

## **Knowledge Based Economy and Sustainable Financial Performance of Quoted Manufacturing Firms in Nigeria**

<sup>1</sup>Uchegbu Basil Chibueze, <sup>2</sup>Enyeribe Vivian Anuli & <sup>3</sup>Kalu Edith Okpo

<sup>1,2&3</sup>Department of Accountancy,  
Alvan Ikoku Federal University of Education Owerri, Imo State

Article DOI: 10.48028/ijprds/ijasepsm.v12.i1.26

---

### **Abstract**

---

The study investigated knowledge based economy and sustainable financial performance of quoted manufacturing firms in Nigeria for the period 2012 -2023. Knowledge based economy was proxied by human capital which is employee cost while sustainable financial performance was proxied by return on assets and return on equity. Six manufacturing firms under consumer goods sector whose financial statements that houses the variables needed for the study were accessible online for the period of investigation were studied. Secondary data was used and accessed from online publication of the six sampled firms. Model relation between employee cost, return on equity and return on asset was developed with the objectives to determine the effect of employee cost on the firms return on asset and return on equity. Data collected were analyzed using descriptive statistic to describe the variable while hausman test is used to determine the best model between fixed effect model and random effect model. The results of the regression show that employee cost of manufacturing firms has insignificant effect on their return on assets and return on equity. The research recommends that for firms to successfully address the challenges of sustainable financial performance in a knowledge base economy there must be a paradigm shift to improvement in human capital for sustainable performance of the consumer goods sector.

**Keywords:** *Human Capital, Knowledge Based Economy and Financial Performance*

---

Corresponding Author: **Uchegbu Basil Chibueze**

### **Background to the Study**

Currently, the real dominant resources and factor of production is no longer capital, land or labor, but human knowledge. This is why Okoye and Emeneka (2021) stated that in today's knowledge-based economy, human beings are the greatest asset. In this era therefore, knowledgeable workers play critical roles in the business activity. Employees with knowledge would become the human capital of a company. Thus, owing to the fact that there is global corporate competition and constant innovation of knowledge-based economy, it becomes a worth discussing issue for corporate entities to enhance and sustain their firm competitiveness. In the knowledge-based economy, long-term corporate performance and its competitive advantage are strongly associated with human capital. This agrees with Obi and Okoro (2024) who affirms that Human capital is the value of represented skills and experience of employee, when properly employed it leads to increase in organizational performance.

Obviously, human capital is a broad concept comprising of many different types of investment in people, unlike other factors of production is not the property of the company. Human capital is embodied in the identity of its owner. The peculiarity of human capital is that it is inseparable from the person himself. Human capital cannot be the subject of sale; it can only be leased by entering into a contract of employment. For the period of employment, the employer acquires the right to take advantage of the opportunity to work as an employee, and not the labor itself, the owner of which is still the employee. In line with this, Bello & Emmanuel (2021) argued that high unemployment rate in Nigeria has resulted in corporate entities not putting the requisite emphasis on human capital development. Organizations thought they can hire and fire quickly, but investing in human capital does not matter to them. Nigerian companies are neglecting the literature that suggests a worker can't perform well or be inspired when he thinks his contribution to the company doesn't suit the input of the organization. Therefore, when developing plans for the strategic development of the company, it is necessary to keep in mind the structure and value of investments in human capital.

Consequently, from the position of the company, investments in human capital represent the costs that it incurs for the purpose of searching, selecting and training personnel, welfare, as well as their subsequent professional retraining. However, in modern business practice, human capital is not considered in the company's decision making. Disputes surrounding the recognition and measurement of human capital as an asset are based on a subjective interpretation of the traditional foundations of companies, not considering the main thing - business needs, which historically predetermined the development of company for competitive advantage. Against this background, there is an underestimation of the human factor in the activities of modern firms, including an underestimation of the need to create investment on workers and analytical support in relation to human potential. From the point of view of developing and analyzing company's financial performance, this explains the interest in the human factor and the results of its intellectual work.

