

HUMAN CAPITAL DEVELOPMENT AND FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS MANUFACTURING FIRMS IN NIGERIA.

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ABSTRACT

The study was aimed at determining the relationship between human capital development and financial performance of listed industrial goods manufacturing firms in Nigeria. The proxies for financial performance are Net Profit Margin, return on assets, and return on equity. The theory underpinning this study is Human capital theory. Ex-post facto research design was considered suitable for the study. The population of this study was thirteen (13) industrial goods manufacturing firms listed on Nigeria Exchange Group. Convenience sampling which is a non-probability sampling technique was adopted in determining the sample size of seven industrial goods manufacturing firms listed on Nigeria Exchange Group from 2013 to 2022. The specific objectives of the study were to: (1) ascertain the relationship between employee training and development cost and net profit margin; (2) investigate the relationship between employee training and development costs and return of assets; (3) evaluate the relationship between employee training and development cost and return on equity. The study formulated 3 research questions and corresponding null hypotheses. It retrieved secondary data from the annual reports of the firms sampled. The study tested the formulated hypotheses using Feasible Generalized Least Square Regressions. Findings revealed that while employee training and development cost have a significant and positive effect on the net profit margin; Staff welfare cost exhibited a significant relationship with the net profit margin of listed industrial goods manufacturing firms in Nigeria; and Recruitment and hiring costs have a significant adverse influence on the net profit margin of listed industrial goods manufacturing firms in Nigeria. It was recommended among other things that firms should prioritize strategic investments in employee training and development programs to enhance skills, knowledge, and capabilities, thereby potentially improving operational efficiency, productivity, and ultimately, net profit margin.

Keywords: Employee Training, Financial Performance, Industrial Goods, Manufacturing Firms, Nigeria.

1.0 INTRODUCTION

1.1 Background of the Study

The financial performance of listed industrial goods manufacturing firms in Nigeria is significantly influenced by human capital costs. The study found that firms with higher human capital tend to have better financial performance, measured by profitability and productivity. The study also noted that the Nigerian Manufacturing sector faces significant challenges including a shortage of skilled workers, high employee turnover rates, and inadequate training and development programs (Oyebanji & Adeyemo, 2018).

The importance of human capital costs in the Nigerian manufacturing sector cannot be overstated. According to a report by the Nigerian Institute of Management (2020), the sector faces significant skills gap, with many employees lacking the necessary technical and vocational skills to drive business growth. Furthermore, the report noted that the high turnover rate among employee in the sector, estimated at 20%, results in significant recruitment and training costs for firms.

Despite these challenges, some listed industrial goods manufacturing firms in Nigeria have made significant investment in human capital development, recognizing the potential returns on investment in terms of improved productivity and financial performance (Oyebanji & Adeyemo, 2018). Investigating the relationship between human capital costs and financial performance in their context can provide valuable insight for firms seeking to optimize their human resources management strategies and improve their overall performance. Studies have consistently shown that human capital costs have a significant impact on firm performance. For examples a study by Boritis *et al* (2002) found that human capital has a positive relationship with financial performance, measured by profitability and market value.

Similarly, a study by Wright *et al* (2001) found that human capital is a significant predictor of firm performance, and that investments in human capital lead to increased productivity and financial returns. In the context of Nigerian manufacturing firms, investments in human capital are critical for improving productivity and competitiveness. According to a report by the Nigerian Manufacturing Association (2019), the sector faces significant challenges, including a lack of skilled workers, inadequate training and development programs and high employee turnover. Despite these challenges, some Nigeria

manufacturing firms made significant investments in human capital development and recognizing the potential return on investment in terms of improved productivity and financial performance.

Studies have shown that investments in human capital lead to improved productivity, efficiency and financial performance or example. A study by Akinyomi *et al* (2019) found that human capital development has a positive impact on firm performance in the Nigeria manufacturing sector. Similarly, a study by Olusegun *et al* (2020) found that investments in human capital lead to improved productivity and efficiency in Nigeria manufacturing firms.

Ghasempour and Yusof (2014) reported on the importance of disclosing information on intellectual capital in financial statements, stating that assets, intellectual capital, and human resources have created significant competitive advantage and that the disclosure of such information had a significant and positive impact on firm value.

Essentially, the concept of human capital cost arose from the transformation of individual competence into highly productive human capital through the effective input of education, health, and moral value. Human capital is a combination of people and money. Capital, in economic term refers to factors of production that are used to produce goods and services that are not significantly consumed in the production process. Along with the definition of capital from an economic standpoint, Boldizzoni (2008) emphasized that the human is the subject in charge of all economic activities such as production and consumption.

The survival, growth and profitability of organizations are more dependent on intellectual assets than physical assets. Human capital is now regarded as a resource that necessitates strategic planning. As a result, clear estimation of expenditure on it has gained significant importance (Ifurueze, 2014). Because this century is knowledge driven, it is necessary for organizations to use their human capital in such a way that their success is not jeopardized. This can be accomplished by ensuring that the human capital that will drive the economy is recognized as a valuable part of an organization's total value in order to assess the impact on corporate Profitability.

