

**PRE-POST HUMAN CAPITAL ACCOUNTING AND FINANCIAL PERFORMANCE OF LISTED OIL AND GAS COMPANIES IN NIGERIA: AN EMPIRICAL EVIDENCE FROM PRE And POST COVID19 ERA**

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**ABSTRACT**

*More often than not Oil and Gas companies experienced huge financial losses due to storage of workers, mismanagement of funds, corruptions in the recruitment process, decrease in oil price, foreign exchange devaluation and coupled with COVID-19 pandemic. The lockdown of major cities as a result of COVID-19 outbreak in the world and Nigeria arising from the COVID-19 Pandemic have impacted oil and gas sectors in Nigeria negatively. Due to this current development in the oil and gas companies in Nigeria, this study investigates the relationship between pre-post human capital accounting and financial performance of listed oil and gas companies in Nigeria. The specific objectives sought to: investigate the relationship between pre-post Covid19 employees cost and earning per shares, investigate the relationship between pre-post Covid19 training/development cost and earning per shares, finally, determine the relationship between pre-post Covid19 value added intellectual coefficient and earning per shares of listed oil and gas companies in Nigeria. The study adopted ex-post facto research design. The population of the study consisted of ten (10) Oil and Gas Companies listed in the Nigerian Exchange Group and Five (5) were chosen simply because as at the time of this research work, some of the companies do not have 2021 data available. Data of two year period for Pre-Covid19 era from 2018-2019 and two year period for Post-Covid19 era from 2020-2021 was chosen for the study. The study used secondary data employing Descriptive Statistics and Multiple Linear Regression analysis of panel data with aid of E-View 12. This study result showed that earning per shares under Pre-Covid19 era and Post-Covid19 era had insignificant relationship with employee cost, training/development cost and valued added intellectual coefficient of listed oil and gas companies in Nigeria. The study concluded that there is insignificant relationship between human capital accounting and financial performance of listed oil and gas companies in Nigeria under Pre-Covid19 era and Post-Covid19 era. It is suggested amongst others that companies should evaluate employees cost and training/development cost with return on assets, return on equity, net profit margin etc because this study result showed that earning per share had insignificant relationship with human capital accounting.*

**Keyword: Employees cost, training and development cost, earnings per share and Pre-Post Covid19**

**INTRODUCTION**

The evolution of knowledge from industrial economy had put greater pressure on companies to use human capital efficiency as a result of growing human resource management policy (Nuryaman, 2015). Human capital is the stock of habits, knowledge, social and personality attributes embodied to produce economic value. Human capital is unique and differs from any other capital. It is needed by companies to achieve goals and increase turnover (Franssila et al., 2012). Human capital accounting has been adopted as one of the most important managerial tools that for improving firms financial performance (Ofoegbu et al, 2013; McIver et al., 2013; Adewumi et al, 2020; Clarke & Gholamshahi, 2018; Mahdi et al, 2019). Human capital accounting is the value represented by the skills and experience of employees and when properly deployed, it result

to high level of financial performance which in turn increases a company's market position, profits, and cash flows. According to Mishra and Mishra (2017), human capital accounting (HCA) is use to determine the productivity, profitability and sustainability of a firm. It is also serve as a basis for decision making by firm's managers as it provides both qualitative and quantitative data on human capital (Aggarwal & Verma, 2020). Human capital accounting is defined as the process of identifying and measuring data related to human capital and communicating the information to interested parties (American Accounting Association 1973). Akintoye (2012) defined human capital accounting as an intangible asset or quality not listed on a company's statement of financial position. It can be classified as the economic value of a worker's experience and skills. This includes assets like education, training, intelligence, skills, health, and other things employers value such as loyalty and punctuality.

Financial performance of companies is seen as a general measure of a firm's overall financial health over a given period of time. Financial performance refers to financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period (Kajola et al., 2019). Iswatia and Anshoria (2007) opined that financial performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage. Financial performance in term of profitability is the important purpose of every business. Without profitability it is not easy to run your business as per continued business and the extension of business is not easy to create profit for short term business; it is necessary to create funds to fulfil its daily needs in operations and other wants, business generates more and more profits when this short term need of funds is generated by business process not by the external debt (Al-Musali et al, 2016).