Theoretical deliberations suggest that companies with greater human capital orientation (higher salaries and benefits, more training, a transformational leadership style, better equipment) might perform better than their peers with less human capital orientated strategy

due to higher skills of employees, greater motivation and thus higher overall corporate effectiveness. It is against this back drop that the study on knowledge-based economy is proxied with human capital (employee cost) which is the independent variable while financial performance is proxied with return on asset and return on equity.

### **Statement of Problem**

The rising implication of knowledge-based economy on performance of manufacturing firms in Nigeria cannot be overemphasized. This necessitates organizations in the developing country like Nigeria, to identify the position of human capital as a foundation for corporate performance. Basically, investment in training cost, wages and salary cost, medical expenses, long service award charges, as a component of knowledge base economy (human capital) is not given the required recognition despite its contribution to sustained economic performance. In the light of the above, long-term corporate performance and its competitive advantage are strongly associated with the role of intangible assets (human capital) within the organization. Organizations specially manufacturing are thus required to capitalize on these intangible assets in their production to stimulate and sustain business financial performance.

Therefore, Investment in human resources is said to have a beneficial association with the success of the organization. There are also related studies on the impact on investment in human resource on the company result. Many of these results have positive implications on business quality of investment in human capital (Ojalere & Adesoji, 2013; Alika & Stan, 2014; Angel, 2011). Nonetheless, a study by Okere and Igba, (2023), showed that investment in human capital does not currently make a significant contribution to improving the performance, therefore the effect of human capital investment on financial result needs to be re-examined using Nigeria manufacturing firms as a reference point.

### **Objectives of the Study**

The study examined the effect of knowledge-based economy on sustainable financial Performance of quoted manufacturing companies in Nigeria. Specifically, the study aimed to:

1. Assess the effect of Employee Cost affect Return on Assets of firms in Nigerian.
2. Evaluate the effect of Employee Cost on Return on Equity of firms in Nigerian.

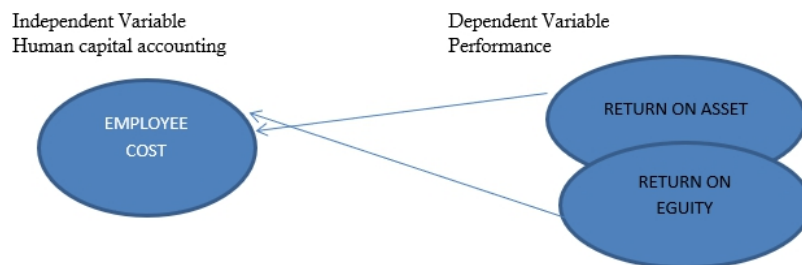
### **Research Questions**

1. What is the effect of Employee Cost on Return on Assets of firms of quoted manufacturing firms in Nigerian?
2. To what extent does Employee Cost affect Return on Equity of quoted manufacturing firms in Nigerian?

### **Research Hypotheses**

- Ho<sub>1</sub>. Employee Cost has no effect on Return on Assets of quoted manufacturing firms in Nigeria.
- Ho<sub>2</sub>. Employee Cost has no effect on Return on Equity of quoted manufacturing firms in Nigeria.

**Review of Related Literatures**  
**Conceptual Review**  
**Operational Conceptual Framework**



**Human Capital and Financial Performance**

There is a broad consensus in the academic literature that human capital is an important determinant of productivity and other economic outcomes, both at the individual and at the aggregate level, and that its role is particularly crucial in today's knowledge-driven economy. Odoegu and Obalaku (2023) sees human capital as the value that the employees of a business provide through the use of skills, know-how and expertise. Dunka (2018), likewise submitted that human capital encompasses the imperceptible possessions of abilities, effort, and time that workforce brings to devote in their obligations. Human capital as a fundamental mechanism of intellectual capital is a driver in the creation of goods and services (Saleim and Ashour 2006).