1.2 Statement of the Problem

Despite the significance of human capital costs in listed industrial goods manufacturing firms in Nigeria, there is a lack of understanding on how these costs impact financial performance (Abayomi *et al*, 2017) specifically, the relationship between employee training and development costs, staff welfare costs, and recruitment and hiring costs on one hand, and net profit margin, return on assets and return on equity on the other hand is not well understood (Adeniji *et al.*, 2019).

Understanding the relationship between the various components of human capital costs and financial performance is crucial for firms to optimize their human capital investment and improve financial performance (Garlattiet *al*, 2019).

Indication from theoretical and empirical studies demonstrates that human capital costs have a positive or negative influence on the organization's performance. Also, few available studies in Nigeria such as Francis and Adesina (2018), Ali (2017), Ejike and Agha (2018), Olowolaju and Oluwasesin (2016) and Omodero and Ihendinihu (2017) did not focus on industrial goods manufacturing industry, in the light of this, there is no extant empirical studies of the effect of human capital costs on performance in the context of the Nigeria industrial goods manufacturing firms. This creates a gap in knowledge.

1.4 Objectives of the Study

The aim of this study was to determine the relationship between human capital costs and financial performance of listed industrial goods manufacturing firms in Nigeria while the specific objectives were to:

- 1) ascertain the relationship between employee training and development cost and net profit margin;
- 2) investigate the relationship between employee training and development costs and return of assets; and
- 3) evaluate the relationship between employee training and development cost and return on equity;

1.5 Research Questions

- 1) To what extent is the relationship between employee training and development cost and net profit margin of listed industrial goods manufacturing firms in Nigeria?

- 2) What extent is the relationship between employee training and development costs and return on assets of listed industrial goods manufacturing firms in Nigeria?
- 3) How does employee training and development cost relationship affect the return on equity of listed industrial goods manufacturing firms in Nigeria?

1.6 Research Hypotheses

- H01:** Employee training and development cost do not have significant effect on net profit margin of listed industrial goods manufacturing firms in Nigeria.
- H02:** Employee training and development costs have no significant effect on the return on asset of listed industrial goods manufacturing firms in Nigeria.
- H03:** Employee training and development cost have no significant effect on the return on equity of listed industrial goods manufacturing firms in Nigeria.

1.7 Significance of the Study

This study was an additional research work on human capital costs and financial performance of listed industrial goods manufacturing firms in Nigeria context and it's significant because it may become the doorstep for many other researchers.

This study was intended to help the management of industrial goods manufacturing firms and other companies to know the factors that are mostly needed to be taken into account while taking human capital costs decision.

The study provided valuable insights for listed industrial goods manufacturing firms in Nigeria to optimize their human capital investment and improved financial performance. This study on the another hand, seeks to fill a gap in the literature by examining the treatment of human capital cost on capital revenue associated with the cost of employee recruitment, training, and retraining in relation to financial performance.

Furthermore, the results of this study can be used to develop policies, practices, and strategies that enabled higher levels of financial performance and create greater efficiencies in meeting strategic objectives of the listed industrial goods manufacturing firms.

The findings of this study are expected to be of value to researchers and students with an interest in this field of study since it provided literature that can be used for reference for future research and studies.

1.8 Scope of the Study

This study was viewed from three viewpoints, namely:

Content Scope: The content scope centered on human capital costs (employee training and development cost, staff welfare cost and recruitment and hiring cost) and financial performance (net profit margin, return on asset and return on equity) and technology of listed industrial goods manufacturing firms in Nigeria.

Geographical Scope: This study was limited to some listed industrial goods manufacturing firms in Nigerian because of unavailability of data and other necessary publication from the unquoted

Unit of Analysis: The unit of analysis in this study was based at the organizational level because the study focused on the listed industrial goods manufacturing firms listed on the floor of Nigeria Exchange Group (NGX) as at 2022 that have constantly submitted their annual financial position to NGX from 2013-2022.

2.0 REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Human Capital Costs

Human capital provides the ability to achieve economic outcomes at the individual level (Youndt & Snell, 2004). The foundation for unit/firm-level human capital resource (HCR) is provided by leveraging individual-level human capital (HC) to unit/firm-level HCR via emergence or complementarity (Andersen, 2021; Polyhart, *et al.*, 2014; Ployhart & Moliterno, 2011). According to the universality viewpoint, increasing cognitive ability allows organizations to achieve significantly better results (Tzabbar *et al.*, 2017). Firm-level HCR emergence and complementariness are supported by the configurationally perspective as bundles of human resource management (HRM) practices with a greater impact than individual practices (Ployhart & Moliterno, 2011). However, the contingency perspective suggests that the relationship between a firm's HCR and its outcome is context-dependent.

