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IMPACT OF HUMAN RESOURCE ACCOUNTING ON FINANCIAL PERFORMANCE OF LISTED MANUFACTURNG FIRMS IN NIGERIA

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Abstract
This study examines the impact of human resource accounting on financial performance of listed manufacturing companies in Nigeria. The study utilizes secondary data, collected from the annual reports and accounts from a sample of forty (40) out of the total fifty-two (52) manufacturing companies listed on the Nigeria Exchange Group between the periods of 2013 to 2022. The study employs explanatory research design to explain the relationship between human resource accounting and financial performance. Regression, correlation and descriptive statistics were employed to analyse the data. Post estimation test (Hausman Test) is conducted to select the best and most consistent estimator. The results of the study revealed that salaries and wages cots (SWC), training and development cost (TDC) and welfare and safety cost (WSC) have positive and significant relationship with financial performance measured by ROA, while pension and gratuity cost (PGC) has negative insignificant relationship with ROA. In addition, the result also shows that, SWC and TDC have positive and significant relationships with financial performance, which is measured by Tobin's Q, while PGC and WSC have positive and insignificant relationship with Tobin's Q. The study recommends among others that to improve financial performance, the management of listed manufacturing companies should continue to invest in human resources by considerably paying adequate salary and wages, and spend reasonable amount on training and staff personal development, because firms' financial performance is an important concern for all listed manufacturing companies in Nigeria.

***Keywords**:* Financial performance, human resource accounting, Salary and wages costs, pension and gratuity costs, training and development costs, welfare and safety costs

1. Introduction

In this era of rapid technological changes, human resources become a significant component of an organization's overall wealth. A company can maintain a long-term competitive edge by investing in its human resources, which will pay off financially in the future. As long as employees provide services to the organization, future economic benefits flow from the investment made in human resources. The success of a company is determined by its unique asset, which is human resource that cannot be imitated or duplicated by competitors, as well as individuals who are hired by the organizations. The financial performance of companies has been a critical area of concern for both managers and investors. The human force is the driving factor behind any organization, and the ability of human resources to effectively and efficiently manage and organize other components of production is directly tied to an organization's success or failure. One of the key contributory factors to an organisational performance is the human resources of an organisation. Human resources play a significant role in coordinating all organisations' activities, towards the achievement of the corporate goals and objectives (Akindehinde, Enyi, and Olutokumbo, 2015).

However, the performance of some companies in the manufacturing industry in Nigeria is deteriorating. For instance, the net income of Unilever Plc decreased from N3.07bn in the year 2016 to a loss of N7.42bn in the year 2019. The net income of Dangote Sugar Plc decreased to N24.1bn in the year 2019 from N37.82bn in the year 2017, which is equivalent to 36.28% decrease. More so, the net income of Lafarge Africa Plc decreased from N28.27bn in the year 2014 to a loss of N13.06bn in the year 2017, which is equivalent to 146.2% decrease (Nigerian Exchange Group Fact Book, 2022). Therefore, the growth and survival of these firms depend solely on the profit made during the operation of their business activities and all these can be as a result of reducing investment in labour.

In addition, manufacturing industry has been in the forefront among those that dominated the activities in the Nigerian Exchange Group (NGX) for about last two decades. In 2023, the nominal GDP rate of about 16.04% of the Nigeria's GDP was generated by this industry. The largest contribution was from the food, beverages, and tobacco sector, which accounted for nearly 5% of the GDP of that year, while cement and textile were other main contributors to the manufacturing industry (Statistica Q4, 2023) GDP from the manufacturing industry in Nigeria increased to ₦1.82 trillion in the third quarter of 2022 from ₦1.51 trillion in the second quarter of 2022 (NBS, 2022) and it is expected to hit ₦2.18 trillion by the end of the last quarter, according to Trading Economics global macro models and analysts' expectation.

As seen from the above that, human resource accounting is essential for any organization. The system gives information to management that may be utilized to assess the financial and managerial elements of human capital. Moreover, despite the importance of human resource accounting, some companies do not subscribe to this view as some companies trim their workforce and reduce benefits accruing to the staff in order to reduce costs and not to run into losses. These categories of companies are on the view that investment in labour should be avoided at all cost (Ayoor, *et. al.* 2020). In profitability parlance, without condemning the aforementioned arguments, increasing cost to increase financial performance is almost illogical, because if the benefit earned does not overweight the cost incurred for that purpose, it will result in declining the presumed profit earned before making or increasing such cost or expenditure.