According to Oviedo-Garcia, Castellanos-Verdugo, and Sancho-Mejías in Łukasz (2018), knowledge is the most important resource, and its management plays a key role in a firm's performance. Similarly, Durrani and Forbes (2003) reinforce these arguments by suggesting that company success is strongly related to the investment flow in human capital and information technology. As the level of human capital is increased, people develop more productive means of performing tasks, thereby increasing the overall efficiency of an entity. Human capital is the most important asset of an organization and a source of innovation and strategic renewal. Human capital is a sum of technical expertise, leadership ability, risk-taking, and problem-solving ability (Xiao, Pan & Liu, 2018). Human capital is an intangible asset or quality not listed on a company's statement of financial position. It consists of all the economic value of employees' experience and skills. This includes assets like education, training, intelligence, skills, health, and other things employers' value such as loyalty and punctuality (Will, 2019). Human capital is the economic value of the abilities and qualities of labor that influence productivity. These qualities include higher education, technical or on-the-job training, health, and values such as punctuality (Kenton, 2019). Human capital is the stock of habits, knowledge, social and personality attributes (including creativity) embodied in the ability to perform labour so as to produce economic value. The concept of human capital recognizes that not all labor is equal. But employers can improve the quality of that capital by investing in employees - the education, experience, and abilities of employees all have economic value for employers and for the economy as a whole (Goldin, 2019).

Human capital is unique and differs from any other capital. It is needed for companies to achieve goals, develop and remain innovative. Companies can invest in human capital for example through education and training enabling improved levels of quality and production. Human capital is important because it is perceived to increase productivity and thus profitability. So, the more a company invests in its employees (i.e., in their education and training), the more productive and profitable it could be (Pettinger, 2019). Since human capital is based on the investment of employee skills and knowledge through education, these investments in human capital can be easily calculated (Tejvan, 2019). Human Resource managers can calculate the total profits before and after any investments are made. Any return on investment (ROI) of human capital can be calculated by dividing the company's total profits by its overall investments in human capital. For example, if Company X invests \$2 million into its human capital and has a total profit of \$15 million, managers can compare the ROI of its human capital year-over-year (YOY) in order to track how profit is improving and whether it has a relationship to the human capital investments (Tejvan, 2019). Human capital (as an intangible resource) is likely to provide a competitive advantage because it is rare and socially complex, and therefore difficult to copy (Hatch & Dyer, 2004). Also, Groot and Van Den Brink (2000) state that human capital can improve firm performance through its contribution to the firm's flexibility - investments in human capital improve employability and therefore labor mobility. According to Lepak and Snell (2002), one advantage of this "resource flexibility" is the increase in the ability of the organization to deploy its labor effectively, and thus, improve firm performance.

Financial performance on the other hand is a wide phrase that refers to a firm's overall health and the returns on pooled resources employed for operational operations. Financial performance is also seen as the effective use of resources to meet specified objectives, resulting in a fair improvement in profitability indices (Williams, 2020). The importance of financial performance of manufacturing firms across the globe to the growth of the nation and the living standard of the populace cannot be overemphasized. This essentially plays an important function in improving the firm's market value. According to Worae and Ngwakwe (2017), in order for the shareholders to make intelligent investment and financial decision which will optimize their well-being, they are usually interested in firm's financial performance. Shareholders gain from good financial performance relating to dividends as well as positively impacts whole country in terms of job creation, taxes, CSR (Williams, 2020). Thus, if enterprises fail to perform as anticipated by assuring effective use of pooled resources both human and material, they will lose their competitiveness in the eyes of shareholders.

Generally, the common firm performance measures often used are revenues, growth in market share, sales growth, capital adequacy, financial ratios such as return on equity, return on assets, profit margins, liquidity ratios and stock prices. Firms' performance is mostly evaluated in terms of profitability since it measures the efficiency of the managers and the firms' returns/profit for their investors. Profitability measures provide an insight to the degree of success or otherwise in achieving its primary objective. In this study, the Return on Assets (ROA) which measures the extent to which profit earned on every \$1 invested on or utilized of total assets is considered the measure of firms' performance as it takes into consideration total



assets or all capitals in the generation of the firms' profits or returns (Etim and Idorenyin, 2021). Hence, the ROA is also deemed a good proxy for firm performance because it assesses the ability of firms' management in utilizing the assets of the entity to generate incomes or returns. In other words, Return on Equity (ROE) according to Henry (2015) is also a ratio used to measure how much equity contributes in creating net profit. ROA is deemed a good proxy for this study because it is considered a representation of a shareholder's wealth or company value. The higher the return on equity means the higher the amount of net profit generated from each amount embedded in equity.