To provide a clearer picture of human capital costs in the statement of financial position, Ifurueze (2013) opined that the International Financial Reporting Standards (IFRS) divided human asset expenses into

two categories: capital and revenue expenses. The classification used by the organization will demonstrate the magnanimity of profitability in capitalizing the majority of its development costs, which accumulate over time and should thus be amortized for the useful years of the employee.

2.1.2 Dimensions of Human Capital Costs

Employees Training and Development Cost

Employee skill development and training are courses designed to help people develop skills that will be useful in their jobs (LI, 2014). Human asset investment in the firm is a strategy for achieving high performance and productivity (LI, *et al*, 2014). Investment in human capital has a significant impact on the three performance metrics of survival, profits, and generated employment (Bosman *et al*, 2004). It is widely assumed that an organization's survival and success are dependent on employees' reactions to their work activities, which is the goal of achieving the firm's mission and strategy (Collins and Smith, 2006). Collins and Smith (2006) tested a theory on how human resources can influence organizational social climate conditions by facilitating knowledge management and firm performance in their study. According to Collins and Smith (2006), commitment in human resource practices, organizational social climate, and exchanged knowledge lead to higher revenue by improving sales in manufacturing firms, which in turn increases firm performance and growth. Currently, it is widely agreed that training is an important tool for assisting companies in developing competitive advantages based on their human resources in order to maintain their sustainability (Aragon-Sánchez *et al*, 2003).

According to economic theory, firms that invest more in employee training expect a high return in productivity and profitability (Georgiadis & Pitelis, 2014). Employees, according to Elnaga and Imran (2013), are the lifeblood of any business, and top management has recognized the importance of investing in employee training and development to improve their performance. Training and developing an employee not only helps them grow, but it also pushes the company to grow. Similarly, it lets employees know that they are appreciated in the organization. Training and development is defined formally as "an attempt to improve current or future employee performance by increasing an employee's ability to perform through learning, usually, by changing the employee's attitude or increasing his or her skills as well as knowledge." An organization that develops its employees' skills and considers its future growth will undoubtedly attract better talent and ensure its long-term viability (Noe, 2017).

Employee Training and Development Cost have different indicators among which are cost of seminar and cost of in-house and external training. A seminar is a form of academic instruction that is typically smaller and more specialized than lecture, with a focus on discussion, presentation and interaction among participant (Hansen, 2019). Seminars are often used in higher education to teach advanced topics, conduct research and develop skills such as critical thinking, problem solving and communication (kadel, 2017). The term “seminar” originates from the Latin word seminarium meaning seedbed and was first used in the 17th century to describe a group of students gathered around a teacher to discuss and learn from each other (Merriam-Webster, n.d.).

In-house training refers to training programs conducted with an organizational, tailored to meet specific needs and goals, often led by internal trainers or subject matter experts, SMEs (Noe, 2017). External training, on the other hand refers to training programs provided by external vendors, consultants, or training institutions, often offering a broader range of topics and expertise Katz, 2017).

Staff Welfare Costs

In the era of globalization, market economy, hyper competition and rapid changing environment, the success of an organization depends on the employees' performance. Employees' performance is an essential requirement if an organization is to maintain its efforts towards the realization of predesigned goals (Dessler, 2008).

According to Human Resource Philosophy employees are an important business resource that must be managed carefully in order to maximize return on investment and achieve business objectives. Organizations have to provide various benefits to ensure employees welfare is taken care off. In fact, in this age and era it is almost impossible to operate an organization without offering a basic set of benefits for employees' welfare. Organizations should understand that a healthy and stress-free worker is a major asset to the organization and should therefore provide welfare services and programmes (Armstrong 2013).

Armstrong (2013) states that employee welfare programs rest mainly on the abstract ground of social responsibility on organizations for those who work for them. Organizations need highly performing employees in order to meet their goals to deliver the products and services they specialize in and hence achieve competitive advantage. Organizations provide welfare facilities to their employees to keep their motivation levels high.

The employee welfare programs can be classified into two categories viz. statutory and non-statutory welfare schemes (Cole, 2002). The statutory schemes are those schemes that are compulsory to provide by an organization as compliance to the laws governing employee health and safety. These include provisions on safety, health and welfare. The non-statutory schemes differ, from organization to organization and from industry to industry. The very logic behind providing welfare schemes is to increase a healthy loyal and the productivity of organization, create efficient, satisfied labour force for the organization promote healthy organizational relations thereby maintaining industrial peace (Cole, 2002).

Indicators of staff welfare cost include Health and Safety Cost, and Retirement benefits cost amongst others. Previous research identified employee wellness as one of the factors that contribute to increased workplace productivity (Zhang *et al.*, 2014). Rose *et al.* (2013) stated in another related study that the employees' working environment can affect the company's performance resulting in poor decision making by management. Fabius *et al.* (2013) supported the perception of employers complying on health and safety issues of employees within the work environment will result in a good business, and they further state that engaging in efforts to promote wellness of employees by providing a good working environment will reduce employees' health risk. According to Rose *et al.* (2013), the work environment has an economic impact on core business such as employee productivity, work quality, absenteeism, and turnover (see also Abrahamsson, 2000).