It is imperative to note that one of the most influential and an indispensable component that drives a firm's performance is the human resource component, this is because when companies invest in human resources in terms of good salaries and wages costs, pension and gratuity costs, training and development costs, and welfare and safety costs, with this, the relationship between human resource accounting and firm performance becomes crucial and a matter of concern for firms. Therefore, this study examines the impact of human resource accounting on the financial performance of listed manufacturing companies in Nigeria covering 2013 - 2022 financial years.

Most of the studies previously conducted on HRA and financial performance among companies documented mixed results. For instance, the studies of Asika, *et. al.* (2017);Shukuhian and Ashraf (2019); Khan (2021); and Gaur, *et. al.*(2021) observed positive relationships. While, Khan and Baloch (2017); Mukola, *et. al.* (2022) and Abraham, *et. al.* (2022) observed negative relationships among others. The reason for the failure to reach a consensus regarding the impact of HRA and financial performance proxies are related to several aspects. Firstly, the wide range of financial performance proxies makes it difficult to determine a general relationship regarding this issue because some previous studies used market-based metrics while others used accounting-based metrics. Therefore, this study uses both accounting and market metrics to come up with a valid conclusion.

Additionally, majority of the previous studies such as; Onyeukwu and Ihendinihu (2021); Ndum and Oranefo (2021); Khan (2021); Onyekwelu and Akani (2021); Ogonni, Olowookore and Ikatun (2022); Adegbayibi, Oyedokun and Adedokun, (2024) has failed to disaggregate the components of human resource accounting to find the individual and separate impact of each component on both the market and accounting based performance measures.Therefore, this study segregates the components of HRA to find out the individual impacts of each component on financial performance of listed manufacturing companies in Nigeria. In light of the foregoing, the study raised the following research hypotheses in null form;

H_{01}: Salaries and wages costs have no significant impact on the financial performance of listed manufacturing firms in Nigeria.

H_{02}: Pension and gratuity costs have no significant impact on the financial performance of listed manufacturing firms in Nigeria.

H_{03}: Training and development costs have no significant impact on the financial performance of listed manufacturing firms in Nigeria.

H_{04}: Safety and welfare costs have no significant impact on the financial performance of listed manufacturing firms in Nigeria.

2. Literature Review

Concept of Human Resource Accounting

The concept of human resource accounting has been defined in so many ways but the basic feature of the system remains the same in every definition. The American Accounting Association's Committee on Human Resource Accounting (AAACHRA, 1973) defines human resources accounting as the process of identifying and measuring data about human resources and communicating this information to interested parties. Human resources accounting, thus, not only involves the measurement of all the costs/investments associated with the recruitment, placement, training and development of employees but also the quantification of the economic value of the people in an organization. There are varieties of components of human resource accounting, these include but are not limited to; salaries and wages; pension and gratuity costs (Olajumoke, 2020), training and development; and welfare and safety costs (Okpako, *et. al.* 2014).

Salary and Wages Costs (SWC)

Salary and wages are the payments to the entire workforce of organizations. Wages and salaries are typically paid to staff in cash or in kind. Surbhi, (2015) defines salary as a fixed sum paid to employees at regular intervals due to their performance/productivity while wages are payments made on an hourly basis to labour for the quantity of work completed daily.

Pension and Gratuity Costs (PGC)

Retired employees of organizations are paid as a retirement benefits in the form of gratuities and this forms part of the responsibilities of employers. The retirement benefits are usually paid in one lump sum at the point of exiting from the company (Oladipo & Fashagba, 2012). This is to assist the employees in alleviating the effects of discontinuity of the regular income of the employer. The fact that gratuity could not reduce the outcome of salary discontinuity led to devising additional benefits of retirement which is known as pension

Training and Development Costs (TDC)

Providing comprehensive on-the-job training for new employees not only ensures these employees know exactly how to perform within their roles, but also increases productivity. To train a new hire efficiently, an organisation will need to invest a sufficient amount of time and money into the cost. Education and training of employees are geared towards making an employee skilled enough to handle complex jobs. Across the world, organizations have sought to rely on the improved skills, knowledge, and capability of the talented workforce to create a competitive advantage (Shu-Rung & Chun-Chieh, 2017).

Welfare and Safety Cost (WSC)

Safety costs are the amount spent in the cause of controlling hazards and their associated physical, psychological and material conditions to protect people, assets, environments and reputation (Abraham, Odobi, & Enwuchola, 2022). Welfare costs are the amount spent about monitoring of working conditions, creation of industrial harmony through infrastructure for health, industrial relations and insurance against diseases, accidents for workers and their families among others (Okpako, *et. al.* 2013).