### **Statement of the Problem**

Oil and gas have experienced huge financial losses due to storage of workers, mismanagement of funds, corruptions in the recruitment process, decrease in oil price, foreign exchange devaluation and coupled with COVID-19 pandemic. The lockdown of major cities as a result of COVID-19 outbreak in the world and Nigeria arising from the COVID-19 Pandemic have impacted oil and gas sectors in Nigeria negatively. In the mix of this situation, oil and gas companies in Nigeria did not considered lack of human capital as one of the problem. Labour is one of the major contributory factors to all factors of production but during the outbreak employees in most cases could be hired today and in the next day the employee is sacked without committing any crime, employees have just been seen as ordinary job boys. Instead of the skilled staff to head the affairs, they will bring in an under skilled to head, instead of an organization to dive in to human development activities, they rather hire and fire not minding the cost effect of hiring and firing of employees. This has posed a serious intellectual brainstorming by so many scholars, some see human capital as an asset to an organization while others see human as a capital contributed to an organization. Based on the above highlighted problems, a number of empirical studies have consequently looked at the relationship between human capital accounting and financial performance. Studies in this area include the works of Atube and Olufawoye (2014), Adebawojo et al (2015), Asika et al (2017), Nwauzor and Longjohn (2020), Nwaiwu and Amah (2020) and Onyekwelu and Ironkwe, (2021). These empirical studies argued that there is a negative and positive relationship between human capital accounting and financial performance. Asamu et al (2020) examined disclosure of human resource assets of manufacturing companies quoted in the Nigerian Stock Exchange (NSE). The study concluded that adequate reward has a significant effect on operational performance and financial leverage. Ofurum and Adeola (2018) founded that there no correlation between HRA and profitability of the listed companies. Ijeoma and Aronu (2013) examined effect of HCA and financial statements among Nigerian banks and concluded that non-application of HCA measures had a negative effect on the future investment of the bank. Due to mixes result, this study sought to

investigate the relationship between human capital accounting and financial performance of listed oil and gas companies in Nigeria.