Recruitment and hiring costs

Recruitment and hiring costs refer to the expenses incurred by an organization when attracting, selecting and hiring new employee (Breaugh, 2019). These costs can be categorized into internal and external costs (Guerrero, 2020).

The literature identifies Internal cost and External cost as indicators of recruitment and hiring. Internal cost refers to the expenses incurred by a business or organization that are related to its internal operations and activities (Warren *et al.*, 2019). These costs are typically incurred in the normal course of business and are not directly related to the sale of product or services (Weygandt *et al.*, 2020). Example compliance costs like legal fees, background check (Breaugh, 2019), administrative cost e.g. paper work document (Guerrero, 2020), etc. External costs refer to the expenses incurred by a business or organization that are related to its external activities and transactions. Purchasing raw materials or goods from suppliers (Weygandt *et al.*, 2020). External costs are typically incurred in the normal course of business and are essential for the production and delivery of goods and services. E.g. Technological Expenses (E.g.

applicant tracking system) Breaugh, 2019) travel expenses e.g. (for interviews recruitment events) and third party expenses, e.g. recruitment agencies, head hunters (Huerrero, 2020).

2.1.3 Financial Performance

Performance measurement tools can be handled properly with suitable techniques (Chen *et al*, 2005). Conventionally, numerous actions have been about economic parts, omission of significant non-financial indicators, to further improve company performance (Hsu & Wang, 2010). In addition, generally financial performance evaluation uses financial indexes, which provides a simple analysis of bank's financial performance compared with the time period (Chen, 2001). Kwan (2003) also mentioned that the financial position report is a common indicator of the financial condition of an organization over a period of time and is used for comparison in a similar industry. In fact, there are different ways to measure financial results. Efficiency can be measured using a variety of methods, such as billing technology, which includes return on capital, return on investment.

2.2 Theoretical Framework

There are several theories of human capital costs, each emphasizing the value of a company and its associated cost of financing. This study is based on Human Capital Theory and Goal Setting Theory.

2.2.1 Human-Capital Theory

Human capital theory is defined as “a modern extension of Adam Smith's explanation of wage differentials by the so-called net (dis) advantages between different employments” by the Dictionary of Sociology. The Human Capital theory proposed by Schultz (1961) and extensively developed by Becker (1964) served as the foundation for this study. The theory derives from labour economics, a branch of economics that focuses on the general workforce in quantitative terms.

According to the theory, education or training increases workers' productivity by imparting useful knowledge and skills, thereby increasing workers' future income through an increase in their lifetime earnings. According to the theory, spending on education or training and development is costly, but it

should be considered an investment because it is done to increase personal income. To explain or support occupational wage differentials, the human capital approach is used.

Human capital theory is often attributed to Adam Smith, the “founding father of economics,” who defined it in 1776 as “the acquired and useful abilities of all the inhabitants or members of the society.” Smith proposed that wage disparities were based on the relative ease or difficulty of performing the jobs involved.

2.3 Empirical Review

Kazeem and Taiwo (2021) presents an appraisal of human capital accounting on performance of Micro Finance Banks (MFB) in Nigeria; specifically using content analysis of the annual reports and financial statements of the sampled Micro Finance Banks. A purposive sample of Sixteen (16) Micro finance banks out of the thirty four (34) existing in Ogun state was investigated. Random sampling technique was used to select respondents in each Micro Finance Banks cutting across directors, employees and shareholders of the Micro Finance Banks. The study revealed that human resources expenditure should be capitalized and treated as assets rather than write off to profit and loss accounts. The study also shows that human resources accounting has a significant effect on MFBs performance. The Study recommends that the accounting profession the world over should create a frame work in the balance sheet to recognize treatment of human resources and appropriate value be attached on the inherent qualities of human capital.

Ahmadu (2021) investigated the association between human capital efficiency and financial performance of quoted Nigerian banks. Data were obtained from audited annual accounts and reports of the studied banks. The study adopted linear regression method of statistical analysis. The finding reveals that human capital efficiency has no significant impact on the EPS of Nigerian banks and Human capital efficiency has no significant impact on the ROE of Nigerian banks. The study found that efficient utilization of human capital does not have any significant impact on the return of equity of banks. Also the size of a bank has no significant impact on its return on equity, while the return on equity of banks cannot be predicted by human capital efficiency and size of the banks.

Prince *et al.* (2021) examined the human resource accounting and its impact on organizational profitability. The study made use of cross-sectional data drawn from the Nigerian Stock Exchange fact book (2019). Eleven firms selected from different sectors of the economy were used. The regression

result revealed that human capital and intangible asset had a positive and insignificant impact on organizational performance.