## **Theoretical Framework**

### **Human Capital theory**

This theory argues that a person's formal education determines his or her earning power. According to Human capital theory, the key competences, skills, knowledge and abilities of the personnel contributes to firm's competitive advantage. This theory was propounded by Becker in 1962. According to the human capital idea, a country's ability to prosper economically depends on its people. People in the labor market bring varying degrees of education, knowledge, skill, and ability, as well as their expectations, to the office. An organization relies on employees' talent, knowledge, and ability as a major idea of value creation hence the importance of human capital theory is widely recognized to boost organizational performance (Wuttaphan, 2017). This study therefore hinges on this theory.

### **Empirical Studies**

Several empirical studies related to the variables of the present study both local and international were reviewed. Such studies include;

Rufina and Nuhu (2024) examine the role of human capital development on firm performance in Plateau State, Nigeria and the mediating effect of innovation. A cross-sectional and ex-post factor research design was used for the study. The population consists of 231 owners/managers of MSMEs in Plateau State, Nigeria. A sample size of 146 was used. The partial least square structural equation model (PLS-SEM) was used. The findings of the study revealed that although there is no significant direct relationship between human capital development and firm performance, there is a significant relationship between human capital development and innovation and between innovation and firm performance. Innovation was also found to mediate the effect of human capital development on performance. The study recommended, amongst other things, that organizations should be innovative. Jemmy, Ruth and Jacinta. (2024) examined relationship between human capital investment and organizational performance which shows either a firm performing well or projecting poor performance. The review has shown that human capital accumulation, human capital depletion and human capital drivers have a positive influence on the performance of an organization when proper investment strategies are adopted. The findings also show that organizations that invest in developing their human capital project growth, positive performance and survival of firms in very competitive environments. Odoegu and Obalaku (2023) Invested on human capital efficiency and performance of listed manufacturing firms in Nigeria. Specifically, the study assessed intellectual capital efficiency and its relationship on return on asset and relationship between rational capital efficiency and earning per share. The result of pearson product

moment correlation co-efficient shows that there is a relationship between human capital efficiency and rational capital efficiency on return on capital employed and earning per share. Okere and Igba (2023) investigated the relationship between Human Capital Investment and the hausman test was employed Financial Performance of listed Manufacturing firms in Nigeria from 2009-2018. The data extracted were analyzed using the panel data regression analysis, descriptive method and Hausman test was used to determine the most appropriate model.

The study shows that there is a non-significant but positive relationship that exists between Human Capital Investment and Financial Performance of Manufacturing firms in Nigeria. Investing in Human Capital shows a significant negative relationship with financial performance of manufacturing firms in Nigeria. Okoye and Emeneka (2021) evaluated the relationship between Human Capital Efficiency and Economic Value Added of quoted service firms in Nigeria from 2010-2019. A sample size of fifty-one (51) firms was selected. Descriptive statistics and Panel Least Square (PLS) Regression Analysis were employed to test the hypothesis. The study revealed that human capital efficiency and value-added intellectual coefficients have a significant positive relationship with economic value added of quoted service firms in Nigeria at 5% level of significance. Consequent upon the positive relationship firms should invest more in Human Capital Efficiency to improve performance. Also, firms should endeavor to recruit and employ competent professionals with great skills and competencies to motivate employees to give their best. Using an extensive database comprising 6,331 firms from 78 countries, Marchiori, et al. (2022) examined the relationship between human capital, IT capability, innovativeness and organizational performance. Data was analyzed using IBM SPSS, and the findings indicated that human capital indirectly impacts organizational performance through the mediating effect of entrepreneurial leadership. Kuzey et al. (2021) conducted a study of the influence of investments in human capital, specifically employee training and development, on firm financial performance and the impact of research and development intensity of innovation capital which reveals that innovation capital played a partial mediating role in the relationship between human capital investment and firm performance, as determined by accounting-based return on assets. However, when market-based Tobin's Q was utilized for performance measurement, the role of innovation capital was observed to fully mediate performance.