### Conceptual Framework

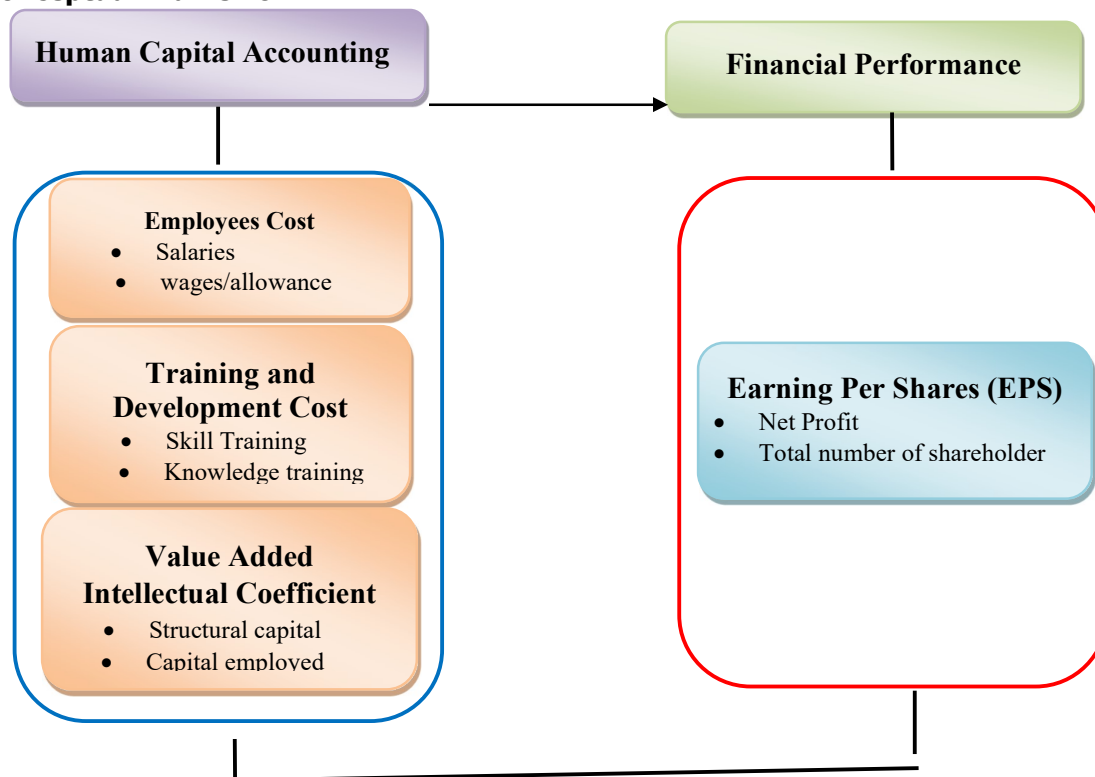


Fig 1.1 Conceptual Framework Showing the variables employed in measuring human capital accounting and financial performance of listed oil and gas companies in Nigeria.

**Sources:** Balogun, et al (2020); Onyekwelu and Ironkwe (2021) and Researchers (2022)

### Aim and Objectives of the Study

The main aim of this study was to investigate the relationship between pre-post human capital accounting and financial performance of listed oil and gas companies in Nigeria. The specific objectives sought to:

- i. Investigate the relationship between pre-post Covid19 employees cost and earning per shares of listed oil and gas companies in Nigeria.
- ii. Investigate the relationship between pre-post Covid19 training/development cost and earning per shares of listed oil and gas companies in Nigeria.
- iii. Determine the relationship between pre-post Covid19 value added intellectual coefficient and earning per shares of listed oil and gas companies in Nigeria.

### Hypotheses

The following null hypotheses ( $H_0$ ) were stated for the study:

- Ho<sub>1</sub>** There is no significant relationship between pre-post Covid19 employees cost and earning per shares of listed oil and gas companies in Nigeria.
- Ho<sub>2</sub>** There is no significant relationship between pre-post Covid19 training/development cost and earning per shares of listed oil and gas companies in Nigeria.
- Ho<sub>3</sub>** There is no significant relationship between pre-post Covid19 value added intellectual coefficient and earning per shares of listed oil and gas companies in Nigeria.

## REVIEW OF RELATED LITERATURE

### Conceptual Review

**Human Capital Accounting:** Human capital accounting is the process of identifying and reporting investments made in the human resources of an organization that are not presented in conventional accounting practice (Kirfi & Abdullahi, 2012). It involves measuring the costs incurred by the business to recruit, select, hire, train and develop human capital (Edirin, 2013). Human capital accounting (HCA) is described as the process of identifying, measuring and communicating information about human resources in order to facilitate effective management within an organization. It is an extension of the accounting principles of matching costs, revenues and organizing data to communicate relevant information in financial terms (Jeroh & Okafor, 2010). Xu et al (2020) defined human capital accounting as the value of all the employees in the organization and the rewards that is attached to its utilization. Dean et al (2012) noted that human capital accounting comprises of the talents, skills and knowledge of a company's workforce. Prior studies refers human capital accounting as the measurement of employees cost in a monetary term (Okeke, 2016; Khan & Ali, 2018; Xu et al, 2020; Akinlade & Adegbe, 2020; Nwauzor & Longjohn, 2020; Olaoye & Afolalu, 2020; Ovechkin et al, 2021).

Raghav (2011) stated that human capital accounting is a method of measuring the effectiveness of personnel management activities and the use of people in an organization. The American Accounting Association's definition of human capital accounting as the measuring of data of human resources and communicating the information to the interested parties. Going by the various definitions above, human capital accounting in simple term is accounting for the value of people in organization to enhance information for decision making by the users of financial information. Yusuf (2013) pointed that human capital accounting is a broad concept encompassing many components but essentially describing the quality of the labour force. As plausible as these definitions are, we must note that no widely acceptable definition of human capital has emerged. A general consensus however is that human capital accounting is a component of Intellectual Capital. Adebawojo et al (2015) posited that the development of human capital or resources accounting originated from the growing needs of the importance of human assets in the management of organisation. It functions as a department that monitors the people that are involved in the organisational resources, as well as monitoring the development, progress in assets and revenues of the company. Hence, assessing financial performance may not be conclusive without the consideration of the value of human capital.