Enofe, *et al.* (2021), carried out their study to ascertain the relationship between firms financial performance and human resources accounting disclosures on one hand, and the differences in human resources accounting disclosures reporting level between financial sector and non-financial sector companies quoted in the Nigerian Stock exchange. The study made use of secondary sources of data in eliciting the required information needed for this research and it revealed that finds that a positive relationship exists between the financial performance of a company and its level of Human Resource Accounting Disclosure. The study also indicates that financial companies are disclosing human resources accounting information more than non-financial companies and that company's profitability positively influences companies to report the human resources accounting information in their annual report.

Ude and Ekeagwu (2021) examined the relationship between human capital investment on economic performance in Nigeria. The results from employing multiple regression analysis and Wiener- Granger causality using time series data from 1980 to 2019 showed that both education and health expenditure exerted significant impact on economic performance in Nigeria.

Akinjare *et al* (2019) investigated the impact of Human Resource Accounting (HRA) on the performance of Nigerian firms (2012-2016) using ten (10) carefully selected annual reports and financial summaries from oil and gas companies from 2012 to 2016. For the analysis of collected data, the study employs ordinary least squares. According to the findings, both gross staff costs and training and development costs have a positive and significant impact on the performance of Nigerian oil and gas companies.

Bassey and Tapang (2012) investigated the influence of human resources cost on corporate productivity of selected ten listed firms in the Nigerian Stock Exchange. Primary data on Acquisition costs, Development Costs and Corporate Productivity were sourced with the aid of structured questionnaire validated with correlation coefficients ranging from 0.58 to 0.71. Using multiple regression technique, the paper provided statistical support for the existence of a positive and significant relationship between human resource costs and the performance of Nigerian companies, and concluded that capitalized human resource costs are important determinants of company performance.

Adebawojo *et al* (2015) investigated the likely relationship between human assets accounting on the performance of business organizations in Nigeria. They adopted a survey research design with a six steps likert scale questionnaire validated with stability coefficient of 0.807 and 0.870 for Human Asset and

Organizational Performance respectively. The instrument was administered on 18 publicly quoted banks in the Nigerian Capital Market and the data obtained were analyzed using simple regression technique. The results confirm that human asset accounting significantly affect bank performance, and recommended its disclosure as intangible asset in the balance sheet.

Khan and Ali (2011) in an article of human resource disclosure practice of top Bangladesh companies; the study analyzed the disclosure practice of the sampled companies. The study investigated the level of human resources accounting disclosure around top leading companies in the developing countries. The study used content analysis method with a sample of 52 companies and for the period of 3 years. The data collected from the top manufacturing companies and service companies listed on the Dhaka Stock Exchange, the method of selection was on the basis of the market capitalization, the study also examined the trend of human resources accounting disclosure. The findings revealed that human resources accounting disclosure was not as low as reported. The studies concluded that most of the companies disclose information on human capital in the area of employee training, number of employees training, career development, opportunities that firm provide and employee recruiting policies.

Adebawajo (2015) studied human resources accounting and corporate performance. The studied investigated the relationship between human resources accounting on the performance of business in Nigeria. The studies adopted an empirical Ex-post factor research design, on a sample of 18 listed Banks in Nigeria capital market. The studies employed primary data with the aid of a well-constructed questionnaire designed to collect relevant information from the respondents on six steps, Likert scale and validated through peer review with Cronbach Alpha Coefficient of 0.807 and 0.870 for human resources and organization performance respectively. The hypotheses were tested using simple regression model. The result of the analyses confirmed that human resources accounting significantly affects the banks performance and also human capital related information is relevant to the market value of the sampled Banks in Nigeria.

2.5 Gap in Literature

Following the empirical literature review from the instant literature this research work is different from previous studies with regards to proxies used since no previous researcher used exact combination of the proxies utilized in the study and time frame. In this vein, the period of our study spanned from 2015 to 2022 unlike all the literature reviewed that are related to this study.

3.0 METHODOLOGY

3.1 Research Design

The study adopted the Ex-post Facto research design whereby existing historical data were used for the analysis.

3.2 Population of the Study

The population for this study included some listed industrial goods manufacturing firms in Nigeria Stock Exchange (NSE) now Nigeria Exchange group (NXG). The population of interest in this study constitutes all the thirteen (13) industrial goods manufacturing firms listed on Nigeria Exchange group as at 31st December, 2022.

3.3 Sample Size and Sampling Technique

The population of the study indicated that there were thirteen (13) listed industrial goods manufacturing firms in Nigeria Stock Exchange as at 31st December, 2022. The study adopted purposive sampling technique, a type of non-probability sampling (also called convenience sampling) to determine the sample size. It excluded firms without complete data required for analysis and firms that were not active on the exchange throughout the sample period. This is to obtain sample that would produce balanced data set. Consequently, the sample size of this study was 7 listed industrial goods firms in Nigeria.

3.4 Source of Data

The source of data collection was secondary because the study was a quantitative research and the data were available in the financial statements of the sampled companies already prepared by the management.