It can be deduced from the above that human resource accounting recognises the importance of human resources as a valuable asset and seeks to account for it in a systematic and quantifiable manner to enhance organizational performance and efficiency.

Concept of Financial Performance

Generally, performance could be regarded as one of the key determinant factors that are widely used in measuring the success or failure of organizations. The definition of performance has been challenging to researchers, although several research works have been carried out on performance-related issues as how it affects organizations or firms. Financial performance is a general measure of the overall monetary and financial health of a business organization over a specific range of time. Financial performance is a measure of an organization's earnings, profits, appreciation in value as evidenced by the increase in the entity's worthiness (Asimokopoulos, Samitas & Papadugonas, 2021).

Empirical Review

Several researches have sought to empirically establish the relationship between human resource accounting variables and financial performance. These studies were conducted in different continents, countries and at different times, as mentioned below; Adegbayibi, Oyedokun and Adedokun (2024) examines the impact of human resource accounting on financial performance of listed deposit money banks in Nigeria. This study adopted ex-post facto research design. The study population is 13 listed deposit money banks on Nigeria Exchange Group. Census sampling technique was used to select the entire 13 listed deposit money banks form the sample size of the study. Data were collected from secondary source using annual reports of the selected firms from Fact-books published by the Nigerian Exchange Group from 2013 to 2022. Data collected include; employee remuneration cost, employee health and safety cost, employee retirement benefits and return on capital employed. The data were analysed using descriptive statistics and ordinary least square regression analysis. The result showed that employee remuneration cost to revenue has a negative and significant effect on returns on capital employed of DMBs in Nigeria. Also, employee and safety cost has a positive and significant effect on returns on capital employed (ROCE) of listed deposit money banks in Nigeria. Employee retirement benefit has a negative and significant effect on returns on capital employed (ROCE) of deposit money banks in Nigeria. The study concluded that human resources have negative and significance effect on the financial performance of listed deposit money banks in Nigeria.

Marhil et al (2023) investigates the relationship between HRM strategies and employee performance in the Libyan oil and gas sector. Accordingly, 321 survey data were collected from Waha Oil Company employees in Tripoli, Libya. The structural Equation Modelling (SEM) technique was used to analyze the data as well as hypotheses testing. The findings demonstrated that human strategies significantly affect both job satisfaction and employee performance. Job satisfaction influences employee performance. Besides, training and development, recruitment and selection significantly affect job satisfaction, while performance appraisal significantly influences employee performance. The findings are beneficial to HRM department to enhance their emphasis on the crucial factors that boost employee performance through improving job satisfaction.

Similarly in Nigeria, Akam and Ikegwuru (2023), examines human resource accounting on financial performance of listed pharmaceutical firms in Nigeria. Specifically, the study examined the impact of personnel cost, personnel benefit, and cost of training on the return on assets of listed pharmaceutical firms in Nigeria. The findings from the investigation shows that personnel cost, personnel benefit cost, and cost of training positively and significantly influence return on assets while in India, Vyas (2023) examines human resource cost accounting and financial performance of selected Indian IT services and consulting companies, with the main objective of scrutinizing the relationship and impact of human resource cost and net profit for the period of 2017 – 2021 financial years. Correlation results indicate perfectly positive relationship while regression analysis revealed a significant impact of human resource cost on net profit during the study period. The study however, recommended that management of consulting companies make use of various human resource techniques which will have impact on net profit, which are of the utmost importance.

Also in Nigeria, the study by Abraham, *et. al.*(2022), using the sample of fourteen (14) out fifteen (15) listed deposit money banks in Nigeria, investigated the effect of human resource accounting on the financial performance of firms in Nigeria. The Findings from the investigation revealed that; staff remuneration with cost of health care and safety have no significant effects on market value using TQ while cost of staff training has a significant effect on market value of a listed deposit money bank using TQ. The period of 5 years covered by the study is not adequate to generalise the results. The study therefore recommended the need for staff remuneration to be improved so that banks staff can put in their best in other to achieve better performance also the study of Ndum and Oranefo (2021) examines the effect of human resource cost on financial performance of listed brewery firms in Nigeria. Net profit margin and returns on asset (ROA) of the selected companies measured financial performance that served as the dependent variables in the study. The analysis revealed that staff cost has positive and significant effect on the net profit margin of listed brewery firms in Nigeria, while staff cost has positive and insignificant effect on the return on assets of listed brewery firms in Nigeria. The study thereby recommended that Nigeria breweries should imbibe to the culture of capitalizing and reporting investment on human resource that can improve the quality and productivity. This will impact positively on their financial performance consequently on the share price value.