**Employees Cost:** Employees cost measures the total remuneration in cash or in kind that accrue to employees in return for their work during the accounting period, regardless of when they are paid. Ndum and Oranefo (2021) stated that employee cost consisted of salaries, wages, pension, and other employee benefits. Expenditures on employees are aimed at improving the quality of a firm's employees through increased motivation and creativity (Akinlade & Adegbe, 2020). Employee cost is justified into three grounds. First, from a strategic view employee costs are not expenses but investments since human capital play a critical role in value creation (Al-Musali et al, 2016). Second, employees cost indicates the quality of a firm's human resources. Third, firms rarely disclose employees' level of education and annual investment on human capital development in their annual financial reports. Wages and salaries, which generally accounts for over 80 percent of compensation, consists of cash remuneration of labor (including sick or vacation pay, severance pay, commissions, tips, and bonuses), and in-kind remuneration of labor such as transit subsidies and meals. Organizations compensate its employee to promote its image in the environment just to remain friendly as a corporate entity (Smriti, & Das, 2018).

**Training and Development Cost:** Smriti and Das (2018) defined training as a set of activities which react to present needs and is focused on the instructor and contrast with learning as a process that focuses on developing individual and organizational potential and building capabilities for the future. Training is essentially a management tool derived to foster, develop and increase skills and knowledge for the purpose of financial performance in terms of efficiency, effectiveness and overall productivity. Adebawojo et al (2015) noted that training has several benefits for the employee and host environment for career development, promotion within the organization and diversity development (Olaoye & Afolalu, 2020). An employee's skills can be improved through good training programs and which can impact employee financial performance. Training programs have an important role in improving employee performance. This has also motivated many organizations in investing in training and developmental programs for their employees and the environment they operate (Ojogbo et al, 2018). Management's commitment to training and development is not only an attempt to improve the capabilities and performance of employees, but also a way of motivating the employees and making them feel valued as part of the organization. A well-trained and developed employee workforce will have increased morale leading to increased commitment to the organization which in the long run increases profit (Belal, et al., 2019). According to Smriti and Das (2018) employees should be treated as valued assets, a source of competitive advantage through their commitment, adaptability and quality of skills and performance.

**Value Added Intellectual Coefficient:** Valued Added Intellectual Coefficient (VAIC) is one of the wide spread used models in the intellectual capital research field due to the fairness and consistency of the data on which it is founded and its simplicity of application (Smriti & Das, 2018). VAIC is not envisioned to afford a straight extent of intellectual capital, in its place it has remained advanced to measure the efficacy of both concrete (capital employed) and imperceptible (human and structural capital) assets in the formation of companies' value added (Xu & Liu, 2020). Additionally, it has been extensively used to explore the connection between intellectual capital, firms' performance and market value (Smriti and Das, 2018). Intellectual capital are resources such as talents, competences, expertise and proficiencies as companies' tactical assets capable to confirm justifiable modest benefit and greater monetary benefits over suitable management and improvement procedures (Smriti & Das, 2018). According to Xu and Liu (2020), modified VAIC model including relational capital (RC) as the new intellectual capital element was developed in order to determine marketing, selling and advertising costs were introduced as the measure for RC. Relational capital efficiency (RCE) was measured as the ratio of marketing, selling and advertising expenses to value added. Aya and Gurdal (2021) stressed that the intellectual capital comprises imperceptible assets that are not clearly itemized on the statement of financial position nonetheless which certainly affect the performance of the firm, accordingly disclosing the connection between workers, thoughts and information and assessing values that cannot be indexed . Furthermore, Xu & Liu, 2020 also confirmed that the modified VAIC model with the introduction of RC is more accurate than the original VAIC model to measure IC. Intellectual capital is essentially measured as a knowledge-based asset.