3.5 Instrument for Data Collection

This study used quantitative research method. Data sourced from the audited and published financial statements of the sampled companies covering a period of 10 years spanning from 2013 to 2022 meaning that secondary data were used for this study. Secondary data are data collected by someone other than the user but still relevant to the research question (Shank & Orlando, 2004). The data collected were in respect of three independent variables: employee training and development cost, staff welfare cost, and recruitment and hiring cost and three dependent variables: net profit margin, return on assets and return on equity.

3.6 Validity of Instrument

To ensure, the formulated instrument measures what it purports to measure in relation to its accuracy in ascertaining the unbiasedness in data collection, the instrument was adequately scrutinized and deemed fit for use. The data collected from audited financial statements in the annual reports were considered

valid and required no further validation since the annual reports were filed with regulatory agencies who scrutinized and validated the content.

3.7 Reliability of the Instrument

Reliability as the consistency or precision of the research instrument to measure whatever concept it is measuring (Baridam, 2001). Since the audited financial statements in annual reports of the sampled firms are statutory documents, they are reliable and therefore requires no further reliability test.

3.8 Methods of Data Analysis

Data analysis involves inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information useful for supporting decision-making and drawing appropriate conclusions (Kothari, 2009). The study utilized of STATA 12 to facilitate computations and analysis. This study adopted the quantitative and statistical methods of data analysis. It utilized univariate analysis, bivariate analysis and multivariate analysis. The multiple linear regression analysis enabled the determination of the extent or degree of relationship between the dependent and independent variables. The multivariate analysis was based on panel data estimation technique. Panel data estimation technique was adopted to control for unobserved heterogeneity in the panels. It is suitable for analysis of data that are both time series and cross-sectional in nature (Cameron & Trevid, 2010).

3.9 Model Specification

The study adopted the modeled financial performance as a function of human capital cost. This can be written thus: $FP = f(HCC)$.

For purposes of estimation, the model was decomposed according to the dependent variable.

$$NPM_{j,t} = \Psi_0 + \Psi_1 ETD_{j,t} + \Psi_2 SWC_{j,t} + \Psi_3 RHC_{j,t} + \varepsilon_{j,t}$$

Where for firm j at year t :

FP = Financial Performance

HCC = Human Capital Cost

NPM = Net Profit Margin

ETD = Employee Training and Development Cost

SWC = Staff Welfare Cost

RHC = Recruitment and Hiring Cost

ε = Error term

Ψ_0 = Intercept of the Model

Ψ_1, Ψ_2, Ψ_3 = Regression parameters for the Model

3.10 Measurement of Variables

Table 3.1 Measurement of Variables

Variable	Measurement	Source
NPM	Profit After Tax/Turnover	Penman (2013)
ETD	Staff training-and development cost.	Micah <i>et-al.</i> (2012); Nwauzor & Lonhjohn (2020).
SWC	Salaries and wages, retirement benefits, compensation cost	Micah <i>et-al.</i> (2012); Nwauzor & Lonhjohn (2020), Okoye & Ifeukwu (2021)
RHC	Cost of recruitment advertisement, cost of interview and selection	Vejsiu (2019)

Source: Researcher's Computations, 2024

3.11 Decision Rule

The study adopted 5% level of significance of the t statistics as the decision rule for acceptance or rejection of any of the formulated hypothesis. A 5% level of significance depicted as probability value (p-value) suggests the probability of 5% margin of error in the result. Accept the null hypothesis if p-value of t-statistic is greater than 0.05. Reject the null hypothesis if p-value of the t statistic is less than or equals to 0.05. Smaller p-values indicate more evidence to reject the null hypothesis (Anderson *et al*, 2017).

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Data Presentation

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
npm	70	0.386	0.155	1.605482	-0.25	13.51
etd (N'000)	70	20984.11	18934	17427.72	0	79341
swc (N'0000)	70	42621.89	37502.5	27373.45	7923	96788
rhc (N'000)	70	20869.2	4919.5	44273.07	-82100	301611