Chukwu, Ugo, and Osisioma (2019) examined the effect of human capital on the market value of banks in Nigeria, using data on three proxies of human capital related to remuneration and staff strength. Relevant financial statement data for the period 2010 to 2014 were extracted from the annual reports and accounts of fourteen banks listed on the Nigerian Stock Exchange. Results of regression of stock price on the human capital indicators showed that only one variable – the proportion of highly paid employees - had a significant effect on the market value of firms. The findings suggested that investors' confidence increased with the strength of valuable stock of human capital in the payroll of banks. Filippo, Nicola and Michele (2019) examined the impact of intellectual capital disclosure quality in the integrated reports on firm performance. The empirical research was based on a sample of 45 integrated reports in Croatia from 2015-2017 using multiple regression analysis. The results confirmed the existence of a

significant and positive association between the intellectual disclosure quality and the firm performance. Łukasz Bryl (2018) worked on Human Capital Orientation and Financial Performance. A Comparative Analysis of US Corporations, found that strategy based on human capital orientation provides high profitability and leads to above-average financial performance, mainly in the field of equity growth and stock market valuation. Similarly, studies by provide opposite conclusions.

In an attempt to closing the variable gap, this present study focused on employee cost and its effect on both return on assets (ROA), return on equity (ROE), which is an accounting measurement tool as against prior studies that focused on either return on capital employed (ROCE) return on investment (ROI), return on sales (ROS), market value, economic value added and earnings per share (EPS). The methodological gap was closed by employing hausman test statistics which previous most studies failed to employ. This study extended to 2023 as against prior studies which financial periods did not extend to that, thereby, filling the currency gap, hence the justification for this study.

**Methodology**

The study adopted non-experimental research design, it is a research design undertaken after the events have taken place and the data are already in existence. The research used secondary data sourced from online published annual statements of quoted manufacturing companies for the period 2012-2023. Sample size of six manufacturing firms from the consumer goods sector were purposely taken from whose financial statements were accessible online for the period of investigation. The study made use of descriptive statistics to analyze the descriptive properties of the variables. To determine the best model between random and fixed effect model, in other to test the two stated null hypotheses in the research, the probability value of less than 0.05 of the test variables in the regression model denotes significance and the null hypothesis is thus accepted at probability value of more than 0.05. Linear relationship was established between human capital proxied by employee cost (EC) and performance proxied by Return on Asset (ROA) and return on equity (ROE).

The model is specified thus:

- EC = f {ROA}. Model .....1
- EC = f {ROE}. Model .....11
- EC =  $\beta_0 + roa\beta_1 + \epsilon$  Model ..... 1
- EC =  $\beta_0 + roe\beta_1 + \epsilon$  Model .....11 Where:
- EC = Employee Cost
- ROA = Return on Asset
- ROE = Return on equity
- $\beta_0, \beta_1$  and  $\beta_2$  = Parameter of measurement.
- $\epsilon$  = Residual



## Analysis and Result

Results obtained were analyzed below.

### Descriptive Statistics

The descriptive properties of the variables are analyzed in table 1 below:

**Table 1.**

	LOGROE	LOGROA	LOGEMC
Mean	-0.599186	-0.901668	6.928501
Median	-0.649383	-0.912577	6.992408
Maximum	0.272491	0.185712	7.744260
Minimum	-1.966576	-2.130768	5.578751
Std. Dev.	0.541595	0.595966	0.548658
Skewness	-0.229163	0.103852	-0.709535
Kurtosis	2.382847	2.477560	2.762708
Jarque-Bera	1.772822	0.948252	6.210193
Probability	0.412132	0.622429	0.044820
Sum	-43.14139	-64.92006	498.8520
Sum Sq. Dev.	20.82612	25.21746	21.37282
Observations	72	72	72