### **Financial Performance**

Financial performance is defined as the ability of a firm to minimize its cost of operations, efficiently use its assets and maximizes the value of shareholders (Ibrahim & Abdullahi, 2019). It shows the effectiveness and efficiency of management in the use of corporate resources. It is further defined as the attempt by a firm to meet established goals or effective productivity. Also, it is a measure of the firm's earnings and appreciation in its value which is disclosed in the market value of shares (Ibrahim & Abdullahi, 2019). Financial Performance is a subjective measure of how well a company can use assets from its primary business location and generate revenues. This term is also used as a general measure for a company's overall economic health over a given period and can be

used to compare similar companies in the same industry or to compare industries or sectors in aggregation of financial performance (Ponnu, 2008). Financial performance is a periodic achievements in monetary terms expressed in form of returns or losses. The productivity, profitability and market premium are three perspectives to evaluate financial performance (Almajali et al, 2012). Yahaya and Lamidi (2015) believed that financial performance is an instrumental element, especially to profit-oriented firms as it determines its competitiveness and financial sustainability which in return influence its capability to meet its financial obligations. They further described financial performance as a measure of effectiveness and efficiency in the utilization of obtainable resources in the core operations of a firm to generate revenue. Okpolosa (2018) posited that performance measurement is very effective in company management process and enhancement of management proficiency. It is very important to users of financial information as it reflects the going concern of the firm. Almajali et al (2012) opined that the higher financial performance of a company means more effective and efficient use of its available resources and afterward contributes at the macro in the country's economy. A total assessment of financial performance of a firm takes into consideration various methods of measurement.

### **Earnings Per Shares**

Earning per share (EPS) is the portion of a company's profit allocated to each share of common stock. Earnings per share serve as an indicator of a company's profitability. It is common for a company to report EPS that are adjusted for extraordinary items, potential share dilution. Banda (2019) stated that earnings per share are the fragment of a company's profit, given to each outstanding share of common stock. Information about earnings per share is provided as a measure of the interest attributable to each ordinary share a parent company in the performance of the company over the reporting period. Earnings per Share are an important financial performance measure that indicates a company's profitability. This is calculated by dividing the company's net income with the total number of outstanding shares. It is a tool that market participants often use to measure the profitability of a company before buying their shares. It is described as part of a company's profit allocated to each shareholding (Basyith, 2016). Banda (2019) noted that an entity discloses EPS amounts for profit or loss attributable to the ordinary shareholders of the parent company and, if presented, profit or loss from continuing operations attributable to those equity holders in accordance with the standard and if it chooses to disclose earning per share based on a separate financial statements such information will be shown in the statement of comprehensive income and not in the consolidated financial statements.

### **Theoretical Framework**

The study was anchored on human capital theory due it accuracy concept to human capital.

**Human Capital Theory:** Human Capital theory was proposed by Schultz (1961) and extensively developed by Becker (1964). The theory has its root from labour economics which is a branch of economics that focused on general work force in quantitative term. The theory contended that education or training raises the productivity of workers by imparting useful knowledge and skills, thus raising workers' future income through increase in their lifetime earnings. The theory postulates that expenditure on education or training and development is costly, and should be considered as investment since it is undertaken with a view to increasing personal incomes. According to Bassegy and Tapang (2012), human capital theory distinguished between general skills and firms' specific skills of human resources. General skills are skills possessed by individuals which provide value to a firm and are transferable across a variety of firms. For instance, all competitor firms have the potential to accrue equal value by acquiring employees with knowledge of general management, the ability to apply financial ratios, or general cognitive ability. On the order hand, specific skills provide value only to a particular firm, and such skills are of no value to competing firms. An instance of this is the knowledge of how to use a particular technology or knowledge of

a firm's policies and procedures provided to that firm, but usually would not be valuable to other firms. The relevance of the theory to this study is that it considered the cost of employees, training and development cost and value added intellectual coefficients as assets towards improving productivity of individual workers and also creates a sort of competitive advantage which ultimately could result in improved financial performance. Thus, if these are invested like other physical assets, such costs should be reflected on income statement, statement of financial position and cash flow statement.