Using a sampled of twelve (12) companies listed on the website of Nigeria Stock Exchange (NGX), Onyekwelu and Akani (2021) empirically investigates the relationship between human resource cost and financial performance of listed companies in Nigeria. Revenues of the sampled firms were served as the dependent variable that measured financial performance, the result showed that human resource cost and human resource accounting are significantly related to financial performance. And using a population and a sample of two (2) Microfinance banks, Onyeukwu, *et. al.* (2021) explored the link between human resource accounting and financial performance of Microfinance Banks (MFB) in Nigeria. Findings from their study for both microfinance banks reveal that personnel cost have significant effect on both net profit margin and return on equity with only return on assets having insignificant relationship. Further findings using only NPF Microfinance banks extended to 2019 indicate that personnel cost has no significant effect on all the explained variables.

From the above, it can be deduced that most of the studies reviewed shows mixed results (positive, negative and no relationship). The reason for failure to reach a consensus regarding the impact of human resource accounting on financial performance proxies may be related to several aspects. The wide range of financial performance proxies makes it difficult to determine a general relationship regarding this issue, because some studies used market based measures while others used accounting based measures. The different methods could lead to different results as some studies used market based measures and some used accounting based measures of financial performance. In addition, regarding the proxies of the human resource accounting, some studies used one (personnel cost) or two proxies to represent human resource accounting and this could also lead to different results. Therefore, the present study segregated the HRA to component and employed the used of four (4) proxies of human resource accounting in order to have a full representation of the variable in order to recognised and found the individual effect of each component on the financial performance of companies.

Theoretical Review

The study is anchored on human capital theory because it best explains the variables in the study. The human capital theory believes that accounting for human resource serves as a means of achieving corporate competitive advantage which reflects ultimately in organizational performance in the future. Furthermore, the theory suggests that organizations that invest in human capital through acquiring of education and skills are more productive and valuable in the labor market, thus leading to an increase in financial performance. Flamholtz and Likert (1981) in Bassey and Tapang (2012) opined that investments in human capital includes all costs related to eliciting productive behaviours from employees, including those related to motivating, monitoring and retraining them. Organizations therefore commit their resources to training employees' specialized skills while at the same time; these make a comparison between investments in the firm's human capital and the potential future returns and benefits accruing from such investments. The relevance of this theory to the study is that; it considers the cost of education, training, development and even worker medical treatment as investments which are expected to reflect in increased or improved productivity of individual workers. The theory postulates that expenditure on education or training and development is costly, and should be consider as investment since it is undertaken with a view to increasing personal incomes. Human capital approach is used to explain or support wage differential.

3. Methodology

The design used in this research is the explanatory approach. The explanatory research design is used to explain the relationship between human resource accounting and financial accounting among the listed manufacturing firms in Nigeria. The population of this study is all the listed manufacturing companies listed on the Nigeria stock exchange on 31st December, 2022. There are fifty-two (52) companies listed on the Nigerian stock exchange on 31st December, 2022. The study adopts a census sampling technique where all the members of the population are considered, but due to some limitations a filter has been employed such that for a company to be included must engages in the expenditure of human resource, that has a direct staff-related expenditure. Therefore, only forty (40) out of fifty-two (52) manufacturing companies across different sectors satisfy the conditions that qualify for inclusion in this research. The nature of this study necessitated the use of secondary data, which is obtained from annual reports, and accounts of the sampled companies as well as the Nigerian Exchange Group Fact Book. The data include information about the variables of the study, which comprises return on assets, salaries and wages costs, pensions and gratuity cost, training and development cost and welfare and safety cost, firm size, firm growth and firm age.

Table 3.1: Variables of the study and their Measurements

Variables	Variables Proxies	Measurements	Literature
Dependent Variables	Return on Assets	Measured as Profit before interest and tax (PBIT) divided by Total assets.	Adetoun*et. al.* (2020); &Ogonni*et. al. (2022)*;
	Tobin's Q (TBQ)	Market Value of Firm divided by Book Value of Firm's Total Assets	Abraham *et. al.* (2022); & Ogonni, *et. al.* (2022).
Independent Variables	Salaries and Wages (SLW)	Measured as natural logarithm of total amount of salaries and wages spent on staff during the year.	Abdullahi and Bello (2021); Onyekwelu and Akani (2021).
	Pension and Gratuity Costs (PGC)	Measured as natural logarithm of total amount of pension and gratuity costs spent on retired staff during the year.	Toyin (2020); Odunayo and Festus (2020); Alekhya and Lakshmi (2020.
	Training and Dev. Costs (TDC)	Measured as natural logarithm of total amount of training and development cost spent on staff during the year.	Onyekwelu and Ironkwe (2021); Mukola*et.*