Source: E-views output 2024

**Table 2: Hausman Test ROA**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.493700	1	0.4823

Cross-section random effects test comparisons:

Variable	Fixed			
Total panel (balanced) observations: 72				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.519483	2.805506	0.541608	0.5899
LOGEMC	-0.349448	0.404817	-0.863224	0.0312

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.641506	Mean dependent var	-0.901668
Adjusted R-squared	0.71491	S.D. dependent var	0.595966
S.E. of regression	0.542463	Akaike info criterion	1.706771
Sum squared resid	19.12729	Schwarz criterion	1.928114
Log likelihood	-54.44377	Hannan-Quinn criter.	1.794889
F-statistic	3.449354	Durbin-Watson stat	1.824929
Prob(F-statistic)	0.005093		

The result of the hausman test with the probability value of 0.4823 which is higher than 0.05 level of significance is an indication that random effect model is suitable for the study. The result of the regression showed that the constant parameter, 1.519483 is positive also Return on Asset is negatively related to employee cost with a coefficient value of -0.349448, this posits that employee cost has decreasing effect on the return on asset of manufacturing firms .. The test for goodness of fit using the adjusted R, indicates that the independent variable accounted for 71% variation in the dependent variable, the remaining 29% is taken care of by the error term. The Durbin-Watson statistics of 1.824929 tends to two than one also shows the fitness of the model. Using the T statistics to evaluate individual test of significance shows the significant probability value of 0.0312. This is considering the fact it is less than 0.05. Results therefore led to rejection of null hypothesis one, with the conclusion that employee cost has significant effect on return on asset of the manufacturing company. This result is in consonance with the work of Odoegu and obalakumo (2023) but against that of Okere and Igba (2023).

**Table 3: Hausman Test ROE**

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	0.013537	1	0.9074	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LOGEMC	0.239391	0.203654	0.094345	0.9074
Cross-section random effects test equation:				
Dependent Variable: LOGROE				
Method: Panel Least Squares				
Date: 06/26/24 Time: 15:07				
Sample: 2012 2023				
Periods included: 12				
Cross-sections included: 6				
Total panel (balanced) observations: 72				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.257809	2.536023	-0.890295	0.3766
LOGEMC	0.239391	0.365933	0.654195	0.5153
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.649537	Mean dependent var	-0.599186	
Adjusted R-squared	0.810264	S.D. dependent var	0.541595	
S.E. of regression	0.490357	Akaike info criterion	1.504798	
Sum squared resid	15.62923	Schwarz criterion	1.726141	
Log likelihood	-47.17273	Hannan-Quinn criter.	1.592915	
F-statistic	3.602205	Durbin-Watson stat	1.965695	
Prob(F-statistic)	0.003817			

The result of the hausman test with the probability value of 0.9074 which is higher than 0.05 level of significance is an indication that random effect model is suitable for the study. The result showed that the constant parameter, -2.257809 is negative and also Return on Equity is positively related to employee cost with a coefficient value of 0.239391. Analysis therefore showed that employee cost has increasing effect on the return on equity of the manufacturing sector. Results further showed that the T statistics is insignificant with a probability value of 0.5153. This is considering the fact it is greater than 0.05. Results therefore led to acceptance of null hypothesis two, with the conclusion that employee cost has insignificant effect on return on equity of the Nigerian banks. This is not in line with Łukasz Bryl (2018) study which found that strategy based on human capital orientation provides high profitability and leads to above-average financial performance, mainly in the field of equity growth.

In conclusion, the found that employee cost (Logemc) has a negative but significant effect on return on assets (ROA) while a positive but insignificant effect on return on equity (ROE). Therefore, the study recommends that there should be a paradigm shift to improve human capital in the workplace so as to effect on financial performance of manufacturing firms in Nigeria.

