over total sales served as explanatory variables. The study made use of secondary data collected from a sample of 62 production companies listed in Borsa Istanbul covering 2008 to 2017 and analysed panel data estimation method. The empirical evidence depicts the presence of non-linear relationship between R&D expenditures and financial performance.

Adetoun, *et al.* (2020) examined the effect of HRA disclosures on financial performance. Secondary data were collected a sample of 5 manufacturing companies in Nigeria from 2015 to 2019, and analysed using multiple regression analysis. The results of the investigation revealed that raining & development cost and staff cost exert a significant positive effect on the financial performance. Manukaji, *et al.* (2019) used ex post-facto research design to assess the effect of human-resources development on performance in Nigeria measured by ROA covering the period of 2014 to 2018. The descriptive-statistics, correlation test and ordinary least-square estimation technique was used to analyse the data. The training and development cost and employee remuneration exhibit a significant effect on performance, and size of employees exhibit no significant effect on performance.

Tafamel and Akrawah (2018) examined whether employee training and development had any effect on firm profitability. Secondary data were gathered from a sample of thirty (30) quoted manufacturing companies randomly selected for the period of 2012 to 2016 and analysed using robust least square regression technique. The empirical evidence showed that employee training and development had a robust effect of firm profitability at 5% level of significance. Afaq, *et al.* (2016) carried out a study on the impact of training and development of employees on

employee performance through job satisfaction in Pakistan and they employed a survey research design and OLS regression technique for the data analysis. The result showed that training and development has a significant impact on employee productivity.

2.4.3 Pension and Gratuity and Firm Value

Adegbayibi, *et al.* (2024) did a study on the effect of human resources costs on financial performance of listed manufacturing firms in Nigeria. Human resources costs were proxied by retirement benefit, employees training costs and compensation costs while financial performance measured by ROA. The ex-post facto research design was used to sample 41 listed manufacturing firms for the period of 2011 to 2020, and analyzed using descriptive statistics and regression analysis. The findings revealed retirement benefit exerts a negative and no significant effect on ROA while compensation costs exerts a negative and significant effect on ROA at 1% and employees training costs exerts a positive and significant effect on ROA at 1%. Chikaire-Ofoego and Egolum (2024) studied the effect of employee cost on the financial performance in Nigeria. The study proxied employee cost by employee retirement benefits, employee salaries and employee bonuses on financial performance measured by PBT. Ex-post facto research design was adopted to sample 26 firms out of 75 firms listed manufacturing firms covering 2013 to 2022 through purposive sampling technique, and Pooled OLS regression to analyse the data. The findings showed that employee retirement benefits exert a significant positive effect on PBT at 5% level of significance, and employee salaries exert non-significant positive effect on PBT at p-value > 0.05 while employee bonuses exert no significant negative effect on PBT at p-value > 0.05.

Bankole (2020) studied the effect of human-resource cost on financial performance measured by ROA in Nigeria. Secondary data were collected of listed consumer goods firms on NGX

covering the period of 2009 to 2018, and pooled ordinary least-square to analyse data. The empirical results revealed that pension cost, director's emolument and gratuity cost strongly promote financial performance. Olajumoke (2020) sample 10 consumer goods companies in Nigeria for the period of 2009 to 2018 to investigate the effect of human resource cost on financial performance. The human resource cost was proxied by pension cost, director's emolument, gratuity cost and salary and wages while performance measured by ROA. Secondary data collected were analysed using pooled OLS, fixed effect model, and random effect model. The finding showed that pension cost, director's emolument and gratuity cost has a significant positive effect on ROA while salary and wages has no significant positive effect on ROA. Oko (2018) sample ten (10) MDBs in Nigeria to investigate the effect of HRA on firm profitability. The HRA was proxied by staff salary, and staff retirement benefits on firm profitability. The paired t-test statistical tool was used to analyze the data. The result showed that staff retirement benefits and staff salary exerts a positive and significant effect on firm profitability.

2.4.4 Sundry Personnel Expenses and Firm Value

Orwa, *et al.* (2022) investigated the relationship between personnel costs and financial performance in Kenya. The study used panel data to sample of 57 listed companies from 2017 to 2021, and analysed using Generalized Least Square regression technique. The empirical findings revealed indicated that personnel costs exert a positive and significant relationship with financial performance. This indicates the personnel costs promote the performance of the firm. Adewumi, *et al.* (2021) conducted a study on the effect of human resource disclosures on shareholder value measured by share price in Nigeria. The study made use of longitudinal and correlational methods to sample some listed industrial firms on NGX covering the period of

2011 to 2018 and analysed using quantile regression, descriptive statistics, and correlation. The findings revealed that the human resources disclosure has a significant influence on shareholder value with ordinary, above-average or even below-average company value at 5% level of significance.

Liang, *et al.* (2020) conducted a study on administrative expenses and firm value in China. Administrative expenses were proxied by employee training expenses, employee education expenses, technology development expenses and firm value was measured by operating profit. Secondary data was collected from firms listed on Chinese Stock Market. The regression results showed that administrative expenses exert a significant and positive influence on operating profit. This implies that employee training expenses, employee education expenses, technology development expenses strongly contribute to firm value. In India, Sapra and Jain (2019) studied the influence of HRA on firm's value. The study aimed to examine the influence of training expenses, staff compensation, staff welfare and PAT per 1000 employee while firm value proxied by market capitalization and TA. Secondary data was gathered from BSE-310 companies for the period of 2018 and analyzed using multiple regression model. The results showed that staff welfare and training expenses and PAT per 1000 employee exert a significant positive influence on market capitalization and total assets while staff compensation exerts no significant influence on market capitalization, and significant negative influence on TA.

Okezie, *et al.* (2017) studied the effect of indirect costs on firm performance of quoted companies in Nigeria. The indirect costs were proxied by power and electricity, rent charges and employees' salaries as the independent variable while ROA was used to proxied firm performance. Secondary data were collected from a sample of five (5) quoted companies covering the period of 2011 to 2015 and analysed using descriptive statistics and multiple

regressions. The empirical evidence revealed that power and electricity and rent charges exert a significant positive effect on ROA while employees' salaries exert an non-significant negative effect on ROA. Omodero and Ihendinihu (2017) cited in Adegbayibi, *et al.,* (2024) carried out a study on HRA and financial performance in Nigeria. The aim of the study is to investigate the effect of personnel benefit cost on financial performance proxied by PAT and net asset. The secondary data collected were analysed using multiple regression analysis. The empirical evidence revealed that personnel benefit cost exhibit a significant positive effect on the PAT, and significant negative effect on net asset.

2.4.5 Health and Safety Cost and Firm Value

Bangara, *et al.* (2024) conducted a study on the connection between human capital disclosure, business model and firm value in Kenya. Secondary data was gathered from a sample of 137 listed companies in Kenya and South Africa for the period of 2018 to 2020 through purposive sampling technique. The study was braced on the Stakeholder and legitimacy theories. The data collected was analysed using descriptive statistics, Pearson correlation analysis and stepwise regression method. The empirical findings showed that health and safety cost disclosure exerts a significant and a positive relationship with firm value in South Africa while inverse relationship with firm value in Kenya. Muthoni, *et al.* (2024) carried out a study in Kenya on the influence of human capital disclosure on firm value measured by Tobin Q. A correlational and longitudinal research design was used to sample 62 firms listed on Nairobi Securities Exchange from 2017 to 2021 through census sampling technique. The descriptive correlation analysis and inferential statistics were used to analyse the data. The results showed that human capital disclosure had a positive and significant influence on Tobin Q at p-value <0.05.

Agubata, *et al.* (2022) studied the impact of employee benefits on the growth in Nigeria. The study sample 10 consumer goods companies listed on NGX for the period of 2012 to 2019, and descriptive statistics, Pearson correlation and panel regression to analyse the data. The fixed effect regression results showed that medical allowance, employee benefits, gratuity and pension exhibit a significant positive impact on organisational growth. Putra and Ratnadi (2021) conducted a study on the relationship between intellectual capital and firm value. Secondary data were collected from a sample of Indonesian banking industries, and analysed using descriptive statistics and multiple regression technique. The empirical evidence revealed that health and safety cost has a significant positive relationship with firm value. This implies that a positive relationship exists between human resource disclosure and firm value.

Noorazem, *et al.* (2021) carried out a study in Malaysia on the relationship between reward system and employee performance. The study made use of survey research design where questionnaires were administered to132 respondents in Perlis and Penang region of Malaysia, and the correlations analysis and regression analysis were employed to analysed the data. The findings revealed that medical benefits, salary, bonuses, appreciation exerts a significant positive relationship with employees' performance. Udeh (2021) cited in Ozioma and Udeh (2021) carried out study in Nigeria on the impact of HRA on firm value. Ex-post facto research design was sample secondary data from DMBs from 2010 to 2015 and multiple regressions to analyse data. The result showed that health and safety cost The result showed that health and safety, staff training and development cost and staff number exert no significant impact on firm value measured by earning per shares exerts no significant impact on firm value measured by earning per shares.

Onyekwelu, *et al.* (2019) studied the relationship between HRA and firm performance in Nigeria. The study made use of cross-sectional research design to survey seven (7) companies quoted on the NGX period covering 2006 to 2010 as well as the distribution of questionnaire to 260 respondents and the principle component analysis to analysed the data. The empirical results showed that HRA variable of health and safety cost has a significant positive relationship with firm performance.

2.5 Theoretical Review

In this study, relevant theories were developed to explain the subject matter. However, the study was anchored on the human capital theory.

2.5.1 The Human Capital Theory

The theory of human capital was originally proposed by Schultz (1961) and later advanced by Nobel Prize winning economist Gary S. Becker in his seminal work Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (1964), which focused on the economics of employer provided training. Therefore, human capital theory advocates that education or training impart useful knowledge and skills to workers, which in turn increase their productivity and value creation for the shareholders (Becker, 1964). He distinguishes between specific human capital and general human capital, specific human capital includes expertise acquired through education and training which is specific to a particular firm while general human capital on the other hand, is knowledge gained through education and training which is valuable across board (e.g., reading and writing). Human capital itself is a composite of an individual or workforce's knowledge, skills, and life experience, and higher levels of human capital are expected to yield increased wages and FV.

Human capital theory provides some support for rising wages with employee experience and differential wages across occupations. The theory postulates that huge capital expenditure in training and development of staff through education and research towards increasing staff productivity and the value of the firm through knowledge and skills (Kankpang, *et al.*, 2024). Human capital theory is essentially applicable to this work since human resource itself is a major construct of HRA and an anchor for productive activities of manufacturing firm. Therefore, the theory was used to underpin this study.

2.5.2 Agency Theory

The agency theory was developed by Jensen and Meckley in the year 1976. The principle of maximisation of wealth for stakeholders is witness in the agency theory, based on the fact that the management have no intention of personal gain been conserved in the audited financial statement because they do not command huge investments in the company that would make them practice earnings management in the reporting of abnormal profits as agents of the shareholders (Li, *et al.*, 2017). The theory describes the conflicts that arise as a result of the separation of ownership and control. There is considerable information asymmetry between the agent and the principal.

The principal-agent theory was based on the preference of the principal is profit maximization; while the preference of the agent is utility maximization (including both emolument and discretionary profits) conflicts may arise. The agency theory is used to map up financial incentives in collaboration with strong board governance practice to restore the shareholders or principal's interest to improve the value of the firm (Ben-Fatma & Chouaibi, 2023). Profit maximization would go hand in hand if more emoluments would always lead to better management practice. Tirole (2006) argued that if agency conflict is eliminated, the various

categories of firm owners as well as management will pursue the maximization of wealth. It therefore means that the shareholding structure of a company can go a long way to explain the worth of the company even though the exact link is still a subject of debate among scholars.

Agency theory is premised on the notion that, at the inception of a company, ownership and management are typically unified, with the owners directly managing the firm. However, as organizations expand, ownership and control become separated, such that shareholders (principals) appoint professional managers (agents) to oversee day-to-day operations. This delegation creates an agency relationship in which shareholders expect managers to act in their best interests (Jensen & Meckling, 1976). Agency theory assumes that managers, like most employees, are self-interested, individualistic, and boundedly rational, often prioritizing rewards and punishments over long-term organizational goals. Within this framework, shareholders' central interest lies in profit maximization, while managers are responsible for implementing strategies that align organizational outcomes with this objective.

A critical concern in agency relationships is the emergence of agency costs; the inefficiencies that arise when managers pursue personal benefits at the expense of shareholder wealth. For instance, managers may under-invest in intangible assets such as human capital because the returns are long-term and less visible, while prioritizing short-term strategies that immediately enhance reported profits. Bhagat and Bolton (2019) argue that in firms with weak governance structures, concentrated investors often deploy monitoring mechanisms to reduce agency costs and enhance firm value. However, such mechanisms are not always sufficient, particularly when key investments, like those in human resources are not transparently reported.

This is where Human Resource Accounting (HRA) becomes particularly relevant. By systematically identifying, measuring, and disclosing human capital investments such as

training and development, pension and gratuity obligations, and health and safety costs, HRA reduces information asymmetry between managers and shareholders. Transparent reporting of human resource expenditures allows investors to assess whether managers are making strategic, value-enhancing decisions regarding the firm's most critical asset, its people. In this way, HRA provides a monitoring function that directly mitigates agency problems.