Source: Researcher's computation, 2024

Table 4.1 shows a univariate analysis of 70 firm-year observations. It reveals that NPM of the firms studied has an average value of 0.386 with standard deviation of 1.605482, and minimum value of -0.25 and 13.51 as the maximum value. The standard deviation shows that NPM deviates from both sides of the mean by 1.61. The standard deviation is higher than the value of the mean, implying that the data are widely dispersed from the mean. The mean value of ROA is 0.1561429, suggesting that on average firms in the sample generated 15.6% net profit from utilizing total assets. The range of ROA is from -0.42 to 1.41. The minimum figure of -0.42 implies some firms in the sample recorded losses in utilizing the total assets of the firm. 50% of the firms generate ROA of 10% and above as denoted by the median value. On average, firms in the sample produced ROE of 41% implying that investments of the shareholders were worth 41 times more than their book value. ROE varies widely amongst the firms as indicated by the standard deviation figure which is higher than the mean. The minimum ROE value is -0.81 indicates that some firms experienced negative returns. Employee Training and Development Cost (ETD) measures the expenditure on training and development programs for employees. The mean expenditure on employee training and development in Table 4.1 is approximately N18,934, 000. The standard deviation of N17,427,720,000 indicates less variability in training and development expenditure across the firms. The range from a minimum of N0.00 to a maximum of N79341, 000 shows the diversity in investments made by the firms in employee skill enhancement. Staff Welfare Cost (SWC) which represents the expenditure incurred by firms on employee welfare programs, benefits, and services has a mean of approximately N4, 262,189. The standard deviation of N2, 737,345 suggests low variability in the amount spent on staff welfare across the firms. The range from a minimum of N7, 923,000 to a maximum of N96, 788,000 reflects the varying levels of investment in employee welfare initiatives. 50% of the firms incurred Staff Welfare Cost of N37502500 and above. Table 4.1 shows the Recruitment and Hiring Cost (RHC) with a mean of N20, 869,200 Recruitment and Hiring Cost captures the expenditure on the recruitment/hiring initiatives of the listed firms. The median figure suggests that 50% of the firms incurred N4919500 and above in recruiting new staff members.

4.2 Data Analysis

4.2.1 Bivariate Analysis

To assess the association between one variable and another, the study conducted a correlation analysis. Correlation analysis serves as a deductive tool to determine the nature and strength of association between two variables, revealing whether they are positively or negatively association. The strength of the

association is shown by the correlation coefficient, r , which ranges from -1 to 1. However, it's crucial to note that correlation analysis cannot establish causation. Table 4.2 presents the result of correlation analyses. It shows the correlation between each of the dependent variables and each of the explanatory variables are not significant.

Correlation Matrix

	npm	etd	swc	rhc
npm	1.0000			
etd	-0.0356	1.0000		
swc	-0.1786	-0.0626	1.0000	
rhc	-0.1198	0.2190	-0.0497	1.0000

Source: Researcher's computation, 2024

* denotes 5% level of significance.

4.2.2 Test of Hypotheses

Table 4.3: Regression Results

Dependent Variable: NPM

npm	Coef.	Std. Err.	z	p-value
etd	0.0602544	0.0230397	2.62	0.009
swc	-0.3940614	0.0487127	-8.09	0.000
rhc	-0.0263639	0.004448	-5.93	0.000

Model Statistics

Number of obs	70
Number of groups	7
Time periods	10
Wald chi2(3)	66.40
Prob > chi2	0.0000

Source: Researcher's computation, 2024

4.2.3.1 Test of Hypothesis No 1

H₀₁: Employee training and development cost has no significant effect on the net profit margin of listed industrial goods manufacturing firms in Nigeria.

Table 4.4: Regression Results of Test of Hypothesis No 1 Based

Dependent Variable: NPM	Coef.	Std. Err.	z	p-value
Independent Variable: ETD	0.0602544	0.0230397	2.62	0.009

Source: Extract from Table 4.3

4.2.3.1.1 Interpretation of Result

The result of test of H_{01} in Table 4.6 shows that the coefficient on ETD is positive ($\Psi_1 = 0.0602544$) with test statistics of 2.62 and a p-value of 0.009.

4.2.3.1.2 Decision

The decision rule for accepting or rejecting the hypotheses presented in Chapter 3 of this study provides as follows: Reject H_{01} if the p-value of test statistics is less than 0.05, otherwise Accept H_{01} . Since the p-value is less than 0.05, H_{01} is rejected.

4.2.3.1.3 Finding

Employee training and development cost has a significant effect on the net profit margin of listed industrial goods manufacturing firms in Nigeria.

4.2.3.2: Test of Hypothesis No 2

H_{02} : There is no significant relationship between staff welfare cost and net profit of listed industrial goods manufacturing firms in Nigeria.

Table 4.7: Regression Results of Test of Hypothesis No 2

Dependent Variable: NPM	Coef.	Std. Err.	z	p-value
Independent Variable: SWC	-0.3940614	0.0487127	-8.09	0.000

Source: Extract from Table 4.3

4.2.3.2.1 Interpretation of Result

The result of test of H_{02} in Table 4.7 shows that the coefficient on SWC is negative ($\Psi_2 = -0.3940614$) and t statistics of -8.94 and a p-value of 0.009.

4.2.3.2.2 Decision

The decision rule for accepting or rejecting the hypotheses presented in Chapter 3 of this study provides as follows: Reject H_{02} if p-value of test statistics is less than 0.05, otherwise Accept H_{02} . Since the p-value is not greater than 0.05, H_{02} is rejected.

4.2.3.2.3 Finding

Staff welfare cost exhibited a significant relationship with the net profit margin of listed industrial goods manufacturing firms in Nigeria

4.2.3.3 Test of Hypothesis No 3

H₀₃: Recruitment and hiring costs have no significant effect on the net profit margin of listed industrial goods manufacturing firms in Nigeria.