## References

- Becker, G. S. (1962). Investment in human capital: A theoretical analysis, *Journal of Political Economy*, 70(5), 9–49
- Bontis, N. & Fitzenz, J. (2002). Intellectual capital ROI: A current map to human capital antecedents and consequences, *Journal of Intellectual Capital*, 3(3), 223-247.
- Chukwu, G. J., Ugo, C. C. & Osisioma, B. C. (2019). Market valuation of human capital in Nigerian banks, *International Journal of Academic Research in Accounting, Finance and Management Sciences* 9 (1), 21-29.
- Dooley, E. (2000). *Intellectual capital in the software industry: an empirical test. PhD dissertation, College of business administration, University of Washington, Tacoma, WA.*
- Dunka, C. (2018). *The effect of human capital development on organizational performance. A study of Port Harcourt electricity distribution Company PHED*, A research project of business management of Polytechnic Bori, River State.
- Ezenyilimba, E., Ezejiofor, R. A. & Afodigbueokwu, H. E. (2019). Effect of total quality management on organizational performance of deposit money banks in Nigeria. *International Journal of Business & Law Research* 7(3):15-28.

- Filippo, V., Nicola, R., & Michele, R. (2019). Intellectual capital disclosure and firm performance: an empirical analysis through integrated reporting, in: Tipurić, Darko Hruška, Domagoj (Ed.): *7th International OFEL Conference on Governance, Management and Entrepreneurship: Embracing Diversity in Organisations*. April 5th - 6th, 2019, Dubrovnik, Croatia, Governance Research and Development Centre (CIRU), Zagreb, 245-255.
- Goldin, C. (2019). *Human capital*, Department of Economics Harvard University and National Bureau of Economic Research.
- Jemmy, M, Ruth, K, & Jacinta, K. (2024). Human capital investment and organizational performance: A theoretical review, *The International Journal of Humanities and Social Studies*, 12(3).
- Kenton, W. (2019). *Human capital*, <https://www.investopedia.com/terms/h/humancapital.asp>. Retrieved 22/03/2020.
- Kogut, O. (2019). *Human capital as an object of accounting in the knowledge economy*, SHS Web of Conferences 71, <https://doi.org/10.1051/shsconf/20197105003> Eurasia: Sustainable Development, Security, Cooperation.
- Kuzey, C., Dinc, M. S., Akim, A., & Zaim, H. (2021). Does innovation capital mediate the link between human capital investment and financial performance? *An International Investigation. Journal of East-West Business*, 28(3), 201-228.
- Łukasz, B. (2018). Human capital orientation and financial performance. A comparative analysis of US Corporations, *Journal of Entrepreneurship, Management and Innovation*. 14(3).
- Marchiori, R. R. G., Popadiuk, S, & Mainardes, E. W. (2022). The relationship between human capital, information technology capability, innovativeness and organizational performance: An integrated approach. *Technological Forecasting and Social Change, Elsevier*, 177(C), 1-14. DOI: 10.1016/j.techfore.2022.121526.
- Obi B. C. & Okoro T. C. (2021). Human capital accounting for sustainable performance of the financial sector businesses in Nigeria, *Journal of Economics, Finance and Management Studies*. 7 (2).
- Odoegu, L. I. & Obalakumo, A. P. (2023). Human capital efficiency and performance of listed manufacturing firms in Nigeria. *International Journal of Trend in Science Research and Development*. 7(4) 2456-66470.
- Okere. W. & Igba. J. (2023). Human capital investment and financial performance of listed manufacturing firms in Nigeria, *Research Journal of Management Practice* 3(8).

- Okoye, N. J. & Emeneka, O. (2021). Human capital efficiency and economic value added of Quoted firms in Nigeria. *International Journal of Advances in Engineering and Management*. 3 (10), 331-345
- Rufina, B. T. & Nuhu, D. G. (2024). Role of human capital development in firm performance: The mediating effect of innovation. A case of manufacturing firms in Plateau State, Nigeria. *Journal of Management and Economic Studies* 2024, 6(1), 67-81
- Seleim, A., Ashour, A., & Bontis, N. (2007). Human capital and organizational performance: A study of Egyptian software companies, *Journal of Management Decision*. 45(4), 789-801.
- Will, K. (2019). *What is human capital?* <https://www.investopedia.com/terms/h/humancapital.asp>. Retrieved 22/03/2020