Finally, agency theory has limitations in fully capturing the role of HRA. First, it assumes managers are primarily motivated by self-interest, overlooking scenarios where managers may be intrinsically motivated to invest in employees' development as a means of long-term value creation. Second, its shareholder-centric focus underestimates the broader stakeholder perspective, where employees, regulators, and society also benefit from robust human capital investments. Third, it reduces complex employment relationships to contractual and financial terms, disregarding the social, psychological, and cultural factors that influence human resource practices.

2.5.3 Resource-Based View (RBV) Theory

The Resource-Based View (RBV), popularized by Barney (1991), emphasizes that a firm's resources and capabilities are the primary drivers of sustained competitive advantage and value creation. According to RBV, resources are valuable, rare, inimitable, and non-substitutable (VRIN), and human resources constitute a critical strategic asset under this framework. Employees' skills, knowledge, experience, and competencies are unique resources that enable firms to innovate, adapt to market changes, and maintain superior performance.

From an HRA perspective, RBV justifies the systematic identification, valuation, and disclosure of human capital investments. By accounting for training, development, pension and gratuity,

health and safety costs, and sundry personnel expenses, firms recognize their human capital as a strategic resource that drives long-term firm value. RBV complements Human Capital Theory by highlighting the strategic, firm-specific advantages of investing in employees, while also addressing Agency Theory's limitation by framing human capital as a source of competitive advantage rather than just a cost item.

In this study, the integration of Human Capital Theory, Agency Theory, and Resource-Based View provides a robust theoretical foundation. Human Capital Theory underscores the productivity-enhancing role of employee skills, Agency Theory explains the need for transparency and accountability in reporting human resource investments, and RBV positions human capital as a strategic asset that contributes uniquely to firm value. Together, these theories justify the inclusion of comprehensive HRA variables training and development, pension and gratuity, sundry personnel expenses, and health and safety costs as determinants of firm value in Nigerian firms.

2.6 Summary of Empirical Studies

This sub-section presents a summary of recent empirical studies related to the topic of study, as represented in a tabulated form shown below.

Table 2.1: Summary of Empirical Studies

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
1	Uagbale-Ekatah *et al.* (2025)	Examine impact of HRA on healthcare firms' performance	Secondary data from listed healthcare firms; Analysis unspecified	HRA (training, development, welfare) improves profitability and efficiency

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
2	Adegbie *et al.* (2025)	Assess HRA impact with corporate governance as moderator	Panel data regression; Secondary data from manufacturing firms	HRA improves firm value; corporate governance strengthens this effect
3	Omolaye (2025)	Examine HRA and financial performance in insurance firms	Secondary data from 10 insurance firms (2020–2024); Panel regression	Training improves profit; gratuity negatively affects profit; overall HRA strengthens performance
4	Ekpo *et al*. (2025)	Examine HRA effect on corporate performance	Secondary data from listed manufacturing firms; Analysis unspecified	HRA (training, welfare) enhances profitability, efficiency, and competitiveness
5	Akaegbobi *et al.* (2025)	Investigate HRA impact on deposit money banks	Secondary data from banks; Regression analysis	HRA significantly enhances profitability, efficiency, and returns
6	Odewusi *et al.* (2025)	To examine the effect of human resource accounting on firm value in manufacturing firms	Ex-post facto design using secondary data from 28 listed firms in NGX (2009-2023); multiple regression analysis	The findings revealed HRA significantly enhances firm value, corporate governance enhances the effect.
7	Adegbayibi, *et al.* (2024)	The effect of human resources costs on financial performance in Nigeria	Ex-post facto research design, descriptive statistics and regression analysis	The findings revealed retirement benefit exerts a negative and no significant effect on ROA while compensation costs exerts a negative and significant effect on ROA at 1% and employees training costs exerts a positive and significant effect on ROA at 1%.

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
8	Ozovehe (2024)	The effect of effect of HRA cost information on investment decision in Nigeria	Ex-post facto research design, purposive sampling techniques and panel regression analysis	The empirical showed that training and development costs and personnel costs exert a positive and significant effect on ROI
9	Kankpang, *et al.* (2024)	To investigate the effect of human resource cost on firm profitability in Nigeria	Ex-post facto research design, descriptive statistics and robust random effect estimation method	The results showed that staff remuneration cost and staff training and development cost exert a significant positive relationship with PAT while staff size exerts significant negative effect on PAT
10	Chikaire-Ofoego and Egolum (2024)	Effect of employee cost on the financial performance in Nigeria	Ex-post facto research design, purposive sampling technique, and Pooled OLS regression	The findings showed that employee retirement benefits exert a significant positive effect on PBT at 5% level of significance, and employee salaries exert non-significant positive effect on PBT at p-value > 0.05 while employee bonuses exert no significant negative effect on PBT at p-value > 0.05.
11	Bangara, *et al.* (2024)	The connection between human capital disclosure, business model and firm value in Kenya	Secondary data, descriptive statistics, Pearson correlation analysis and stepwise regression	The empirical findings showed that health and safety cost disclosure exerts a significant and a positive relationship with firm value in South Africa while inverse relationship with firm value in Kenya

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
12	Muthoni, *et al.* (2024)	The influence of human capital disclosure on firm value in Kenya	Correlational and longitudinal research design, census sampling technique. The descriptive correlation analysis and inferential statistics	The results showed that human capital disclosure had a positive and significant influence on Tobin Q at p-value <0.05
13	Timidi and Ine-Tonbarapa (2023)	Examined the relationship between human assets accounting and financial performance in Nigeria	Ex-post facto research design, descriptive statistics and lease square panel data regression.	The results showed that staff compensation cost, recruitment and hiring costs exert a significant positive relationship with ROA while firm size as a control variable has a significant relationship between human asset accounting and ROA
14	Nwachukwu and Worlu (2023)	The connection between sales force compensation and sales performance in Nigeria	Cross-sectional survey research design, census sampling technique and Spearman rank correlation coefficient	The result showed that salary strongly promotes productivity and profitability of bakery firms.
15	Mohammed, *et al.* (2022)	Examined the impact of human capital investment on firm's value of listed agribusiness firms in Nigeria	Ex-post facto research design, descriptive statistics, correlation matrix and panel multiple regressions	The results showed that staff salaries and wages costs exert a negative and significant effect on firm value while director's remuneration exerts a negative and no significant effect on firm value

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
16	Ogundajo, *et al.* (2022)	The impact of HRA disclosure on firm value in Nigeria.	Ex-post facto research design, unit root, cointegration test, descriptive statistics, correlation analysis and panel regression	The empirical evidence showed that employee training and development disclosure exhibit a significant negative impact on firm value at 1% level of significance while employee information disclosure exhibit a significant positive impact on firm value at 1% level of significance
17	Israel, *et al.* (2022)	The influence of human resource expenditure on financial performance in Nigeria	Secondary data and multivariate econometric regression	The results revealed that staff salaries, wages and allowances exert a positive and significant influence on financial performance measured by ROE
18	Agubata, *et al.* (2022)	The impact of employee benefits on organisational growth in Nigeria	Secondary data, descriptive statistics, Pearson correlation and panel regression	The fixed effect regression results showed that medical allowance, employee benefits, gratuity and pension exhibit a significant positive impact on organisational growth
19	Orwa, *et al.* (2022)	The relationship between personnel costs and financial performance in Nigeria	Secondary data and Generalized Least Square regression technique	The empirical findings revealed indicated that personnel costs exert a positive and significant relationship with financial performance. This indicates the personnel costs promote the performance of the firm

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
20	Anidebe, *et al.* (2021)	The effect of research and development expenditures on firm value in Nigeria	Ex-post facto research design, secondary data and multiple regressions technique	The results showed that research and development expenditures had no significant effect on firm value.
21	Ndum and Oranefo (2021)	The effect of human resource cost on financial performance in Nigeria	Secondary data and OLS regression method	The result showed that staff cost exhibits a significant positive effect on PATM while no significant positive effect on ROA
22	Noorazem, *et al.* (2021)	The relationship between reward system and employee performance in Malaysia	Survey research design, correlations analysis and regression analysis	The findings revealed that medical benefits, salary, bonuses, appreciation exerts a significant positive relationship with employees' performance
23	Onyekwelu and Ironkwe (2021)	The influence of HRA on corporate financial performance in Nigeria	Ex-post facto research design and the least square regression analysis	The findings revealed that disclosure of human resource HRA and training costs experience a significant positive influence on financial performance measured by ROA and ROE
24	Ozioma and Udeh (2021)	The effect of HRA on firm value in Nigeria	Ex-post facto research design, purposive sampling technique and linear structural relations	The findings revealed that staff training and development cost and staff number exert no significant positive effect on firm value. This indicates that HRA has does not influence firm value.

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
25	Udeh (2021)	The impact of HRA on firm value in Nigeria	Ex-post facto research design and multiple regressions	The result showed that health and safety, staff training and development cost and staff number exert no significant impact on firm value measured by earning per shares.
26	Adewumi, *et al.* (2021)	The effect of human resource disclosures on shareholder value in Nigeria	Longitudinal and correlational methods, quantile regression, descriptive statistics, and correlation	The findings revealed that the human resources disclosure has a significant influence on shareholder value with ordinary, above-average or even below-average company value at 5% level of significance.
27	Nangih, *et al.* (2020)	Examined the relationship between staff costs and profitability in Nigeria	Secondary data, judgmental sampling technique, descriptive, correlation and regression technique	The empirical findings revealed that staff salaries and training costs exert a positive and significant relationship with profit margin and medical expenses exert a negative and significant relationship with profit margin.
28	Nwauzor and Longjohn (2020)	Effect of HRA and firm performance in Nigeria	Secondary data and OLS regression technique	The results revealed that compensation cost exerts a significant positive effect on firm performance at p-value < 0.05, and firm size exerts a moderating and non-significant effect on the relationship between HRA and firm performance

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
29	Bankole (2020)	The effect of human resource cost on financial performance in Nigeria	Secondary data and pooled ordinary least-square	The empirical results revealed that pension cost, director's emolument and gratuity cost strongly promote financial performance
30	Olajumoke (2020)	The effect of human resource cost on financial performance in Nigeria	Secondary data, pooled OLS, fixed effect model, and random effect model	The finding showed that pension cost, director's emolument and gratuity cost has a significant positive effect on ROA while salary and wages has no significant positive effect on ROA
31	Adetoun, *et al.* (2020)	The effect of HRA disclosures on financial performance in Nigeria	Secondary data and multiple regression analysis	The results of the investigation revealed that training & development cost and staff cost exert a significant positive effect on the financial performance
32	Liang, *et al.* (2020)	The influence of administrative expenses on firm value in China	Secondary data and OLS regression technique	The regression results showed that administrative expenses exert a significant and positive influence on operating profit. This implies that employee training expenses, employee education expenses, technology development expenses strongly contribute to firm value

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
33	Onyekwelu, *et al.* (2019)	Investigated the relationship between HRA and firm performance in Nigeria	Primary and secondary data and principle component analysis	The empirical results showed that HRA variable of health and safety cost has a significant positive relationship with firm performance
34	Erdogan and Adilya (2019)	The effect of R&D expenditures on financial performance in Turkey	Secondary data and panel data estimation method	The empirical evidence depicts the presence of non-linear relationship between R&D expenditures and financial performance.
35	Manukaji, *et al.* (2019	Assess the effect of human-resources development on performance	Secondary data, descriptive-statistics, correlation test and ordinary least-square estimation technique	The training and development cost and employee remuneration exhibit a significant effect on performance, and size of employees exhibit no significant effect on performance
36	Sapra and Jain (2019)	The influence of HRA on firm's value in India	Secondary data and multiple regression model	The results showed that staff welfare and training expenses and PAT per 1000 employee exert a significant positive influence on market capitalization and total assets while staff compensation exerts no significant influence on market capitalization, and significant negative influence on TA

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
37	Tafamel and Akrawah (2018)	Examined whether employee training and development have an effect of firm profitability in Nigeria	Ex-post facto research design and OLS regression	The results showed that employee training and development had a robust effect of firm profitability at 5% level of significance
38	Oko (2018)	To investigate the effect of HRA on firm profitability in Nigeria	Secondary data and paired t-test statistical tool	The result showed that staff retirement benefits and staff salary exerts a positive and significant effect on firm profitability
39	Inua and Oziegbe (2018)	Assess the effect of HRA on financial performance in Nigeria	Secondary data, ex-post-facto research design and regression analysis	The regression results showed that staff cost, staff strength and firm size exhibit a significant effect on financial performance while director remuneration exhibit non-significant effect on financial performance
40	Okezie, *et al.* (2017)	The effect of indirect costs on firm performance in Nigeria	Secondary data, descriptive statistics and multiple regressions	The empirical evidence revealed that power and electricity and rent charges exert a significant positive effect on ROA while employees' salaries exert an non-significant negative effect on ROA.
41	Omodero and Ihendinihu (2017)	Relationship between HRA and financial performance in Nigeria	Secondary data and multiple regression analysis	The empirical evidence revealed that personnel benefit cost exhibit a significant positive effect on the PAT, and significant negative effect on net asset

SN	Author(s)	Topic/Objective(s)	Methodology/Data	Major Finding(s)
42	Asaju and Yarie (2017)	The influence of extrinsic rewards on intrinsic motivation and performance in Nigeria	Primary data, descriptive statistics and least square regression technique	The regression results show that salaries had a significant influence on employee performance
43	Nagaraju and Pooja (2017)	The impact of salary on employee performance in Pakistan	Primary data, descriptive statistics and least square regression technique	The results showed that salary has positive impact on employee performance
44	Afaq, *et al.* (2016)	The impact of training and development of employees on employee performance in Pakistan	Survey research design and OLS regression technique	The result showed that training and development has a significant impact on employee productivity
45	Nnorom, *et al.* (2016)	Effect of compensation administration on employee in Nigeria productivity	Primary data, descriptive statistics and least square regression technique	The result showed that compensation exerts a significant positive effect on employee productivity

Source: Researcher's Compilation (2025).