	Welfare and Safety Costs (WSC)	Measured as natural logarithm of total amount of welfare and safety cost spent on staff during the year.	*al.*(2022). Okpako *et. al.* (2014); Abraham *et. al.* (2022).
Control Variables	Firm Size (FSIZE)	Measured as natural logarithm of total assets.	Ayetobi*et. al.* (2021).
	Firm Age (FAGE)	Measured as current year minus est ablishment year or date of incorporation.	Astuti and Rachmawati (2022)
	Firm Growth (FGRW)	Measured as the current year revenue minus previous year revenue divided by previous year revenue.	Abdullahi and Bello (2021).

Source: Developed from empirical literature, 2024.

Model Specification

The model for the study is a modification of of Abraham, Odobi and Enwuchola, (2022) as presented below;

$ROA_{it} = \alpha_0+\beta_1SWC_{it}+\beta_2PGC_{it}+\beta_3TDC_{it}+ \beta_4WSC_{it}+ \beta_5FSIZE_{it} + \beta_6FAGE_{it} + \beta_7FGRW_{it} + \varepsilon$............(i)

$TQ_{it} = \alpha_0+\beta_1SWC_{it}+\beta_2PGC_{it}+\beta_3TDC_{it}+ \beta_4WSC_{it}+ \beta_5FSIZE_{it} + \beta_6FAGE_{it} + \beta_7FGRW_{it} + \varepsilon$.........(ii)

Where; ROA represents Return on assets, TQ represents Tobin'q, SWC represents Salaries and Wages costs, PGC represents Pension and Gratuities Costs, TDC represents Training and Development Costs, WSC represents Welfare and Safety Costs, FS represents Firm Size, FAGE represents Firm's Age, FGRW represents Firm Growth, α_0 represents Parameters to be estimated, ε represents Error Term, ***i*** represents Firm, ***t***represents Time, while β_1 - β_7 are the beta equation coefficients.

4. Discussion of Findings

This section presents, interprets and discusses the data collected and processed from the annual reports and accounts of the sampled listed manufacturing companies in Nigeria. The study empirically examines the impact of human resource accounting on financial performance of listed manufacturing companies in Nigeria. The study uses correlation and regression analyses and other diagnostic tests that include Multi-collinearity and Heteroskedasticity tests. The model is estimated using ordinary least square estimation (fixed effect) technique with the aid of computer software (STATA Output Version 12.0).

Table 4.1: Correlation Matrix of the Dependents and Independent Variables

	ROA	TBQ	SWC	PGC	TDC	WSC	SIZE	GROW	FAGE	VIF
ROA	1.0000									
TBQ	0.2820	1.0000								
SWC	0.3361	0.0114	1.0000							3.67
PGC	0.2907	-0.0039	0.7103	1.0000						3.18
TDC	0.2193	0.1649	0.2033	0.1658	1.0000					2.77
WSC	0.1041	-0.2767	0.2851	0.1845	0.7004	1.0000				2.30
FSIZE	0.2031	-0.2082	0.6608	0.6575	0.4472	0.3532	1.0000			2.02
FGRW	0.0255	0.0403	-0.0527	-0.0461	-0.0373	-0.0308	0.0045	1.0000		1.28
FAGE	-0.0597	0.0491	0.1833	0.1915	0.1121	0.1637	-0.1118	-0.0348	1.0000	1.01

Source: *STATA Output (Version 12.0)*

The results in table 4.1 show the degree of association between the dependent variable ROA and all pairs of independent variables individually between themselves, dependent, independent, and control variables and cumulatively with the dependent variable.

A positive association exists between ROA and salary and wages, pension and gratuity, training and development, welfare and safety costs, firm size and firm growth. This is inferred from the correlation coefficient of 0.3361, 0.2907, 0.2193, 0.1041, 0.2031 and 0.0255respectively. Similarly, it shows a negative association between the ROA of the listed manufacturing companies in Nigeria and firm age only. This is revealed by the correlation coefficients of -0.0597. Also, the results in table 4.2 show the degree of association between the dependent variable Tobin's Q and all pairs of independent variables individually between themselves, dependent, independent, and control variables and cumulatively with the dependent variable.