### **Empirical Review**

There are prior studies who have determined the relationship between human capital accounting and financial performance in Nigeria and abroad employing different sector like deposit money banks, insurance companies, manufacturing firms, oil and gas companies etc. Most of the results are mixed due to different methodology such as scope, research design, population of the study, time frame, sample and sampling techniques, sources of data collection and method of data analysis.

Adesanmi (2021) investigated effect of intellectual capital on performance measures of listed non-financial companies in Nigeria between year 2007 and 2017. The study adopted ex-post facto research design and data were obtained from secondary sources through the audited annual reports of sampled firms and the fact books of Nigerian Stock Exchange. Sample sizes of fifty (50) out of a population of eighty (80) listed nonfinancial firms on Nigerian Stock Exchange as at December 2018 were purposively selected for the study. Data collected were analyzed using descriptive statistics and panel regression analysis. The result revealed that human capital efficiency, capital employed efficiency, firm size had significant positive effect on return on equity while human capital efficiency, structural capital efficiency, capital employed efficiency and leverage had a significant effect on return on assets. The study concluded that intellectual capital has positive significant effect on financial performance measures. The study recommended a policy framework for the management to increase intellectual capital utilization through investment in human and customer capital to enhance their financial performance and maintain competitive edge. The research gap between Adesanmi (2021) and this current study is that, their study timeframe was between (2007-2017) using listed non-financial companies in Nigeria why the current study timeframe is between (2018-2021) adopting pre and post Covid19 era and it was conducted in listed oil and gas companies in Nigeria.

Duho and Agomor (2021) assessed the nexus between intellectual capital and the performance of listed non-financial firms in West Africa while controlling for some firm-specific and country-specific factors. The study used the Value Added Intellectual Coefficient (VAIC) to measure intellectual capital performance while return on asset measures profitability. Panel-corrected standard error regression was used for span period of 2007 to 2018. The findings indicate that structural capital efficiency is a major driver of profitability while human capital efficiency and capital employed efficiency is found not to have a significant impact on profitability among nonfinancial firms. It was submitted that intellectual capital has an inverted U-shaped nexus with performance. The research gap between Duho and Agomor (2021) and this current study is that, their study timeframe was between (2007-2018) using listed non-financial firms in West Africa why the current study timeframe is between (2018-2021) adopting pre and post Covid19 era and it was conducted in listed oil and gas companies in Nigeria.

Festus and Albert (2020) investigated impact of human capital on the performance of deposit money banks in Nigeria from 2007 to 2019. The study used expenditures on human resources to proxy human capital while profit after tax is used to proxy performance. The sample covered ten banks which include the five first-tier lenders that hold almost 80% of the entire banking sector

asset in Nigeria. Panel data is applied as estimating technique. The result shows that human capital does not have significant positive impact on performance of the banks. However, total asset of the banks remains the most important determinants of performance of the banks. This is an indication that expenditure on human capital reduces the profit of the banks as against the conclusions of some researchers that used primary data. More so, most of the operations of the banks are now capital intensive. The approach used in the study has unraveled the reason behind the incessant staff turnover experienced in the Nigerian banking sector. The research gap between Festus and Albert (2020) and this current study is that, their study timeframe was between (2007-2019) using listed commercial banks in Nigeria why the current study timeframe is between (2018-2021) adopting pre and post covid19 era and it was conducted in listed oil and gas companies in Nigeria.