2.7 Summary and Gap(s) Identification

The study examined the relationship between Human Resource Accounting (HRA) and firm value in Nigeria. A review of forty-five (45) empirical studies highlights several gaps in the existing literature. Many prior studies relied on limited or narrow analytical approaches and short-term data, which restrict the ability to capture evolving organizational practices and post-2015 regulatory changes (Uagbale-Ekatah et al., 2025; Omolaye, 2025; Adegbayibi et al., 2024).

While most studies focused on the effect of HRA on financial performance or profitability, only a few explicitly examined its relationship with firm value (Mohammed et al., 2022; Ozioma & Udeh, 2021; Udeh, 2021). Moreover, these studies often overlooked critical dimensions of HRA, such as pension and gratuity, sundry personnel expenses, and health and safety costs, and relied on narrow proxies for firm value, primarily Tobin's Q, which may not capture the full impact of human capital investments.

Existing research has concentrated on sectors such as banking, general manufacturing, agribusiness, oil and gas, and service-oriented industries. Very few studies have explored consumer goods and industrial goods firms, despite their strategic importance to Nigeria's economic growth. This study addresses this gap by focusing specifically on these under-explored sectors. Several prior studies used limited conceptual frameworks to explain the relationship between HRA and firm value, often failing to integrate broader strategic and accounting perspectives that recognize employees as critical assets contributing to long-term organizational value.

Previous studies were constrained by short or outdated time frames, limiting their ability to reflect contemporary economic realities, regulatory reforms, and organizational practices. By adopting a ten-year period (2015–2024), this study captures more recent trends and provides more robust and relevant insights into the evolving role of HRA in enhancing firm value in Nigeria.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the methodological framework used in the study. It describes the procedures for collecting, processing, and analyzing data, as well as the estimation techniques applied. The chapter covers the research design, population and sample, sampling technique, data sources, methods of data collection and analysis, model specification, and measurement of variables.

3.2 Research Design

The study adopted an ex-post facto research design, which was deemed appropriate for the collection and analysis of secondary data. This design enabled the researcher to investigate changes over time and to establish the correct sequence of events within the study period (2015–2024). The choice of this design provided unique advantages, particularly in examining historical data and identifying patterns and relationships that could not be manipulated or controlled by the researcher.

3.3 Population of the Study

The population for this study comprises firms listed under the Consumer Goods and Industrial Goods sectors of the Nigerian Exchange Group (NGX). Specifically, the population includes twenty-one (21) consumer goods firms and fourteen (14) industrial goods firms, resulting in a total of thirty-five (35) firms. To be eligible for inclusion, firms must have published consistent and complete financial statements for ten (10) consecutive years covering the period 2015–2024. The selection of these two sectors is informed by their prominence within the Nigerian

manufacturing industry, as both represent the dominant sub-sectors of the manufacturing sector on the NGX.

3.4 Sample Size and Sampling Technique

The sample size for this study was determined based on the consistency of delivering audited annual reports and accounts during the period under review. Given that the population of this study is known and finite, and could easily be estimated. The sample population comprised of twenty-one (21) quoted consumer good firms and fourteen (14) quoted industrial goods companies making it a total population of thirty-five (35) firms. The Taro Yamane technique was adopted in sample size determination. The computation was based on the formula below.

The computation was based on the formula below.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample Size

N = Population

e = Margin of Error (5%)

Where:

$$n = \frac{35}{1 + 35\ (0.05)^2}$$

$$n = \frac{35}{1 + 35\ (0.0025)}$$

$$= 32.14$$

From the computation, a sample size of 32 companies was initially adopted. However, for the purpose of the study and data availability, the sample size was reduced to 24 companies. This sample was selected from various sub-sectors (Consumer Goods and Industrial Goods) in the domiciled sector of the study. The judgmental sampling technique was used, while filtering was

also employed to get the companies that satisfy the requirements for the sample size. The distribution of the selected companies is as follows:

Industrial Goods – 8 companies

Consumer Goods – 16 companies

This sampling approach ensured that firms with relevant, complete, and consistent financial and operational data were prioritized. The list of the 24 companies of the sample is presented in Appendix II.

3.5 Data Sources

The nature of this study necessitates the use of secondary data. All data were sourced from the annual reports of the selected quoted consumer goods and industrial goods companies on the Nigerian Exchange Group for the period of 2015 to 2024.

3.6 Data Collection Method

The data were collected by extracting them from the audited annual reports of the selected quoted consumer goods and industrial goods companies in Nigeria.

3.7 Method of Data Analysis

The study adopts the panel regression technique as the primary econometric method to examine the relationship between human resource accounting (HRA) and firm value. To provide a clear understanding of the data, descriptive statistics and correlation analysis were conducted, highlighting the characteristics and interrelationships of the variables. All analyses were performed using EViews 9.0 software, ensuring robust computation and accurate estimation of the model parameters.

3.7.1 Descriptive Statistics

The descriptive statistics shows the description of the mean, standard deviation and normality test of the variables of interest. The descriptive statistics is an analysis tool used to help describe and summarise a variable's data in an empirical research study (Starbuck, 2023). It also allows the researcher to interpret the data at hand.

3.7.2 Correlation Analysis

The Pearson correlation analysis was used to measure the degree of correlation relationship between the dependent variables and independent variables. However, the correlation coefficient of research variable ranges from −1 to 1, and implies that .−1 indicates a perfectly negative association, 1 indicates a perfectly positive association, and 0 indicates the absence of an association. The positive coefficient values indicate that as one variable increases (decreases), the other variable tends to increase (decrease), and it assumes a direct relationship. The negative coefficient values indicate that as one variable increases while the other variable tends to decrease, and this connotes inverse relationship.

3.7.3 Panel Regressions Technique

A panel regression model is one that seeks to explain change or variation in the value of one variable called the dependent variable on the basis of changes in other variables known as the independent or explanatory variables using pooled data. The model assumes that the dependent variable is a linear function of the independent variables with consideration to the heterogeneity in the pooled companies. This means that pooled regression model assumes that there is no difference in the pooled companies while panel regression model assumes cross sectional heterogeneity (Cross section fixed effect) and period heterogeneity (fixed effect). The Hausman

test was employed to choose the between fixed effect model and random effect model. This indicates that when the Hausman test result is statistically non-significant at p-value > 0.05 significance level, random effect model is preferable otherwise fixed effect model is preferable.

3.7.4 Post Diagnostic Test

The following post diagnostic tests were carried to enhance the validity and robustness of the regression results.

Multicollinearity Test: The Variance Inflation Factor (VIF) is used to detect the presence of multicollinearity among the explanatory variables. VIF values exceeding 10 suggest problematic multicollinearity, which may necessitate remedial measures is variable exclusion.

Heteroscedasticity Test: The Breusch-Pagan/Cook-Weisberg test is employed to test for heteroscedasticity. Where heteroscedasticity is present, the RLS technique compensates by applying heteroscedasticity-consistent standard errors, ensuring unbiased inference.

Normality Test: The Jarque-Bera (JB) test is conducted to evaluate whether the residuals follow a normal distribution, thereby validating the assumptions underlying large-sample inference and hypothesis testing. When probability of Jarque-Bera (JB) test is > 0.05 which implies that the data are normally distributed otherwise it is not normally distributed.

Model Specification Test: The Ramsey Regression Equation Specification Error Test (RESET) is implemented to detect potential functional form misspecification or omitted variable bias. A significant result indicates that additional explanatory variables or transformation of existing variables may be necessary.

3.8 Model Specification

The study adopted a panel regressions model to explain change or variation in the value of the dependent variable (firm value) on the basis of changes in the independent or explanatory variables. However, the study adapted the model of Adegbayibi, *et al.*, (2024) which was presented in equation (3.1) below:

$ROA_{it} = \beta_0 + \beta_1 CC_{it} + \beta_2 ETC_{it} + \beta_3 RB_{it} + \varepsilon_{it}$…..... (3.1)

Where;

ROA = Return on Asset

HRC= Human Resource Cost

CC= Compensation Costs

ETC= Employees Training Costs

RB= Retirement Benefit

ε_{it}-= Error term

The regression model of Adegbayibi, *et al.*, (2024) was modified by introducing variable of sundry personnel expenses and health safety cost which was re-specified in equation 3.2 below in functional form:

FMV = f (STC, TRDC, PGR, SPE, HSC, FZE, FA,FL)…… (3.2)

$FMV_{it} = \beta_0 \quad \beta_1 STC_{it} + \beta_2 TRDC_{it} + \beta_3 PGR_{it} + \beta_4 SPE_{it} + \beta_5 HSC_{it} + \beta_6 FZE_{it} + \beta_6 FA_{it} + \beta_7 FL_{it} + \varepsilon_{it}$…….(3.3)

Where;

FMV = Firm Value

STC = Staff Cost

TRDC = Training and Development Cost

PGR = Pension and Gratuity

SPE = Sundry Personnel Expenses

HSC = Health Safety Cost

FZE = Firm Size

FA = Firm Age

FL = Firm leverage

β_0 = Constant

e_t = Error term

$\beta_1 - \beta_5$ = Explained coefficients of the independent variables

Apriori sign = $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7 > 0$

3.9 Measurement of Variables

The measurement of the dependent and independent variables were presented in Table 3.1 below

Table 3.1: Measurement of Variables

SN	Variables	Definition	Measurement	Sources	Apriori sign
1	FMV	Firm value (dependent variable)	Tobin Q was measured by the market value of assets divided by the book value of assets, where the market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity.	Bangara, *et al.* (2024); Oyedokun, *et al.* (2020); Hieu, *et al.* (2022)	
2	STC	Staff cost (Independent variable)	It was measured by the ratio of staff cost to total revenue	Atseye, *et al.* (2020)	+
3	TRDC	Training and development cost (Independent variable)	It was measured by a dummy variable: "1" for amount of money spent on training and development reported in the audited annual financial statement OTHERWISE "0".	Odewusi *et al.* (2025), Tafamel, & Akrawah (2018); Adegbayibi, *et al.*, (2024)	+

SN	Variables	Definition	Measurement	Sources	Apriori sign
4	PGR	Pension and gratuity (Independent variable)	It was measured by cost incurred on pension and gratuity reported in the audited annual financial statement for the periods scaled by total revenue.	Nwauzor & Lonhjohn (2020)	+
5	SPE	Sundry personnel expenses (Independent variable)	It was measured by cost incurred on personnel expenses scaled by total revenue	Orwa, *et al.* (2022)	+
6	HSC	Health and safety cost (Independent variable)	It was measured by a dummy variable: "1" for expenditure on health and safety cost reported in the audited annual financial statement for the periods OTHERWISE "0".	Agubata, *et al.* (2022); Noorazem, *et al.* (2021)	+
7	FZE	Firm size (Control variable)	It was measured by logarithms of total assets	Mansour, *et al.* (2023)	+
8	FA	Firm age (Control variable)	Firm age is measured by the number of years it was incorporated or listed.	Umar & Sylvanus (2015)	+
9	FL	Firm leverage (Control variable)	It was measured by the ratio of total debts to total assets	Baffa, *et al.*, 2023).	

Source: Researcher's Compilation (2025)

Decision Rule

The hypotheses of the study were tested at 5% (0.05) of significance. Using prob-values and t-statistics accept the null hypothesis when the $p > 0.05$ and reject the null hypothesis when $p < 0.05$.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter provided the presentation of data, analysis and interpretation of results obtained from the study. The statistical technique of descriptive statistics, correlation analysis, and panel regression analysis was used in this study.

4.2 Data Presentation

The raw data collected from listed consumer goods and industrial goods companies in the Nigerian Exchange Group (NGX) for the periods of 2015 to 2024 was presented in Appendix 2.

4.2.1 Descriptive Analysis

The descriptive statistics showed the description of the mean, standard deviation and normality test. Below was the descriptive statistics of the variables for the period of 2015 to 2024.