A positive correlation exists between Tobin's Q and salary and wages, training and development costs, firm growth and firm age. This is inferred from the correlation coefficient of 0.0114, 0.1649, 0.0403 and 0.0491respectively. Similarly, it also revealed a negative association between the Tobin's Q and pension and gratuity, welfare and safety costs, and firm size of the listed manufacturing companies in Nigeria. This is revealed by the correlation coefficients of -0.0039, -0.2767, and -0.2082 respectively.

This reveals that higher salary and wages expended, can lead to increase in motivation and productivity among employees, which can positively impact the financial performance through improve efficiency and outputs. This implies that an increase in PGC will inversely affect the ROA insignificantly during the study period. Going with the fact that, pension and gratuities are paid to inactive employees of the company, its costs implication will have no significant impact on current company's performance because of their absence of productivity and inputs in to the company's operations.

Furthermore, an increase in TDC will lead to an increase in ROA significantly during the study period. It also reveals that, training and development programs can improve employees' skills, efficiency and productivity, which will in turn lead to improve outputs and overall performance. While, an increase in WSC will increases ROA significantly during the study under review. It is also reveals that, prioritizing employee well-being, health and safety can help to improve job satisfaction, attract top talents, and reduce the frequency and severity of workplace accidents and employee turnover which can boost the employee productivity, enhanced operational efficiency and reduce costs associated with accidents and emergencies during operations.

Regression Results

The study conducted multicollinearity test and the Cook-Weisberg test of heteroskedasticity in order to improve the validity and reliability of the statistical inferences derivable from the regression models. The first model is presented below;

Table 4.2: Fixed Effect Result (ROA Model)

Variable	Coefficient	T	P>|t|
Constant	0.9939801	2.85	0.005
SWC	0.0682497	2.31	0.021
PGC	-0.0533157	-1.82	0.170
TDC	0.0030741	0.22	0.008
WSC	0.0197417	1.42	0.025
FSIZE	0.1146628	4.05	0.000
FGROW	0.0182874	2.50	0.014
FAGE	-0.0017825	-0.86	0.393
F (7, 353) *(F-Statistic)*			14.03
Prob> F			0.0000
R-squared (R^2)			0.3802
Adj. R^2			0.3641

Source: *Computed using STATA Statistical Software (Version 12.0)*

Specifically, the results from table 4.2 above shows that the independent variables of the study HRA (salary and wages, pensions and gratuity, training and development, and welfare and safety costs, together with the control variables firm size, firm's growth and firm's age) jointly explained around 38.02% of the systematic variations in financial performance as measured by return on assets (ROA) of the listed manufacturing firms in Nigeria during the period, from the coefficient of multiple determinations (R-square of 0.3802). This means that 38.02% of changes in return on assets (ROA) ware caused by changes in independent variables and the control variables in the model. This implies that financial performance when measured in terms of return on asset in Nigeria cannot be 100 per cent explained by human resource accounting and the control variables used in this study. The unexplained change in financial performance can be attributed to the exclusion of other independent variables that can impact on financial performance but were excluded because these are outside the scope of this study.

However, these have been captured in the error term, the F-statistic value of 14.03 and its associated P-value of 0.0000 shows that the fixed effect regression model on the overall is statistically significant at 1% level, this means that the regression model is valid and can be used for statistical inference. Similarly, the results from the table shows that the fixed effect model is fit as indicated by the Hausman'sProb> Chi2 of 70.88 which is statistically significant at 1% significant level (Chi2-value of 0.0000).

Table 4.2 reported that SWC have positive significant impact on financial performance measured by ROA with a coefficient value of 0.0682497 alongside P value of 0.021. This implies that an increase in SWC will also increase ROA significantly during the study period. This reveals that higher salary and wages expended, can lead to increase in motivation and productivity among employees, which can positively impact the financial performance through improve efficiency and outputs. The finding of this study is consistent with the studies conducted by Adetoun *et. al.* (2020), Alekhya and Lakshmi (2020), and Onyekwelu and Akani (2021) who also found salary and wages costs have significant positive impact on firm financial performance. However, contradicts with the findings of Toyin (2020), Ndum and Oranefo (2021), Khan (2021), and Abraham *et. al.*(2022) that documented salary and wages cost have negative and insignificant impact on firm financial performance.

Also, table 4.2 reports that PGC have negative but insignificant impact on financial performance measured by ROA with coefficient value of -0.0533157 alongside P value of 0.170. This implies that an increase in PGC will inversely affect the ROA insignificantly during the study period. This reveals that since pension and gratuities are paid to inactive employees of the company, its costs implication will have no significant impact on current company's performance because of their absence of productivity and inputs in to the company's operations. The finding of this study is in line with the studies conducted by Oforum and Adeola (2018), who found that, PGC had an inverse relationship with financial performance in Nigeria, and this is contrary to the studies of Toyin (2020), Alekhya and Lakshmi (2020), and Odunayo and Festus (2020) who found that, pension and gratuity cost have a significant impact on firm financial performance.