Table 4.8: Regression Results of Test of Hypothesis No 3 Based on Estimation of Model 1

Dependent Variable: NPM	Coef.	Std. Err.	t	p-value
Independent Variable: RHC	-0.0263639	0.004448	-5.93	0.000

Source: Extract from Table 4.3

4.2.3.3.1 Interpretation of Result

The result of test of H₀₃ in Table 4.8 shows that the coefficient on RHC is negative ($\Psi_3 = -0.0263639$) and t statistics of -5.93 and a p-value of 0.000.

4.2.3.3.2 Decision

The decision rule for accepting or rejecting the hypotheses presented in Chapter 3 of this study provides as follows: Reject H₀₃ if p-value of test statistics is less than 0.05, otherwise Accept H₀₃. Since the p-value is less than 0.05, H₀₃ is rejected.

4.2.3.3.3 Finding

Recruitment and hiring costs have a significant adverse influence on the net profit margin of listed industrial goods manufacturing firms in Nigeria.

4.3 Discussion of findings

The result of multivariate analysis in Table 4.3 as extracted and displayed in Table 4.6 revealed that employee training and development cost (ETD) has a positive coefficient ($\Psi_1 = 0.0602544$). This implies that a percentage increase in ETD is associated with approximately 6% increases in net profit margin of listed industrial manufacturing goods firms in Nigeria, all else held constant. The relationship is statistically significant (p-value = 0.009). The positive direction of the coefficient aligns with the theoretical and a priori expectation and provides support to Olowolaju and Oluwasesin (2016) whose

study covering a period of (Ten) 10 years from 2005, aimed at determining if expenditure on human has influence on the profitability of a sample of 10 listed manufacturing companies on the Nigeria Stock Exchange. It also confirms the findings of Nangih *et al.* (2020) in respect of listed oil and gas firms in Nigeria. Findings from the multivariate analysis in Table 4.3 extracted into Table 4.7 for analysis and interpretation shows that the coefficient on staff welfare cost (SWC) is negative ($\Psi_2 = -0.3940614$). The implication is that as SWC increases by one percent (1%), NPM decreases by approximately 39%, all else remaining constant. This relationship is significant at the 1% level as shown by the probability value of 0.000. The finding provides confirmation of the findings of Okoye and Ifechukwu (2021). Okoye and Ifechukwu (2021) studied five listed breweries in Nigeria from 2007 to 2019 and documented a positive and statistically significant effect of staff cost on net profit margin. The finding of this study contradicts the theoretical prediction that increase in staff welfare benefit exemplified by increase in staff welfare cost will motivate staff to greater staff commitment and productivity with ultimate increase in financial performance. From Table 4.3 and the extract in Table 4.8, it was observed that recruitment and hiring cost (RHC) has a negative coefficient ($\Psi_3 = -0.0263639$). This suggests that as RHC increases by 1%, NPM declines by 2.6%, *ceteris paribus*.

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The summary of the findings is as follows:

1. Employee training and development cost has a significant and positive effect on the net profit margin of listed industrial goods manufacturing firms in Nigeria.
2. Staff welfare cost has a significant adverse effect on the net profit of listed industrial goods manufacturing firms in Nigeria.
3. Recruitment and hiring costs have a statistically significant negative effect on net profit margin of listed industrial goods manufacturing firms in Nigeria.

5.2 Conclusions

Employing 70 firm-year observations from annual reports of seven industrial goods manufacturing firms listed on the Nigerian Exchange Group from 2013 to 2022 to ascertain the effect of human capital cost on financial performance, the study recorded mixed evidence of positive and negative effect. It suggesting that other factors beyond human capital investments such as the specific context and nature of investments as well as competitive pressures in the industry may play a more significant role in determining these outcomes. The overall result showed that human cost whose proxies were employee

training and development, staff welfare cost and recruitment and hiring cost have significant effect on financial performance measured by net profit margin, return on assets, and return on equity.

5.3 Recommendations

In line with the findings, the study came up with the following recommendations:

- i. Listed industrial manufacturing firms should prioritize strategic investments in employee training and development programs to enhance skills, knowledge, and capabilities, thereby potentially improving operational efficiency, productivity, and ultimately, net profit margin.
- ii. Listed industrial goods manufacturing firms in Nigeria should strategically allocate resources towards enhancing employee training and development programs. By investing in the skills and competencies of their workforce, firms can potentially optimize asset utilization efficiency, leading to improved return on assets and overall organizational performance.
- iii. Listed industrial goods manufacturing firms in Nigeria should prioritize investments in comprehensive and targeted employee training and development initiatives. By equipping their workforce with relevant skills and knowledge, firms can potentially enhance operational efficiency, innovation, and overall performance, thereby contributing to improved return on equity and sustainable growth in the competitive market landscape of the industrial goods manufacturing sector in Nigeria.

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