Table 4.1: Descriptive Statistics

	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
Mean	1.97	0.09	0.44	0.008	0.14	0.46	7.69	35.62	56.66
Median	1.25	0.07	0.00	0.004	0.08	0.00	7.80	40.00	56.18
Maximum	18.13	1.003	1.00	0.25	1.09	1.00	9.80	60.00	129.74
Minimum	0.19	0.002	0.00	0.00	0.004	0.00	5.62	6.00	4.10
Std. Dev.	2.18	0.09	0.49	0.02	0.20	0.49	0.92	12.96	22.05
Skewness	3.66	7.38	0.21	10.98	3.06	0.13	-0.14	-0.78	0.15
Kurtosis	20.52	70.52	1.04	147.48	12.06	1.01	2.12	2.62	3.38
Jarque-Bera	3608.53	47776.00	40.02	213581.7	1197.62	40.003	8.51	25.84	2.44
Probability	0.00	0.00	0.00	0.0000	0.00	0.00	0.01	0.00	0.29
Sum	473.32	21.711	107.00	1.919100	35.94	112.00	1847.96	8550.00	13598.48
Sum Sq. Dev.	1144.04	2.16	59.29	0.0796	9.92	59.73	204.38	40186.25	116258.60
Observations	240	240	240	240	240	240	240	240	240

Source: EViews 9.0 Output (2025)

The result Table 4.1 showed that firm value (FMV) has mean value of 1.97; the median value is 1.25 while the maximum and minimum values were 18.13 and 0.19 and standard deviation value of 2.18 which indicates that there is high level of firm value. It is observed that staff cost (STC) has a mean value of 0.09; the median value of 0.07 while the maximum and minimum values were 1.003 and 0.002 and standard deviation value of 0.09. Furthermore, training and development cost (TRDC) has a mean value of 0.44; the median value of 0.00 while the maximum and minimum values were 1.00 and 0.00 and standard deviation value of 0.49. Pension and gratuity (PGR) has a mean value of 0.008; the median value of 0.004 while the maximum and minimum values were 0.25 and 0.00 and standard deviation value of 0.02. In the case of sundry personnel expenses (SPE), the variable has a mean value of 0.14; the median value of 0.08 while the maximum and minimum values were 1.09 and 0.004 and standard deviation value of 0.20. Health and safety cost (HSC) has a mean value of 0.46; the median value of 0.00 while the maximum and minimum values were 1.00 and 0.00 and standard deviation value of 0.49.

In the case of the control variables, firm size (FZE) has a mean value of 7.69; the median value of 7.80 while the maximum and minimum values were 9.80 and 5.62 and standard deviation value of 0.92, firm age (FA) has a mean value of 35.62; the median value of 40.00 while the maximum and minimum values were 60.00 and 6.00 and standard deviation value of 12.96 and firm leverage has a mean value of 56.66; the median value of 56.18 while the maximum and minimum values were 129.74 and 4.10 and standard deviation value of 22.05.

Looking at the skewness of the data, FMV, STC, TRDC, PGR, SPE, HSC and FL were skewed to the right while FZE and FA were skewed to the left. The Kurtosis values depict that the leptokurtic and platykurtic nature of the data. FMV, STC, PGR, SPE and FL behaviour of the data were leptokurtic because it exceeded the threshold of 3 while TRDC, HSC, FZE and FA

behaviour of the data were platykurtic because it did not exceeded the threshold of 3. Finally, based on the probability of the Jarque Bera statistics, all the variables were not normally distributed with a probability value < 0.05 with 240 statistical observations except firm leverage which was normally distributed..

4.2.2 Correlation Analysis

The correlation analysis is used to measure the degree of correlation relationship between the dependent variable and independent variables. The correlation result is presented in Table 4.2 below.

Table 4.2: Correlation Analysis

	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
FMV	1.0000								
STC	-0.0931	1.0000							
TRDC	0.0812	0.0021	1.0000						
PGR	-0.0580	0.0401	-0.0668	1.0000					
SPE	0.0587	0.0102	0.0040	0.1310	1.0000				
HSC	0.0857	-0.1658	0.2195	-0.1225	0.1256	1.0000			
FZE	0.1984	-0.0713	0.1551	-0.1491	-0.4047	-0.0431	1.0000		
FA	0.0365	0.0187	0.0616	0.1677	-0.0851	-0.1613	-0.0472	1.0000	
FL	0.1201	-0.1193	-0.0089	0.1334	0.0466	0.1633	0.0428	0.2018	1.0000

Source: EViews 9.0 Output (2025)

Table 4.2 above revealed that staff cost (STC) had a negative coefficient value of -0.0931. This therefore implies that staff cost was negative and weakly associated with firm value (FMV). Training and development cost (TRDC) had a positive coefficient value of 0.0812. This therefore means that training and development cost was positive and weakly associated with firm value (FMV). The result also revealed that pension and gratuity (PGR) had a negative coefficient value of -0.0580. This therefore means that pension and gratuity was negative and weakly associated with firm value (FMV). Sundry personnel expenses (SPE) had a positive coefficient value of 0.0587. This indicates that sundry personnel expenses were positive and

weakly associated with firm value (FMV). In the case of health and safety cost (HSC), the variable had a positive coefficient value of 0.0857. This indicates that health and safety cost was positive and weakly associated with firm value (FMV).

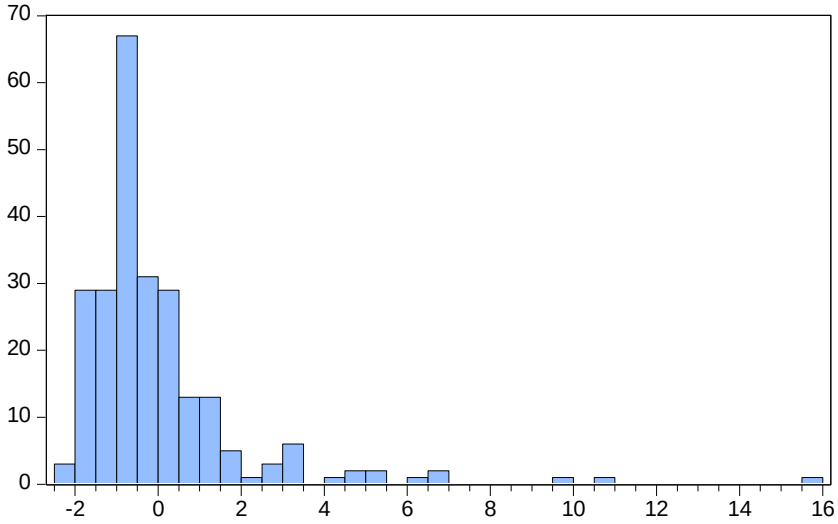
The control variables, firm size (FZE) had a positive coefficient value of 0.1984. This implies that firm size was positive and moderately associated with firm value (FMV) while firm age (FA) had a positive coefficient value of 0.0365. This indicates that firm age was positive and weakly associated with firm value (FMV) and firm leverage (FL) had a positive coefficient value of 0.1201. This indicates that firm leverage was positive and moderately associated with firm value (FMV). Based on the correlation coefficients, all our independent variables were not having any strong correlation with each other since none has correlation coefficient above 0.80. This implies that there was unlikely possibility of multicollinearity among the independent variables.

4.3 Diagnostic Test

4.3.1: Histogram Normality Test

The histogram normality test result showed that the Jarque Bera statistics p-value is < 0.05 which implies all the variables were not normally distributed. The normality graph is presented in Figure 4.1 below.

Figure 4.1: Histogram Normality Test



Series: Standardized Residuals	
Sample 2015 2024	
Observations 240	
Mean	1.04e-15
Median	-0.577670
Maximum	15.97776
Minimum	-2.198170
Std. Dev.	2.091581
Skewness	3.625862
Kurtosis	21.87054
Jarque-Bera	4086.848
Probability	0.000000

4.3.2: Variance Inflation Factor

The Variance Inflation Factor (VIF) was conducted to check its possibility or not. The study result was presented in the Table 4.3 below.

Table 4.3: Variance Inflation Factors (VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	2.136924	113.3092	NA
STC	2.183633	1.994296	1.046688
TRDC	0.084865	2.006203	1.111771
PGR	62.28759	1.307145	1.095966
SPE	0.570494	1.929150	1.250488
HSC	0.091180	2.256224	1.203319
FZE	0.028371	90.47109	1.281133
FA	0.000129	9.812039	1.143654
FL	4.42E-05	8.654286	1.134628

Source: EViews 9.0 Output (2025)

From the table 4.3 above, it is shown that the mean centered VIF is 1.15. It is however, the rule of VIF to place a benchmark mean of 10 for acceptance level. Hence it is assumed that any result that produces mean VIF above 10 has a case of high correlation of the independent

variables. Since our result is 1.13, which is far lesser than acceptable level of 10, we conclude that there was no absence of multicollinearity in our data.

4.3.3 Heteroskedasticity Test:

The variance of error term is expected to be constant for each observation or a range of observations which is known as homoscedasticity. Whenever there occurs a change on the variance, it tends to reduce the precision of the estimation in ordinary least square (OLS) linear regression. Hence the study used the Breusch-Pagan-Godfrey test for the heteroscedasticity of the residuals as presented in the Table 4.4 below.

Table 4.4: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.519229	Prob. F(8,231)	0.8415
Obs*R-squared	4.239440	Prob. Chi-Square(8)	0.8349
Scaled explained SS	40.98393	Prob. Chi-Square(8)	0.0000

Source: EViews 9.0 Output (2025)

Heteroscedasticity test has a decision rule that there is no heteroscedasticity if the probability of F-statistics value is greater than the critical value at 5% level. The Table 4.4 above indicates that probability value of 0.8415 is greater than the critical value of 0.05. Therefore, we conclude that there is no heteroscedasticity, which means there is a constant variance.

4.3.4 Regression Equation Specification Error Test (RESET)

This test is based on checking whether non-linear combinations of the fitted values actually helped in explaining the response variable. The understanding behind this test is that non-linear combinations of explanatory variables have any power whatsoever in explaining the response variable, the model is miss-specified in the sense that the data generating process might be better approximated by a polynomials or another non-linear functional form. The study

employed Ramsey RESET test to check for the presence of non-linear independent variable combinations as presented in the Table 4.5 below.

Table 4.5: Ramsey RESET test

	Value	df	Probability
t-statistic	3.000650	230	0.0030
F-statistic	9.003901	(1, 230)	0.0030
Likelihood ratio	9.216136	1	0.0024

Source: EViews 9.0 Output (2025)

Table 4.5 above is the result of the test for miss-specification or omitted variables done with the help of Ramsey RESET Test. Probability value of the t-statistic (0.0030) < 0.05 which implies that there is a miss-specification and presence of non-linear independent variable combinations.

4.3.4 Hausman Test

The Hausman test was used to verify which of the panel models (fixed effect and random effect model) that best explained the relationship between human resource accounting and firm value in Nigeria. The result was presented in Table 4.6 below:

Table 4.6: Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.330900	8	0.9692

Source: EViews 9.0 Output (2025)

The probability value of 0.9692 which was non-significant at p-value > 0.05 level of significance showed that random effect panel regression result was preferable.

4.4 Panel Least Square Results

To examine the relationship between the dependent variable and independent variables, the study made use of panel data regression analysis to test our formulated hypotheses. The panel regression result was presented in Table 4.7 below.

Table 4.7: Panel Regression Result

Variable	Fixed Effect Model	Random Effect Model	Apriori Sign
C	-95.0740 (-2.6502) {0.0087}	-3.6674 (-2.4242) {0.0161}	
STC	-1.0716 (-0.6791) {0.4979}	-1.1790 (-0.7866) {0.4323}	+
TRDC	-0.1229 (-0.1084) {0.9138}	0.0897 (0.3084) {0.7580}	+
PGR	-0.0967 (-0.0117) {0.9907}	-0.6156 (-0.7538) {0.4517}	+
SPE	2.0905 (2.1727) {0.0310}**	1.8579 (2.4461) {0.0152}**	+
HSC	-0.3231 (-0.5390) {0.5905}	0.2685 (0.8831) {0.3781}	+
FZE	-0.2404 (-0.3352) {0.7378}	0.5991 (3.5006) {0.0006}*	+
FA	2.7745 (2.7921) {0.0057}*	0.0109 (0.9467) {0.3448}	+
FL	0.0008 (0.0998) {0.9205}	0.0061 (0.9066) {0.3655}	
R squared	0.414396	0.081030	
Adjusted R^2	0.296687	0.049204	
F-statistic	3.520503	2.546041	
Prob(F-statistic)	0.000000	0.011239	
Hausman test	2.330900 (0.9692)		

Note: (1) bracket () are t-Statistics, (2) bracket { } are probability-values (3) * & **, implies statistical significance at %1 and 5% levels respectively.
Source: EViews 9.0 Output (2025)

The result of the Hausman statistics as presented in Table 4.7 under the panel regression technique with probability value of 0.9692 and a Chi. Sq. value of 2.33. Judging from the probability value of the Hausman test which is > 0.05 and based on the decision rule we

therefore accept the null hypothesis that states that the random effect model is more appropriate and adequate for this study.

Therefore, random effect model present the following results that R^2 value of 0.081030 implies that about 8% of the proportion of variations in firm value was explained by human resource accounting variables (staff cost, training and development cost, pension and gratuity, sundry personnel expenses and health and safety cost). This was supported by an adjusted R-squared value of 5%. The F-statistic value of 2.54 with probability value (0.01) < 0.05 showed that the random panel regression fitted is valid, reliable, appropriate and acceptable for examining the relationship between the variables.

Based on the regression result, staff cost (STC) exerts a negative (-1.1790) and non-significant (0.4323) relationship with firm value (FMV) at p-value > 0.05 level of significance. The negative relationship means that increase in staff cost would lead to a decrease in firm value but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance.

Training and development cost (TRDC) exerts a positive (0.0897) and non-significant (0.7580) relationship with firm value (FMV) at p-value > 0.05 level of significance. The positive relationship means that increase in training and development cost would lead to an increase in firm value but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance.

Also, pension and gratuity (PGR) exerts a negative (-0.6156) and non-significant (0.4517) relationship with firm value (FMV) at p-value > 0.05 level of significance. The negative relationship implies that change in pension and gratuity would adversely influence firm value

but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance.

Sundry personnel expenses (SPE) exerts a positive (1.8579) and significant (0.0152) relationship with firm value (FMV) at p-value < 0.05 level of significance. The positive relationship indicates that increase in sundry personnel expenses would lead to an increase in firm value but it was statistically significant. The significant relationship was because the variable passed t-test at p-value < 0.05 level of significance.