Table 4.2 also reports that TDC have positive significant impact on financial performance measured by ROA with a coefficient value of 0.0030741 alongside P value of 0.008. This implies that an increase in TDC will lead to an increase in ROA significantly during the study period. It also reveals that, training and development programs can improve employees' skills, efficiency and productivity, which will in turn lead to improve outputs and overall performance.

The finding of this study is in line with the study conducted by Okpako *et. al.* (2014), Adetoun *et. al.* (2020), Mukola *et. al.* (2021), Onyekwelu and Ironkwe (2021), Onyekwelu and Akani (2021), and Abraham *et. al.* (2022) who found that, TDC has significant impact on firm financial performance.

Table 4.2 also reports that WSC have positive significant impact on financial performance measured by ROA with a coefficient value of 0.0197417 alongside P value of 0.025. This implies that an increase in WSC will increase ROA significantly during the study under review. It is also reveals that, prioritizing employee well-being, health and safety can help to improve job satisfaction, attract top talents, and reduce the frequency and severity of workplace accidents and employee turnover which can boost the employee productivity, enhanced operational efficiency and reduce costs associated with accidents and emergencies during operations. The finding of this study is in consistent with the studies conducted by Okpako *et. al.* (2014), and Mukola *et. al.*(2021) who study found that, human resource accounting had significant impact with financial performance of firms in Nigeria, which contradicts to the study of Abraham *et. al.* (2022).

Table 4.3: Fixed Effect Result (Tobin's Q Model)

Variable	**Coefficient**	**T**	**P>|t| .**
Constant	24.075130	7.01	0.000
SWC	0.2116823	0.73	0.047
PGC	0.4694172	1.63	0.281
TDC	0.0779135	0.57	0.044
WSC	0.0527519	0.38	0.157
FSIZE	-1.6458940	-5.91	0.000
GROW	0.0432423	0.60	0.009
FAGE	-0.0831233	-4.05	0.094.
F (7, 353) **(F-Statistic)*			10.96
Prob> F			0.0034
R-squared (R^2)		0.4398	
Adj. R^2			0.4227

Source: *Computed using STATA Statistical Software (Version 12.0)*

The results from table 4.3 above show that the independent variables of the study (salary and wages, pensions and gratuity costs, training and development cost, and welfare and safety costs, together with the control variables firm size, grow and age) jointly explained around 43.98% of the systematic variations in financial performance which is measured by Tobin's Q (TBQ) of listed manufacturing firms in Nigeria during the period, from the coefficient of multiple determinations (R-square of 0.4398). This means that 43.98% of changes in TBQ were caused by changes in independent variables and the control variables in the model. This implies that financial performance when measured in terms of TBQ in Nigeria cannot be 100 per cent explained by human resource accounting and the control variables. The unexplained change in financial performance can be attributed to the exclusion of other independent variables that can impact on financial performance but were excluded because these are outside the scope of this study.

However, these have been captured in the error term, the F-statistic value of 10.96 and its associated P-value of 0.0034 shows that the fixed effect regression model on the overall is statistically significant at 1% level, this means that the regression model is valid and can be used for statistical inference. Similarly, the results from the table show that the fixed effect model is fit as indicated by the Hausman'sProb> Chi2 of 37.65 which is statistically significant at 1% significant level (Chi2-value of 0.0000).

Table 4.3 reports that SWC have positive significant impact on financial performance measured by TBQ with a coefficient value of 0.2116823 alongside P value of 0.047. This implies that an increase in SWC will also increase TBQ significantly during the study period. This reveals that the higher the salary and wages spent on employess, can lead to increase in motivation and productivity among employees, which can positively impact the financial performance through improve efficiency and outputs. The finding of this study is in line with the studies conducted by Alekhya and Lakshmi (2020), and Onyekwelu and Akani (2021) who also found salary and wages costs have significant positive impact on firm financial performance. However, contradicts with the findings of Ndum and Oranefo (2021), Khan (2021), and Abraham *et. al.*(2022) who found that salary and wages cost have insignificant impact on firm financial performance.

Also, table 4.3 reports that PGC have positive but not significant impact on financial performance measured by TBQ with coefficient value of 0.4694172 alongside P value of 0.281.