Nestor (2020) evaluated effect of human capital efficiency and financial performance of quoted commercial banks in Nigeria. Expost-facto research design was employed and secondary data were obtained from Nigerian Stock Exchange fact books, annual reports and accounts of the sampled banks. A cross-sectional analysis of all the banks quoted on the Nigerian Stock Exchange as at 31st December 2018 for a period of 9 years (2010 – 2018) was conducted. The data obtained were subjected to statistical analysis adopting Pearson coefficient of correlation, heteroskedasticity, normality test and ordinary least square regression. The results revealed that, there is a positive and statistically significant relationship between human capital efficiency and financial performance of commercial banks in Nigeria. The study suggested that employment of efficient work-force rather than cheap labour in the Nigerian banking system, recognition and inclusion of human capital accounting in the reporting framework of banks and constant effort made to improve human capital efficiency for improved financial performance. The research gap between Nestor (2020) and this current study is that, their study timeframe was between (2010-2020) using listed commercial banks in Nigeria why the current study timeframe is between (2018-2021) adopting pre and post covid19 era and it was conducted in listed oil and gas companies in Nigeria.

Nwauzor and Longjohn (2020) investigated human capital accounting and financial performance of oil and gas companies in Nigeria. The study adopted expo-facto research design. The population of the study was nine (9) listed downstream oil and gas firms in Nigeria. The study employed regression method of data analysis. The result showed that, the relationship between compensation cost and market share is positive and statistically significant. Findings also shows that the moderator variable firm size do not moderate the relationship between human capital accounting and financial performance. The study recommended that, the 3Rs for the human resources of oil and gas companies in Nigeria should be efficiently employed. The research gap between Nwauzor and Longjohn (2020) and this current study is that, their study was conducted in 2020 why the current study is conducted in 2022 adopting pre and post covid19 era.

Olaoye and Afolalu (2020) examined effect of human capital accounting and earnings per share (EPS) of deposit money Banks in Nigeria. Expost-facto research design was employed and secondary data were collated from annual reports of the sixteen deposit money listed in the Nigerian Stock Exchange between 2006 and 2017. Static panel data of fixed and random effect used to explore the relationship between human capital accounting and EPS of deposit money banks in Nigeria. The results showed that, pension and training and development have significant positive relationship with EPS while other salaries and wages have insignificant positive relationship except director's remuneration and recommended that training and development, and pension are critical factors that are germane to human capital accounting to boost the earning per share so as to enhance the performance of the Telecommunication service providers. The research gap between Olaoye and Afolalu (2020) and this current study is that, their study timeframe was between (2006-2017) using listed commercial banks in Nigeria why the current study timeframe

is between (2018-2021) adopting pre and post Covid19 era and it was conducted in listed oil and gas companies in Nigeria.

Okeke (2016) examined impact of human capital cost (HCA) and financial performance and market valuation using four publicly quoted companies (banks) in Nigeria. Data for the study were sourced through questionnaire which was administered to randomly selected respondents of accountants of management cadre and also, secondary data were sourced from the annual financial statements of five selected firms, relevant textbooks and the internet. Data were analyzed using percentages and Chi-Square statistical test. The study revealed among others that there is a significant increase in firms' net worth when investments on human capital are treated as assets and capitalized as against the current practice where such expenditures are treated as mere revenue expenses thereby leading to gross undervaluation of firms' statement of financial position and the income statement. The research gap between Okeke (2016) and this current study is that, their study method of data analysis employed Chi-Square statistical test using listed commercial banks in Nigeria why the current study method of data analysis employed descriptive statistic, ADF & PP unit root test, estimated equation OLS multiple regression base pre and post Covid19 era and it was conducted in listed oil and gas companies in Nigeria.

### **Gap in Literature**

Prior research has studied the relationship between human capital accounting and financial performance. Based on the empirical studies reviewed in term of concepts, years, scope, methodology adopted, variables employed, findings, conclusions and recommendations. This study identified a Gap. To the best of our knowledge, only Nwauzor and Longjohn (2020) had conducted a study on the relationship between human capital accounting and financial performance of oil and gas companies in Nigeria, Furthermore, to the best of our knowledge, none of the prior studies has used a timeframe between 2018 and 2021 and adopting pre and post Covid19 era amongst listed oil and gas companies in Nigeria. Therefore, this study is designed to bridge this knowledge gap that existed in the literature of human capital accounting and financial performance of listed oil and gas companies in Nigeria.