Health and safety cost (HSC) exerts a positive (0.2685) and non-significant (0.3781) relationship with firm value (FMV) at p-value > 0.05 level of significance. The positive relationship implies that change in health and safety cost would contribute positively to firm value but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance.

The control variables, firm size (FZE) exerts a positive (0.5991) and significant (0.0006) relationship with firm value (FMV) at p-value < 0.05 level of significance. The positive relationship implies that expansion of the firm would lead to increase in firm value but it was statistically significant. The significant relationship was because the variable passed the t-test at p-value < 0.05 level of significance. Firm age (FA) exerts a positive (0.0109) and non-significant (0.3448) relationship with firm value (FMV) at p-value > 0.05 level of significance. The positive relationship implies that older firm would result to high level of firm value but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance. Firm leverage (FL) exerts a positive (0.0061) and non-significant (0.3655) relationship with firm value (FMV) at p-value > 0.05 level of significance. The positive relationship indicates that highly firm would result to high level of

firm value but it was statistically non-significant. The non-significant relationship was because the variable failed t-test at p-value > 0.05 level of significance.

4.5 Test of Hypotheses

The random panel effect regression result was used to test the formulated hypotheses.

Hypothesis 1: There is no significant relationship between staff cost and firm value in Nigeria.

The result showed that staff cost exerts a negative and non-significant relationship with firm value at p-value > 0.05 level of significance. This means that increase in staff cost would lead to a decrease in firm value but it was statistically non-significant. We therefore accept the null hypothesis which states that there is no significant relationship between staff cost and firm value in Nigeria.

Hypothesis 2: There is no significant relationship between training and development cost and firm value in Nigeria.

The result showed that training and development cost exerts a positive and non-significant relationship with firm value at p-value > 0.05 level of significance. This therefore means that increase in training and development cost would lead to an increase in firm value but it was statistically non-significant. We therefore accept the null hypothesis which states that there is no significant relationship between training and development cost and firm value in Nigeria.

Hypothesis 3: There is no significant relationship between pension and gratuity and firm value in Nigeria.

The result showed that pension and gratuity exerts a negative and non-significant relationship with firm value at p-value > 0.05 level of significance. This implies that change in pension and

gratuity would adversely influence firm value but it was statistically non-significant. We therefore accept the null hypothesis which states that there is no significant relationship between pension and gratuity and firm value in Nigeria.

Hypothesis 4: There is no significant relationship between sundry personnel expenses and firm value in Nigeria.

The result showed that sundry personnel expenses exerts a positive and significant relationship with firm value at p-value < 0.05 level of significance. This indicates that increase in sundry personnel expenses would lead to an increase in firm value but it was statistically significant.

We therefore reject the null hypothesis which states that there is a significant relationship between sundry personnel expenses and firm value in Nigeria.

Hypothesis 5: There is no significant relationship between health and safety cost and firm value in Nigeria.

The result showed that health and safety cost exerts a positive and non-significant relationship with firm value (FMV) at p-value > 0.05 level of significance. This implies that change in health and safety cost would contribute positively to firm value but it was statistically non-significant. We therefore accept the null hypothesis which states that there is no significant relationship between health and safety cost and firm value in Nigeria.

4.6 Discussion of Findings

Effect of Staff Cost on Firm Value

The random effect regression results show that staff cost exerts a negative and non-significant relationship with firm value at p-value > 0.05 level of significance. This means that increase in

staff cost would lead to a decrease in firm value but it was statistically non-significant. The result was in consonance with the findings of Chikaire-Ofoego and Egolum (2024), Sapra and Jain (2019) and Okezie, *et al.* (2017) that staff cost exerts an non-significant relationship with firm value. The result negates the findings of Kankpang, *et al.* (2024), Timidi and Ine-Tonbarapa (2023), Israel, *et al*. (2022), Mohammed, *et al.* (2022), Ndum and Oranefo (2021), Nwauzor and Longjohn (2020), and Inua and Oziegbe (2018) that staff cost exerts a significant relationship with firm value.

However, the non-significance observed in the current study may be attributed to the fact good wages and salaries were not given to staff. The good salaries offer to staff is a great motivational tool for efficient business operation, higher productivity and improved firm value.

Effect of Training and Development Cost on Firm Value

The result showed that training and development cost exerts a positive and non-significant relationship with firm value at p-value > 0.05 level of significance. This therefore means that increase in training and development cost would lead to an increase in firm value but it was statistically non-significant. The result was in consonance with the findings of Anidebe, *et al.* (2021) and Ozioma and Udeh (2021) that training and development cost exerts an non-significant relationship with firm value. The result negates the findings of Ozovehe (2024), Ogundajo, *et al.* (2022), Onyekwelu and Ironkwe (2021), Adetoun, *et al.* (2020), Manukaji, *et al.* (2019) and Tafamel and Akrawah (2018) that training and development cost exerts a significant relationship with firm value.

Consequently, the non-significance observed in the current study may be attributed to the fact the right training program was not offered to the staff. The right training program is aimed at skill acquisition, expansion of knowledge particularly the knowledge of the job one is employed

to do, the acquisition of the right attitude to work and adaptation to new work environment that would contribute immensely to the value of the firm.

Effect of Pension and Gratuity Cost on Firm Value

The result showed that pension and gratuity exerts a negative and non-significant relationship with firm value at p-value > 0.05 level of significance. This implies that change in pension and gratuity would adversely influence firm value but it was statistically non-significant. The result was in consonance with the findings of Adegbayibi, *et al.* (2024) that pension and gratuity exerts an non-significant relationship with firm value. The result negates the findings of Chikaire-Ofoego and Egolum (2024), Bankole (2020), Olajumoke (2020) and Oko (2018) that pension and gratuity exerts a significant relationship with firm value.

However, the implication of the non-significant of the variable is based on the delay in payment of pensions and gratuities has brought untold hardship and death to many retirees, thereby making retirement something that is dreaded by workers. This problem is further compounded by lack of planning and management of post-retirement epoch and conditions that would adversely influence the firm value.

Effect of Sundry Personnel Expenses on Firm Value

The result showed that sundry personnel expenses exerts a positive and significant relationship with firm value at p-value < 0.05 level of significance. This indicates that increase in sundry personnel expenses would lead to an increase in firm value but it was statistically significant. The result was in consonance with the findings of Orwa, *et al.* (2022), Adewumi, *et al.* (2021), Liang, *et al.* (2020) and Omodero and Ihendinihu (2017) that sundry personnel expenses exerts a positive and significant relationship with firm value.

However, the implication of the significant of the variable is based on the fact that indirect costs of the firms were appropriately accounted for and thereby contribute immensely to increase in firm value. This also implies operational managers did a very strategic and tactical planning of the firm.

Effect of Health and Safety Cost on Firm Value

The result showed that health and safety cost exerts a positive and non-significant relationship with firm value (FMV) at p-value > 0.05 level of significance. This implies that change in health and safety cost would contribute positively to firm value but it was statistically non-significant. The result was in consonance with the findings of Udeh (2021) that health and safety exert no significant impact on firm value. The result negates the findings of Bangara, *et al*. (2024), Muthoni, *et al.* (2024), Agubata, *et al.* (2022), Putra and Ratnadi (2021), Noorazem, *et al.* (2021) that health and safety cost has a significant relationship with firm value.

However, the implication of the non-significant of the variable is that management of consumer goods firms and industrial goods firms in Nigeria should consider health and safety of the employees as core values of the human resource accounting. This indicates staff well-being is the state of individuals' psychological, physical, social, economic and general health in relation to satisfaction at work and outside workplace that might positively contribute high firm value.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of findings, conclusion, recommendations, contribution to knowledge as well as the implications for further study with respect to human resource accounting and firm value in Nigeria.

5.1 Summary of Findings

The summary of findings that represented the interpretation of results was as follows:

(i) Staff cost exerts a negative and non-significant relationship with firm value in Nigeria.

(ii) Training and development cost exerts a positive and non-significant relationship with firm value in Nigeria.

(iii) The result showed that pension and gratuity exerts a negative and non-significant relationship with firm value in Nigeria.

(iv) Sundry personnel expenses exert a positive and significant relationship with firm value in Nigeria.

(v) Health and safety cost exerts a positive and non-significant relationship with firm value in Nigeria.

5.2 Conclusion

The study empirically examined the relationship between human resource accounting and firm value in Nigeria. The dependent variable of the study was firm value and independent variables were staff cost, training and development cost, pension and gratuity, sundry personnel expenses and health and safety cost while the data were analysed using descriptive statistics, correlation and panel regression techniques.

The result of the descriptive statistics indicated that all the variables were not normally distributed at p-value < 0.05 as applied by Jarque-Bera (JB) statistics result. This implies that the variables showed a sign of non-normality. The correlation analysis results revealed that the independent variables were weakly associated with firm value in Nigeria.

The analysis from the random effect panel regression revealed that staff cost exerts a negative and non-significant relationship with firm value in Nigeria; training and development cost exerts a positive and non-significant relationship with firm value in Nigeria; pension and gratuity exerts a negative and non-significant relationship with firm value in Nigeria; sundry personnel expenses exert a positive and significant relationship with firm value in Nigeria and health and safety cost exerts a positive and non-significant relationship with firm value in Nigeria. The control variables, firm size exerts a positive and significant relationship with firm value at p-value < 0.05 level of significance, firm age exerts a positive and non-significant relationship with firm value at p-value > 0.05 level of significance and firm leverage exerts a positive and non-significant relationship with firm value at p-value > 0.05 level of significance.

5.3 Recommendations

The following were the study recommendations:

(i) Stakeholders of listed consumer and industrial companies in Nigeria should ensure that staff costs are aligned with the value of services rendered over time. This implies that appropriate and well-managed investment in human capital is critical, as it directly contributes to enhancing the firm's overall value and performance.

(ii) Management should continue to maintain regular training program offered to staff for more innovation and knowledge driven in the long-run. However, the right training should be given to staff in order to equipped them with latest happening in the industries and how it would translate to high firm value.

(iii) Stakeholders of listed consumer and industrial companies in Nigeria should adopt a more flexible pension and gratuity scheme in the long-run. A flexible pension scheme commands staff recognition and also impact on the value of the firm.

(iv) Management should continue to budget more funds for sundry personnel expenses because it significantly enhance the value of the firm among listed consumer and industrial companies in Nigeria.

(v) Management should continue to ensure that there is safety and efficient healthcare system for staff because it would improve the value of the firm among listed consumer and industrial companies in Nigeria in the long-run.

5.4 Contribution to Knowledge

This study contributes to the body of knowledge by discovering that:

(i) Sundry personnel expenses seen as the main human resource accounting variable that significantly and strongly contribute to the value of the firm among listed consumer and industrial companies in Nigeria.

(ii) What adversely influence firm value in Nigerian listed consumer and industrial companies among the variables of human resource accounting considered in this study were training and development cost and health and safety cost. These new findings show that training and development cost and health and safety cost contribute positively to firm value in Nigeria in the long-run.

(iii) Staff cost and pension and gratuity were not feasible variables of human resource accounting that influence firm value among listed consumer and industrial companies in Nigeria. The new findings discovered that staff cost and pension and gratuity contribute negatively to firm value in Nigeria in the long-run.

5.5 Suggestions for Further Studies

The study suggested that further studies on the relationship between human resource accounting and firm value among listed consumer and industrial companies in Nigeria should sample the quoted non-financial companies in Nigeria Exchange Group (NGX). Therefore, further studies should employ other human resource accounting variables (Meal expenses, welfare cost, employee education expenses) as they might contribute to firm value.