This implies that an increase in PGC, will positively affect TBQ insignificantly during the study period. This reveals that since pension and gratuities are paid to inactive employees of the company, its costs implication will have no significant impact on current company's performance because of their absence of productivity and inputs in to the company's operations. The finding of this study is in line with the study conducted by Oko (2018) and Oforum and Adeola (2018) who found that, PGC had an insignificant impact on financial performance in Nigeria, and this is contrary to the studies of Alekhya and Lakshmi (2020), and Odunayo and Festus (2020) who found that, pension and gratuity cost has significant impact on firm financial performance.

Table 4.3 also reports that TDC have positive significant impact on financial performance measured by TBQ with a coefficient value of 0.0779135 alongside P value of 0.044. This implies that an increase in TDCwill increase TBQ significantly during the study period. It also reveals that, training and development programs can improve employees' skills, efficiency and productivity, which will in turn lead to improve outputs and overall performance. The finding of this study is in line with the study conducted by Mukola *et. al.* (2021), Onyekwelu and Ironkwe (2021), Onyekwelu and Akani (2021), and Abraham *et. al.* (2022) who found that, TDC has significant impact on firm financial performance.

Table 4.3 also reports that WSC have positive but not significant impact on financial performance measured by TBQ with a coefficient value of 0.0527519 alongside P value of 0.157. This implies that an increase in WSC will increase TBQ insignificantly during the study under review. It is also reveals that, prioritizing employee well-being, health and safety cannot help much to improve financial performances measured by Tobin's Q. The finding of this study is in consistent with the study conducted by Abraham *et. al.* (2022) who found that, human resource accounting had insignificant effect on market value of listed deposit money banks in Nigeria, which contradicts to the studies of Okpako *et. al.* (2014), and Mukola *et. al.*(2021) found that, human resource accounting had significant impact on financial performance of firms in Nigeria.

5. Conclusion and Recommendations

The study examines the extent to which HRA impact on the financial performance in the Nigerian listed manufacturing firms. Hence, the study concluded that;

i. Salary and wages can attract and retain top talents, leading to more skilled and motivated workforce. This in turn, can positively impact the financial performance of the business through innovation, quality and customer satisfaction;

ii. Even company with low pension and gratuity offerings would attract and retain skill workers and be relying on other component of human resource to boost their financial performances.

iii. Training and development can increase productivity and enhances operational efficiency, which results in cost savings and improved financial performance of listed manufacturing companies in Nigeria; and

iv. Welfare and safety boosts employee productivity, enhance operational efficiency and reduce costs associated with recruitment and training. Furthermore, it also concludes that strong emphasis on welfare and safety can enhance the company's reputation, leading to increase in customer loyalty, attracting top talent, and positively impacts financial performance of listed manufacturing companies in Nigeria.

Based on the findings and conclusions of the study, the following recommendations were proffer;

i. The management of listed manufacturing companies in Nigeria should consider allocating sufficient budget for salary and wages as it can enhance their financial performance. This may include offering of competitive salaries, performance-based incentives, and bonuses to motivate and retain talented employees who can contribute to the companies' financial growth. Furthermore, manufacturing companies in Nigeria should review their compensation structure to ensure it is competitive and aligns with the industry standards.

ii. The management of listed manufacturing companies in Nigeria should focus on developing effective investment strategies for their pension and gratuity funds. This can involve diversifying investments, across various assets classes, such as equities, bonds, and real estate to maximize returns. Manufacturing companies in Nigeria should assess their existing pension and gratuity plan designs to ensure that these are designed with company's long-term financial goals. This may involve revising contribution rates, retirement age, vesting schedules, or other plan features to manage costs while still providing attractive benefits for employees.

iii. In addition, manufacturing companies in Nigeria should focus on employees' training and development incentives, providing opportunities for skills enhancement and career growth can lead to improve performance, higher productivity, and ultimately better financial outcomes. Furthermore, Manufacturing companies in Nigeria should opportunities for employees to enhance their skills and knowledge through training and development programs, which could involve hiring professional trainers, implementing workshops and seminars, and provision of online learning opportunities, thereby increasing the company's overall financial performance and, ultimately, improve firm performances.

iv. Manufacturing companies in Nigeria should recognize that employee welfare and safety measures not only contribute to ethical responsibility but also have a positive impact on financial performance. Therefore, investing in employees' well-being and safety should be a top priority. Furthermore, Manufacturing companies in Nigeria should review their existing safety protocols and procedures to ensure it meet or exceed industry standards through implementing rigorous safety training programs, providing personal protective equipment and regularly auditing safety procedures can help to mitigate potential risk, in addition to reviewing their existing safety protocols and procedures to ensure it meet or exceed industry standards in Nigeria.

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