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APPENDIX 1: RESULTS

Descriptive Statistics

	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
Mean	1.972171	0.090466	0.445833	0.007996	0.149783	0.466667	7.699842	35.62500	56.66033
Median	1.257600	0.074200	0.000000	0.004450	0.084450	0.000000	7.801200	40.00000	56.18000
Maximum	18.13620	1.002800	1.000000	0.257600	1.094100	1.000000	9.806400	60.00000	129.7400
Minimum	0.197300	0.001900	0.000000	0.000000	0.003900	0.000000	5.623400	6.000000	4.100000
Std. Dev.	2.187871	0.095277	0.498096	0.018254	0.203743	0.499930	0.924757	12.96701	22.05533
Skewness	3.663916	7.388177	0.217949	10.98714	3.065765	0.133631	-0.142847	-0.782098	0.152690
Kurtosis	20.52586	70.52229	1.047502	147.4829	12.06457	1.017857	2.122326	2.628324	3.388818
Jarque-Bera	3608.530	47776.00	40.02256	213581.7	1197.622	40.00319	8.519327	25.84853	2.444366
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.014127	0.000002	0.294586
Sum	473.3210	21.71190	107.0000	1.919100	35.94800	112.0000	1847.962	8550.000	13598.48
Sum Sq. Dev.	1144.040	2.169566	59.29583	0.079640	9.921198	59.73333	204.3869	40186.25	116258.6
Observations	240	240	240	240	240	240	240	240	240

Pearson Correlation Matrix

	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
FMV	1.000000	-0.093096	0.081223	-0.058020	0.058736	0.085767	0.198475	0.036567	0.120163
STC	-0.093096	1.000000	0.002188	0.040145	0.010290	-0.165796	-0.071314	0.018746	-0.119315
TRDC	0.081223	0.002188	1.000000	-0.066817	0.004085	0.219556	0.155118	0.061623	-0.008895
PGR	-0.058020	0.040145	-0.066817	1.000000	0.131096	-0.122498	-0.149194	0.167751	0.133430
SPE	0.058736	0.010290	0.004085	0.131096	1.000000	0.125603	-0.404729	-0.085114	0.046636
HSC	0.085767	-0.165796	0.219556	-0.122498	0.125603	1.000000	-0.043159	-0.161359	0.163356
FZE	0.198475	-0.071314	0.155118	-0.149194	-0.404729	-0.043159	1.000000	-0.047234	0.042853
FA	0.036567	0.018746	0.061623	0.167751	-0.085114	-0.161359	-0.047234	1.000000	0.201805
FL	0.120163	-0.119315	-0.008895	0.133430	0.046636	0.163356	0.042853	0.201805	1.000000

Panel Least Square Regression Results

Fixed Effect model

Dependent Variable: FMV
Method: Panel Least Squares
Date: 11/18/25 Time: 15:54
Sample: 2015 2024
Periods included: 10
Cross-sections included: 24
Total panel (balanced) observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-95.07400	35.87300	-2.650294	0.0087
STC	-1.071643	1.578017	-0.679107	0.4979
TRDC	-0.122960	1.134244	-0.108407	0.9138
PGR	-0.096762	8.256126	-0.011720	0.9907
SPE	2.090571	0.962191	2.172718	0.0310
HSC	-0.323123	0.599434	-0.539047	0.5905
FZE	-0.240418	0.717043	-0.335291	0.7378
FA	2.774500	0.993682	2.792140	0.0057
FL	0.000812	0.008126	0.099894	0.9205

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.414396	Mean dependent var	1.972171
Adjusted R-squared	0.296687	S.D. dependent var	2.187871
S.E. of regression	1.834831	Akaike info criterion	4.206115
Sum squared resid	669.9546	Schwarz criterion	4.800724
Log likelihood	-463.7338	Hannan-Quinn criter.	4.445699
F-statistic	3.520503	Durbin-Watson stat	1.521407
Prob(F-statistic)	0.000000		

Random Effect Model

Dependent Variable: FMV
Method: Panel EGLS (Period random effects)
Date: 11/18/25 Time: 15:55
Sample: 2015 2024
Periods included: 10
Cross-sections included: 24
Total panel (balanced) observations: 240
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.667485	1.512832	-2.424252	0.0161
STC	-1.179087	1.498846	-0.786663	0.4323
TRDC	0.089720	0.290878	0.308447	0.7580

PGR	-6.015616	7.979580	-0.753876	0.4517
SPE	1.857928	0.759521	2.446184	0.0152
HSC	0.268511	0.304026	0.883186	0.3781
FZE	0.599121	0.171143	3.500699	0.0006
FA	0.010975	0.011592	0.946747	0.3448
FL	0.006119	0.006749	0.906673	0.3655

Effects Specification

	S.D.	Rho
Period random	0.653255	0.0867
Idiosyncratic random	2.119569	0.9133

Weighted Statistics

R-squared	0.081030	Mean dependent var	1.088995
Adjusted R-squared	0.049204	S.D. dependent var	2.146882
S.E. of regression	2.093398	Sum squared resid	1012.315
F-statistic	2.546041	Durbin-Watson stat	1.030253
Prob(F-statistic)	0.011239		

Unweighted Statistics

R-squared	0.085568	Mean dependent var	1.972171
Sum squared resid	1046.147	Durbin-Watson stat	1.056268

Hausman Tests

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.330900	8	0.9692

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
STC	-1.104505	-1.179087	0.039636	0.7079
TRDC	0.082985	0.089720	0.000184	0.6196
PGR	-5.820638	-6.015616	0.875028	0.8349
SPE	1.909697	1.857928	0.005122	0.4695
HSC	0.287970	0.268511	0.000939	0.5254
FZE	0.602035	0.599121	0.000578	0.9036
FA	0.011119	0.010975	0.000003	0.9377
FL	0.005198	0.006119	0.000001	0.3083

Period random effects test equation:
Dependent Variable: FMV
Method: Panel Least Squares
Date: 11/18/25 Time: 15:56
Sample: 2015 2024
Periods included: 10
Cross-sections included: 24

Total panel (balanced) observations: 240

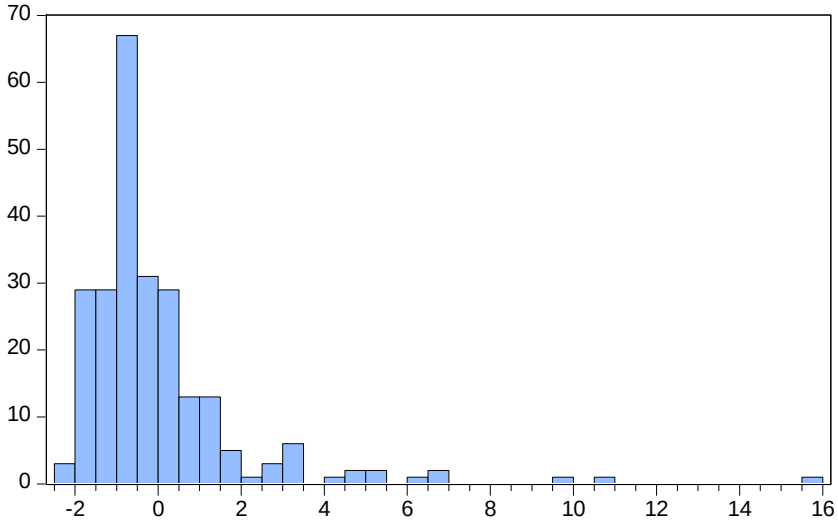
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.665018	1.520016	-2.411170	0.0167
STC	-1.104505	1.512010	-0.730488	0.4659
TRDC	0.082985	0.291194	0.284981	0.7759
PGR	-5.820638	8.034223	-0.724481	0.4695
SPE	1.909697	0.762885	2.503256	0.0130
HSC	0.287970	0.305566	0.942416	0.3470
FZE	0.602035	0.172825	3.483495	0.0006
FA	0.011119	0.011737	0.947309	0.3445
FL	0.005198	0.006809	0.763460	0.4460

Effects Specification

Period fixed (dummy variables)

R-squared	0.128221	Mean dependent var	1.972171
Adjusted R-squared	0.061463	S.D. dependent var	2.187871
S.E. of regression	2.119569	Akaike info criterion	4.412341
Sum squared resid	997.3509	Schwarz criterion	4.673389
Log likelihood	-511.4809	Hannan-Quinn criter.	4.517524
F-statistic	1.920682	Durbin-Watson stat	1.018452
Prob(F-statistic)	0.017483		

Diagnostic Tests



Series: Standardized Residuals
Sample 2015 2024
Observations 240

Mean	1.04e-15
Median	-0.577670
Maximum	15.97776
Minimum	-2.198170
Std. Dev.	2.091581
Skewness	3.625862
Kurtosis	21.87054
Jarque-Bera	4086.848
Probability	0.000000

Variance Inflation Factors
Date: 11/18/25 Time: 16:01
Sample: 1 240
Included observations: 240

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	2.136924	113.3092	NA
STC	2.183633	1.994296	1.046688
TRDC	0.084865	2.006203	1.111771
PGR	62.28759	1.307145	1.095966
SPE	0.570494	1.929150	1.250488
HSC	0.091180	2.256224	1.203319
FZE	0.028371	90.47109	1.281133
FA	0.000129	9.812039	1.143654
FL	4.42E-05	8.654286	1.134628

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.519229	Prob. F(8,231)	0.8415
Obs*R-squared	4.239440	Prob. Chi-Square(8)	0.8349
Scaled explained SS	40.98393	Prob. Chi-Square(8)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 11/18/25 Time: 16:01
Sample: 1 240
Included observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.66139	13.81527	-0.988862	0.3238
STC	-6.399611	13.96544	-0.458246	0.6472
TRDC	-0.649302	2.753138	-0.235841	0.8138
PGR	-36.74584	74.58742	-0.492655	0.6227
SPE	2.172072	7.138224	0.304287	0.7612
HSC	2.633412	2.853741	0.922793	0.3571
FZE	1.714269	1.591853	1.076902	0.2826
FA	0.049704	0.107261	0.463395	0.6435
FL	0.046868	0.062813	0.746156	0.4563

R-squared	0.017664	Mean dependent var	4.356483
Adjusted R-squared	-0.016356	S.D. dependent var	19.94388
S.E. of regression	20.10631	Akaike info criterion	8.876724
Sum squared resid	93384.95	Schwarz criterion	9.007248
Log likelihood	-1056.207	Hannan-Quinn criter.	8.929315
F-statistic	0.519229	Durbin-Watson stat	1.906653
Prob(F-statistic)	0.841457		

Ramsey RESET Test
Equation: UNTITLED
Specification: FMV C STC TRDC PGR SPE HSC FZE FA FL
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	3.000650	230	0.0030
F-statistic	9.003901	(1, 230)	0.0030
Likelihood ratio	9.216136	1	0.0024

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	39.38882	1	39.38882
Restricted SSR	1045.556	231	4.526216
Unrestricted SSR	1006.167	230	4.374640

LR test summary:

	Value	df
Restricted LogL	-517.1451	231
Unrestricted LogL	-512.5370	230

Unrestricted Test Equation:
Dependent Variable: FMV
Method: Least Squares
Date: 11/18/25 Time: 16:01
Sample: 1 240
Included observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.044938	4.472000	2.022571	0.0443
STC	0.811115	1.618014	0.501303	0.6166
TRDC	-0.267262	0.312068	-0.856424	0.3927
PGR	5.668102	8.733871	0.648979	0.5170
SPE	-3.373339	1.860449	-1.813185	0.0711
HSC	-0.405853	0.364008	-1.114953	0.2660
FZE	-1.017715	0.561438	-1.812693	0.0712
FA	-0.012457	0.013544	-0.919770	0.3587
FL	-0.017060	0.010617	-1.606772	0.1095
FITTED^2	0.667237	0.222364	3.000650	0.0030

R-squared	0.120514	Mean dependent var	1.972171
Adjusted R-squared	0.086100	S.D. dependent var	2.187871
S.E. of regression	2.091564	Akaike info criterion	4.354475
Sum squared resid	1006.167	Schwarz criterion	4.499502
Log likelihood	-512.5370	Hannan-Quinn criter.	4.412910
F-statistic	3.501834	Durbin-Watson stat	1.231613
Prob(F-statistic)	0.000442		

APPENDIX 2: RAW DATA REGRESSION

S/N	COMPANY	YEAR	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
1	Berger Paints Nig	2015	0.9256	0.2072	1	0.0202	0.2259	0	6.5906	42	33.59
1	Berger Paints Nig	2016	0.6986	0.2177	1	0.0170	0.2770	0	6.6130	43	36.52
1	Berger Paints Nig	2017	0.7828	0.1878	1	0.0124	0.2740	0	6.6346	44	38.74
1	Berger Paints Nig	2018	0.8149	0.1380	1	0.0102	0.2456	0	6.6566	45	37.97
1	Berger Paints Nig	2019	0.7367	0.1702	1	0.0104	0.2637	0	6.7047	46	39.34
1	Berger Paints Nig	2020	0.7605	0.1871	1	0.0120	0.2642	0	6.6965	47	36.70
1	Berger Paints Nig	2021	0.7932	0.1382	1	0.0078	0.2398	0	6.7085	48	36.79
1	Berger Paints Nig	2022	0.7108	0.1205	1	0.0069	0.2186	0	6.7426	49	39.89
1	Berger Paints Nig	2023	1.0394	0.1056	1	0.0075	0.1956	0	6.8193	50	46.82
1	Berger Paints Nig	2024	1.2617	0.1064	1	0.0068	0.1993	0	6.8763	51	49.10
2	Beta Glass Company	2015	1.1893	0.1265	0	0.0015	0.1549	0	7.4341	30	35.31
2	Beta Glass Company	2016	0.5669	0.1187	0	0.0013	0.1442	0	7.5820	31	35.29
2	Beta Glass Company	2017	0.8035	0.1175	0	0.0012	0.0934	0	7.5822	32	34.20
2	Beta Glass Company	2018	0.9055	0.1196	0	0.0011	0.1005	0	7.6635	33	35.70
2	Beta Glass Company	2019	0.6574	0.1037	1	0.0014	0.0926	1	7.7167	34	33.64
2	Beta Glass Company	2020	0.3114	0.1233	1	0.0017	0.1109	1	7.7321	35	31.08
2	Beta Glass Company	2021	0.3329	0.0955	1	0.0013	0.0858	1	7.8001	36	33.25
2	Beta Glass Company	2022	0.7037	0.0724	1	0.0010	0.0639	1	7.8805	37	39.08
2	Beta Glass Company	2023	0.8519	0.0771	1	0.0011	0.0576	1	8.0288	38	51.33
2	Beta Glass Company	2024	0.8076	0.0491	1	0.0006	0.0545	1	8.1282	**39**	51.77
3	Cadbury Nig	2015	1.5109	0.1446	0	0.0528	0.0686	0	7.4536	40	56.77
3	Cadbury Nig	2016	1.1852	0.1384	0	0.0514	0.0692	0	7.4532	41	61.06
3	Cadbury Nig	2017	1.5309	0.1523	0	0.0435	0.0482	0	7.4537	42	58.69
3	Cadbury Nig	2018	1.0732	0.1480	0	0.0400	0.0434	0	7.4398	43	53.95
3	Cadbury Nig	2019	1.0632	0.1382	0	0.0391	0.0467	0	7.4594	44	52.90
3	Cadbury Nig	2020	1.0072	0.1644	0	0.0218	0.0328	0	7.5213	45	59.20
3	Cadbury Nig	2021	0.9248	0.0886	0	0.0274	0.0224	0	7.6403	46	68.79
3	Cadbury Nig	2022	3.5305	0.1051	0	0.0061	0.0230	0	7.7761	47	77.72
3	Cadbury Nig	2023	4.1120	0.0821	0	0.0093	0.0270	0	7.8023	48	110.27
3	Cadbury Nig	2024	1.6163	0.0577	0	0.0057	0.0466	0	7.8600	49	93.96
4	Cement company of Northern/Bua cement	2015	1.0936	0.0373	1	0.0070	0.0070	0	7.2342	22	40.84
4	Cement company of Northern/Bua cement	2016	0.7167	0.0448	1	0.0061	0.0070	0	7.3017	23	42.62
4	Cement company of Northern/Bua cement	2017	0.8996	0.0388	1	0.0039	0.0047	0	7.3918	24	41.53
4	Cement company of Northern/Bua cement	2018	0.7742	0.0224	1	0.0015	0.0039	0	8.6884	25	4.10

S/N	COMPANY	YEAR	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
4	Cement company of Northern/Bua cement	2019	1.5297	0.0448	1	0.0010	0.0599	1	8.6726	26	22.71
4	Cement company of Northern/Bua cement	2020	3.9276	0.0387	1	0.0010	0.0493	1	8.8844	27	50.94
4	Cement company of Northern/Bua cement	2021	3.5703	0.0347	1	0.0012	0.0434	1	8.8624	28	45.35
4	Cement company of Northern/Bua cement	2022	4.3170	0.0238	1	0.0011	0.0479	1	8.9415	29	52.96
4	Cement company of Northern/Bua cement	2023	3.6637	0.0234	1	0.0014	0.0267	1	9.085	30	68.31
4	Cement company of Northern/Bua cement	2024	2.7581	0.0228	1	0.0009	0.0252	1	9.1960	31	75.26
5	Champion Breweries	2015	2.7135	0.2270	0	0.0044	0.1683	0	6.9608	33	31.05
5	Champion Breweries	2016	2.0144	0.2254	0	0.0039	0.0414	0	6.9983	34	22.99
5	Champion Breweries	2017	1.7770	0.2142	0	0.0047	0.0863	0	7.0038	35	19.36
5	Champion Breweries	2018	1.7113	0.1915	0	0.0059	0.2019	1	7.0207	36	24.33
5	Champion Breweries	2019	0.8820	0.1265	0	0.0041	0.1361	1	7.0407	37	26.86
5	Champion Breweries	2020	0.8848	0.1485	0	0.0049	0.1104	1	7.0557	38	29.25
5	Champion Breweries	2021	1.6806	0.1131	0	0.0033	0.1197	1	7.1299	39	31.64
5	Champion Breweries	2022	2.6750	0.1453	0	0.0027	0.1165	1	7.1890	40	28.05
5	Champion Breweries	2023	1.8457	0.1321	0	0.0052	0.1205	1	7.3129	41	45.53
5	Champion Breweries	2024	2.0324	0.1011	0	0.0040	0.1151	1	7.3293	42	43.52
6	Chemical & Allied Product	2015	7.7273	0.0762	0	0.0093	0.1317	0	6.5327	38	55.41
6	Chemical & Allied Product	2016	4.6190	0.0745	0	0.0108	0.1368	0	6.6916	39	53.55
6	Chemical & Allied Product	2017	4.7370	0.0775	0	0.0110	0.1477	0	6.7002	40	55.28
6	Chemical & Allied Product	2018	3.7327	0.0706	0	0.0098	0.1499	0	6.8001	41	55.49
6	Chemical & Allied Product	2019	2.4725	0.0865	0	0.0100	0.1632	0	6.8300	42	62.70
6	Chemical & Allied Product	2020	2.2028	0.0898	0	0.0095	0.1925	0	6.9307	42	56.08

S/N	COMPANY	YEAR	FMV	STC	TRDC	PGR	SPE	HSC	FZE	FA	FL
6	Chemical & Allied Product	2021	1.9014	0.0971	0	0.0041	0.1657	0	7.0834	43	63.60
6	Chemical & Allied Product	2022	1.5895	0.1002	0	0.0042	0.1503	0	7.1273	44	50.77
6	Chemical & Allied Product	2023	1.5945	0.0833	0	0.0040	0.1658	0	7.1868	45	48.16
6	Chemical & Allied Product	2024	2.0329	0.0915	0	0.0028	0.1695	0	7.2940	46	45.95
7	Cutix	2015	1.3535	0.0658	1	0.0151	0.1193	1	6.2942	29	62.23
7	Cutix	2016	1.3361	0.0635	1	0.0147	0.0902	1	6.2769	30	54.00
7	Cutix	2017	1.2750	0.0622	1	0.0195	0.1115	1	6.3673	31	56.48
7	Cutix	2018	1.0143	0.0571	1	0.0172	0.1213	1	6.4527	32	54.19
7	Cutix	2019	1.2156	0.0731	1	0.0153	0.1296	1	6.4566	33	43.62
7	Cutix	2020	1.6189	0.0741	1	0.0153	0.1146	1	6.5597	34	50.23
7	Cutix	2021	1.3771	0.0588	1	0.0046	0.0862	1	6.6805	35	55.01
7	Cutix	2022	2.1239	0.0643	1	0.0044	0.0852	1	6.7089	36	47.14
7	Cutix	2023	1.8144	0.0609	1	0.0033	0.0925	1	6.7666	37	45.77
7	Cutix	2024	1.9762	0.0592	1	0.0029	0.0883	1	6.8627	38	47.80
8	Dangote Cement	2015	2.9906	0.0623	0	0.0029	0.0662	0	9.0457	6	9.05
8	Dangote Cement	2016	2.3430	0.0743	0	0.0037	0.0596	0	9.1844	7	9.18
8	Dangote Cement	2017	2.7826	0.0620	0	0.0034	0.0563	0	9.2216	8	9.22
8	Dangote Cement	2018	2.2270	0.0636	0	0.0023	0.0583	0	9.2290	9	9.23
8	Dangote Cement	2019	1.8028	0.0704	0	0.0024	0.0607	0	9.2412	10	9.24
8	Dangote Cement	2020	2.6229	0.0699	0	0.0030	0.0583	0	9.3059	11	9.31
8	Dangote Cement	2021	2.4196	0.0526	0	0.0026	0.0465	0	9.3788	12	9.38
8	Dangote Cement	2022	2.2879	0.0558	0	0.0015	0.0494	0	9.4176	13	9.42
8	Dangote Cement	2023	1.9809	0.0621	0	0.0013	0.0573	0	9.5954	14	56.18
8	Dangote Cement	2024	1.9220	0.0627	0	0.0025	0.0616	0	9.8064	15	66.03
9	Dangote Sugar	2015	1.0602	0.0455	1	0.0020	0.0526	1	8.0113	9	43.34
9	Dangote Sugar	2016	0.8385	0.0309	1	0.0012	0.0333	1	8.2514	10	62.92
9	Dangote Sugar	2017	1.5428	0.0304	1	0.0011	0.0311	1	8.2902	11	52.46
9	Dangote Sugar	2018	1.3566	0.0460	1	0.0017	0.0452	1	8.2433	12	43.48
9	Dangote Sugar	2019	1.1572	0.0422	1	0.0003	0.0485	1	8.2871	13	44.17
9	Dangote Sugar	2020	1.4163	0.0388	1	0.0012	0.0420	1	8.4441	14	55.14
9	Dangote Sugar	2021	1.4932	0.0324	1	0.0014	0.0385	1	8.5557	15	64.22
9	Dangote Sugar	2022	3.8299	0.0266	1	0.0011	0.0256	1	8.6923	16	65.23
9	Dangote Sugar	2023	12.7461	0.0287	1	0.0011	0.0301	1	8.7787	17	86.81
9	Dangote Sugar	2024	1.6430	0.0268	1	0.0009	0.0262	1	8.8541	18	109.06
10	Flour Mills Of Nigeria	2015	0.8224	0.0469	0	0.0085	0.0657	1	8.5351	37	75.40
10	Flour Mills Of Nigeria	2016	0.7276	0.0521	0	0.0064	0.0463	1	8.5383	38	72.27
10	Flour Mills Of Nigeria	2017	0.8519	0.0351	0	0.0048	0.0351	1	8.6836	39	78.75

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10	Flour Mills Of Nigeria	2018	0.7251	0.0382	0	0.0046	0.0358	1	8.6110	40	63.12
10	Flour Mills Of Nigeria	2019	0.7903	0.0481	0	0.0060	0.0368	1	8.6200	41	63.78
10	Flour Mills Of Nigeria	2020	0.7891	0.0510	0	0.0066	0.0407	1	8.6359	42	96.39
10	Flour Mills Of Nigeria	2021	0.7952	0.0434	0	0.0037	0.0376	1	8.7362	43	67.95
10	Flour Mills Of Nigeria	2022	0.8972	0.0340	0	0.0031	0.0273	1	8.9684	44	21.09
10	Flour Mills Of Nigeria	2023	0.9106	0.0353	0	0.0026	0.0263	1	9.0404	45	79.48
10	Flour Mills Of Nigeria	2024	0.9506	0.0273	0	0.0019	0.0207	1	9.1739	46	84.34
11	Guinness Nig	2015	2.0402	0.1074	0	0.0083	0.1087	0	8.0872	51	60.46
11	Guinness Nig	2016	1.5662	0.1208	0	0.0101	0.1276	0	8.1367	52	69.59
11	Guinness Nig	2017	1.6072	0.0917	0	0.0056	0.1087	0	8.1645	53	70.59
11	Guinness Nig	2018	0.9502	0.0671	0	0.0052	0.0692	0	8.1854	54	4.28
11	Guinness Nig	2019	0.8259	0.0667	0	0.0060	0.0750	0	8.2063	55	44.61
11	Guinness Nig	2020	2.8921	0.0999	0	0.0090	0.1374	0	8.1588	56	49.33
11	Guinness Nig	2021	5.0482	0.0707	0	0.0063	0.0643	0	8.2289	57	56.15
11	Guinness Nig	2022	7.0444	0.0667	0	0.0053	0.0663	0	8.3337	58	58.28
11	Guinness Nig	2023	5.8971	0.0722	0	0.0055	0.0743	0	8.3834	59	76.66
11	Guinness Nig	2024	1.6709	0.0602	0	0.0045	0.0652	0	8.3544	60	99.04
12	Honywell Flour Mill	2015	0.8830	0.0328	0	0.0000	0.0378	0	7.8321	7	70.10
12	Honywell Flour Mill	2016	0.7165	0.0296	0	0.0000	0.0417	0	7.8811	8	78.48
12	Honywell Flour Mill	2017	0.5132	1.0009	0	0.0000	0.0421	0	8.0537	9	53.75
12	Honywell Flour Mill	2018	0.5141	1.0028	0	0.0000	0.0288	0	8.0963	10	54.83
12	Honywell Flour Mill	2019	0.5270	0.0382	0	0.0058	0.1138	1	8.1383	11	58.79
12	Honywell Flour Mill	2020	0.4949	0.0361	0	0.0000	0.1054	1	8.1531	12	59.73
12	Honywell Flour Mill	2021	3.2968	0.0419	0	0.0025	0.0235	1	8.1684	13	60.67
12	Honywell Flour Mill	2022	3.2692	0.0359	0	0.0021	0.0197	1	8.1757	14	62.35
12	Honywell Flour Mill	2023	3.2032	0.0468	0	0.0021	0.0248	1	8.2175	15	80.01
12	Honywell Flour Mill	2024	1.0542	0.0293	0	0.0013	0.0186	1	8.1731	16	84.66
13	International Breweries	2015	2.3143	0.0841	1	0.0064	0.0851	0	7.4796	21	59.67
13	International Breweries	2016	2.3692	0.0850	1	0.0084	0.0866	0	7.5248	22	58.19
13	International Breweries	2017	4.6584	0.0748	1	0.0011	0.0944	0	7.6529	23	69.13
13	International Breweries	2018	1.6757	0.0733	1	0.0016	0.1317	0	8.4918	24	88.67
13	International Breweries	2019	1.1161	0.0844	1	0.0010	0.1977	0	8.5625	25	97.96
13	International Breweries	2020	0.7301	0.0830	1	0.0010	0.2041	0	8.5713	26	59.28

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13	International Breweries	2021	0.9950	0.0552	1	0.0031	0.1969	0	8.6721	27	71.21
13	International Breweries	2022	1.0018	0.0586	1	0.0028	0.1440	0	8.6851	28	75.77
13	International Breweries	2023	2.1913	0.0618	1	0.0025	0.1254	0	8.8652	29	83.01
13	International Breweries	2024	1.6665	0.0397	1	0.0019	0.0649	0	8.8621	30	49.63
14	Lafarge Cement Wapco Nig	2015	1.5501	0.1136	1	0.0097	0.1011	0	8.6561	37	61.12
14	Lafarge Cement Wapco Nig	2016	0.8957	0.1324	1	0.0116	0.1220	0	8.7002	38	50.46
14	Lafarge Cement Wapco Nig	2017	1.0683	0.1092	1	0.0077	0.1284	0	8.7617	39	72.83
14	Lafarge Cement Wapco Nig	2018	0.9277	0.1706	1	0.0038	0.1705	0	8.7330	40	75.12
14	Lafarge Cement Wapco Nig	2019	0.7474	0.0885	1	0.0060	0.0824	0	8.6965	41	30.62
14	Lafarge Cement Wapco Nig	2020	0.9594	0.0587	1	0.0044	0.0794	0	8.7052	42	29.10
14	Lafarge Cement Wapco Nig	2021	1.0137	0.0867	1	0.0046	0.0722	0	8.7217	43	28.14
14	Lafarge Cement Wapco Nig	2022	0.9361	0.0650	1	0.0031	0.0605	0	8.7787	44	30.73
14	Lafarge Cement Wapco Nig	2023	1.0045	0.0712	1	0.0033	0.0680	0	8.833	45	36.15
14	Lafarge Cement Wapco Nig	2024	1.6281	0.0019	1	0.0019	0.0576	0	8.996	46	49.05
15	Mcnichols Consolidated	2015	1.1441	0.0225	0	0.0045	0.0331	0	5.6234	7	38.01
15	Mcnichols Consolidated	2016	1.1681	0.0309	0	0.0036	0.0328	0	5.6768	8	36.54
15	Mcnichols Consolidated	2017	0.8751	0.0397	0	0.0078	0.0416	0	5.7318	9	39.59
15	Mcnichols Consolidated	2018	1.4505	0.0474	0	0.0035	0.9459	0	5.9168	10	59.65
15	Mcnichols Consolidated	2019	0.7022	0.0471	0	0.0030	0.9743	1	5.8589	11	52.05
15	Mcnichols Consolidated	2020	0.4994	0.0421	0	0.0023	0.9677	1	5.8525	12	50.32
15	Mcnichols Consolidated	2021	0.3483	0.0432	0	0.0023	0.9782	1	5.8404	13	48.14
15	Mcnichols Consolidated	2022	0.1973	0.0381	0	0.0019	0.9746	1	5.8154	14	41.80
15	Mcnichols Consolidated	2023	1.3242	0.0291	0	0.0023	0.9780	1	6.0288	15	44.64
15	Mcnichols Consolidated	2024	1.8642	0.0103	0	0.0004	0.9821	1	6.1187	16	49.63
16	Nascon Allied	2015	1.5711	0.0880	0	0.0033	0.0787	1	7.2120	24	56.50
16	Nascon Allied	2016	1.4870	0.0685	0	0.0029	0.0809	1	7.3910	25	67.30

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16	Nascon Allied	2017	1.9296	0.0576	0	0.0022	0.0655	1	7.4789	26	61.71
16	Nascon Allied	2018	2.0971	0.0677	0	0.0026	0.0725	1	7.4810	27	60.71
16	Nascon Allied	2019	1.5058	0.0675	0	0.0028	0.0744	1	7.5874	28	71.32
16	Nascon Allied	2020	1.8109	0.0739	0	0.0032	0.0853	1	7.6465	29	71.29
16	Nascon Allied	2021	8.6306	0.0680	0	0.0030	0.0841	1	7.6077	30	63.89
16	Nascon Allied	2022	5.3025	0.0405	0	0.0019	0.0535	1	7.7445	31	65.71
16	Nascon Allied	2023	18.1362	0.0466	0	0.0023	0.0582	1	7.9222	32	67.14
16	Nascon Allied	2024	1.5308	0.0394	0	0.0018	0.0575	1	7.8949	33	45.15
17	Dn Meyer Plc	2015	0.7742	0.1732	1	0.0000	0.2686	1	6.3670	37	70.57
17	Dn Meyer Plc	2016	0.8184	0.1655	1	0.0041	0.2958	1	6.3435	38	78.87
17	Dn Meyer Plc	2017	0.9217	0.1547	1	0.0051	0.3399	1	6.2828	39	82.00
17	Dn Meyer Plc	2018	0.7246	0.1702	1	0.0004	0.3515	1	6.2709	40	64.46
17	Dn Meyer Plc	2019	0.4737	0.1846	1	0.0069	0.2757	1	6.5737	41	82.66
17	Dn Meyer Plc	2020	0.5023	0.2133	1	0.0137	0.4996	1	6.4845	42	42.08
17	Dn Meyer Plc	2021	0.5918	0.1380	1	0.0080	0.2786	1	6.3061	43	47.87
17	Dn Meyer Plc	2022	0.8357	0.1317	1	0.0085	0.2382	1	6.2875	44	25.28
17	Dn Meyer Plc	2023	0.8692	0.0897	1	0.0054	0.1810	1	6.3895	45	31.31
17	Dn Meyer Plc	2024	1.8328	0.0710	1	0.0027	0.1846	1	6.4534	46	35.56
18	Nestle Nig	2015	6.2908	0.1243	1	0.0131	0.7769	1	8.0763	37	68.12
18	Nestle Nig	2016	4.3011	0.1144	1	0.0118	0.7899	1	8.2294	38	81.79
18	Nestle Nig	2017	8.9926	0.0932	1	0.0095	0.7719	1	8.1667	39	69.43
18	Nestle Nig	2018	7.8446	0.0883	1	0.0085	0.7723	1	8.2104	40	69.06
18	Nestle Nig	2019	6.7536	0.0913	1	0.0086	0.7463	1	8.2864	41	76.44
18	Nestle Nig	2020	8.5254	0.0926	1	0.0098	0.7756	1	8.3913	42	88.10
18	Nestle Nig	2021	9.1463	0.0854	1	0.0089	0.0327	1	8.4917	43	88.10
18	Nestle Nig	2022	1.1371	0.0779	1	0.0081	0.0258	1	8.6181	44	93.11
18	Nestle Nig	2023	1.2840	0.0746	1	0.0074	0.0375	1	8.7648	45	113.41
18	Nestle Nig	2024	1.9152	0.0586	1	0.0052	0.0339	1	8.9338	46	110.75
19	Nigeria Breweries	2015	3.5291	0.1295	1	0.0143	0.0816	1	8.5517	43	51.62
19	Nigeria Breweries	2016	3.7111	0.1244	1	0.0144	0.0699	1	8.5648	44	54.81
19	Nigeria Breweries	2017	3.3030	0.1138	1	0.0124	0.0595	1	8.5823	45	53.35
19	Nigeria Breweries	2018	2.2932	0.1211	1	0.0134	0.0593	1	8.5891	46	57.03
19	Nigeria Breweries	2019	1.7778	0.1233	1	0.0142	0.0599	1	8.5829	47	56.18
19	Nigeria Breweries	2020	1.6429	0.1216	1	0.0152	0.0570	1	8.6492	48	63.85
19	Nigeria Breweries	2021	1.4776	0.1134	1	0.0133	0.0600	1	8.6862	49	90.71
19	Nigeria Breweries	2022	1.2535	0.0932	1	0.0115	0.0511	1	8.7923	50	70.98
19	Nigeria Breweries	2023	1.3853	0.0925	1	0.0100	0.0478	1	8.9008	51	92.05
19	Nigeria Breweries	2024	1.4634	0.0631	1	0.0052	0.0431	1	9.0562	52	59.24
20	Nigerian Enamelware	2015	1.0971	0.0427	0	0.0177	0.0793	1	6.7009	37	74.01
20	Nigerian Enamelware	2016	1.0765	0.0392	0	0.0185	0.0617	1	6.6570	38	68.93

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20	Nigerian Enamelware	2017	1.0050	0.0167	0	0.0007	0.0556	1	6.7654	39	75.51
20	Nigerian Enamelware	2018	1.0448	0.0164	0	0.0009	0.0943	1	6.6605	40	68.89
20	Nigerian Enamelware	2019	1.1113	0.0218	0	0.0016	0.0988	1	6.6416	41	73.02
20	Nigerian Enamelware	2020	0.5127	0.0526	0	0.0363	0.1205	0	6.6979	41	83.33
20	Nigerian Enamelware	2021	0.4726	0.0797	0	0.2576	0.4407	0	6.6646	42	87.97
20	Nigerian Enamelware	2022	1.2465	0.0649	0	0.0509	1.0941	0	6.6443	43	96.72
20	Nigerian Enamelware	2023	0.9178	0.1043	0	0.0309	0.4739	0	6.7808	44	69.67
20	Nigerian Enamelware	2024	1.8837	0.0191	0	0.0082	0.1403	0	6.3984	45	129.74
21	Nigerian Northen Flour Mill	2015	1.1366	0.0357	1	0.0008	0.0440	1	6.6141	38	99.51
21	Nigerian Northen Flour Mill	2016	0.3096	0.1693	0	0.0024	0.3313	1	6.5949	39	12.42
21	Nigerian Northen Flour Mill	2017	0.8400	0.1337	0	0.0245	0.2419	1	6.6372	40	71.42
21	Nigerian Northen Flour Mill	2018	0.8521	0.0804	0	0.0138	0.1532	1	6.7721	41	80.16
21	Nigerian Northen Flour Mill	2019	1.1096	0.0630	0	0.0071	0.0667	0	6.6984	42	76.95
21	Nigerian Northen Flour Mill	2020	1.2694	0.0384	0	0.0043	0.0579	1	6.9290	43	67.39
21	Nigerian Northen Flour Mill	2021	0.8151	0.0402	0	0.0053	0.0566	1	6.8672	44	62.15
21	Nigerian Northen Flour Mill	2022	0.8679	0.0324	0	0.0033	0.0370	0	7.1243	45	78.56
21	Nigerian Northen Flour Mill	2023	0.8304	0.0350	0	0.0035	0.0410	0	7.2511	46	63.09
21	Nigerian Northen Flour Mill	2024	0.9858	0.0331	0	0.0023	0.0373	0	7.2534	47	54.93
22	Pz Cussons	2015	1.7961	0.0862	0	0.0065	0.0905	0	7.8286	42	38.51
22	Pz Cussons	2016	1.0175	0.0997	0	0.0072	0.1070	0	7.8717	43	41.69
22	Pz Cussons	2017	1.3178	0.0823	0	0.0052	0.0708	0	7.9547	44	49.90
22	Pz Cussons	2018	0.8722	0.1133	0	0.0114	0.0823	0	7.9475	45	49.10
22	Pz Cussons	2019	0.6768	0.1049	0	0.0118	0.1049	0	7.9027	46	42.76
22	Pz Cussons	2020	0.8491	0.1142	0	0.0129	0.1142	0	7.8946	47	55.95
22	Pz Cussons	2021	0.8453	0.0812	0	0.0096	0.0812	0	7.9412	48	63.63
22	Pz Cussons	2022	1.0724	0.0757	0	0.0085	0.0757	0	8.0393	49	65.53
22	Pz Cussons	2023	1.1747	0.0703	0	0.0078	0.0703	0	8.2211	50	70.93
22	Pz Cussons	2024	1.7313	0.0588	0	0.0062	0.0588	0	8.1961	51	117.51
23	Unilever Nig	2015	4.0013	0.1175	1	0.0112	0.1181	0	7.7005	43	84.05
23	Unilever Nig	2016	2.4865	0.0967	1	0.0099	0.0848	0	7.8603	44	83.87

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23	Unilever Nig	2017	1.3711	0.0812	1	0.0041	0.0664	0	8.0831	45	37.31
23	Unilever Nig	2018	1.5509	0.1048	1	0.0084	0.0850	0	8.1201	46	37.21
23	Unilever Nig	2019	1.2354	0.1759	1	0.0145	0.1426	0	8.0157	47	35.83
23	Unilever Nig	2020	0.7676	0.1784	1	0.0098	0.1262	0	7.9615	48	32.11
23	Unilever Nig	2021	0.4103	0.1308	1	0.0075	0.1196	0	8.0346	49	39.27
23	Unilever Nig	2022	5.3194	0.0990	1	0.0104	0.0894	0	8.0983	50	46.12
23	Unilever Nig	2023	7.3144	0.0969	1	0.0074	0.0828	0	8.0659	51	35.94
23	Unilever Nig	2024	13.1340	0.0831	1	0.0032	0.0728	0	8.1512	52	39.92
24	Vitafoam Nig	2015	1.0165	0.0866	0	0.0000	0.2220	0	7.1612	38	68.02
24	Vitafoam Nig	2016	0.8926	0.1074	0	0.0000	0.2533	0	7.1253	39	73.71
24	Vitafoam Nig	2017	0.9430	0.0823	0	0.0000	0.1872	0	7.1275	40	74.84
24	Vitafoam Nig	2018	0.9836	0.0720	0	0.0000	0.1801	0	7.2051	41	75.79
24	Vitafoam Nig	2019	0.9099	0.0814	0	0.0000	0.1675	0	7.1406	42	56.81
24	Vitafoam Nig	2020	0.9290	0.0804	0	0.0000	0.1761	0	7.3352	43	58.22
24	Vitafoam Nig	2021	1.2659	0.0681	0	0.0000	0.1283	0	7.5022	44	59.31
24	Vitafoam Nig	2022	1.2672	0.0570	0	0.0000	0.1468	0	7.5959	45	60.27
24	Vitafoam Nig	2023	1.2099	0.0514	0	0.0000	0.1023	0	7.6960	46	64.95
24	Vitafoam Nig	2024	1.0505	0.0446	0	0.0000	0.0922	0	7.7105	47	51.25