### **METHODOLOGY**

This study adopted ex-post facto research design. The population of the study consisted of ten (10) Oil and Gas Companies listed on the floor of the Nigerian Exchange Group as at 31<sup>st</sup> December 2021. Eight (8) listed Oil and Gas Companies were chosen simply because as at the time of this research work, some of the companies do not have 2021 data available. Hence, purposively, data of two year period for Pre-Covid19 era from 2018-2019 and two year period for Post-Covid19 era from 2020-2021 was chosen for the study. The study used secondary data and it was collected from published annual reports of the selected sampled size oil and gas companies in the Nigerian Exchange Group Fact Book. Data collected were analyzed using Descriptive Statistics and Multiple Linear Regression analysis of panel data with aid of E-View 12.

**Variables of the Study:** The study employed independent and dependent. The independent variables consisted of employees costs, training and development cost and value added intellectual coefficient while dependent variable consists of earnings per shares. The variables were measured as follows:

#### **Human Capital Accounting (Independent Variable):**

- I. Employees cost (EC): Employee cost consists of salaries, wages, pension, and other employee benefits. But for purpose of this study, Employees cost are extracted direct from the income statement

- II. Training and Development Cost (TDC): Training is essentially a management tool derived to foster, develop and increase skills and knowledge base of employees and also employers with a view to ultimately increasing both the employees and organizations performance in terms of efficiency, effectiveness and overall productivity. But for purpose of this study, Training cost are extracted direct from note to the account.
- III. Value added intellectual coefficient is the measurement used to measure intellectual capital and comprise the following;
- Human capital efficiency (HCE) =  $VA/HC$   
Value added (VA) = This is the summation of net sales revenue – cost of goods sold – depreciation.  
HC = Total expenditures on employees or total employees' salaries and wages
  - Structural capital efficiency (SCE) =  $SC/VA$   
Structural capital = Value added – Human capital
  - Capital employed efficiency (CEE) =  $VA/CE$   
Capital employed = This is the total capital employed in the non-current and current assets of the firm. It is derived as the book value of the firms net assets.
  - Relational capital efficiency (RCE) =  $(MSD)/VA$   
MSD = Marketing, Selling and Distribution Expenses  
Therefore, Thus, Value added intellectual coefficient = HCE + SCE + CEE + RCE

**Financial Performance (Dependent Variable):**

- Earnings per Share (EPS) is the proportion of profit allocated to its shareholders of a firms  
Mathematically: Earning per Share (EPS) =  $\frac{\text{Profit before tax}}{\text{Number of ordinary shares}}$   
But for purpose of this study, EPS are extracted direct from the income statement

**Model Specification:** Model specification is the determination of the endogenous and exogenous variables to be included in the model as well as the a priori expectation about the sign and the size of the parameters of the function (Gujarati & Porter, 2009). The following model was developed based on the study variables:

**PRE Earnings Per Share (EPS) Model**

$$\text{PRE-EPS} = f(\text{PRE-EC}, \text{PRE-TDC}, \text{PRE-VAIC}) \dots\dots\dots 1$$

This can be written in Ordinary Least Square (OLS) form as:

$$\text{PRE-EPS}_t = a_0 + a_1\text{PRE-CE}_t + a_2\text{PRE-TDC}_t + a_3\text{PRE-VAIC}_t + U_t \dots\dots\dots 2$$

$$a_1 > 0; a_2 > 0; a_3 > 0$$

Where: PRE-EPS = pre earnings per share, as proxy for financial performance  
PRE-EC = pre employees cost as proxy for human capital accounting  
PRE-TC = pre training cost as proxy for human capital accounting  
PRE-VAIC = pre value added intellectual coefficient as proxy for human capital accounting  
t = time period under study  
a<sub>0</sub> = constant  
a<sub>1</sub> parameter or coefficient of explanatory variable  
u = error term

**POST Earnings Per Share (EPS) Model**

$$\text{POST-EPS} = f(\text{POST-EC}, \text{POST-TDC}, \text{POST-VAIC}) \dots\dots\dots 3$$

This can be written in Ordinary Least Square (OLS) form as:

$$\text{POST-EPS}_t = a_0 + a_1\text{POST-CE}_t + a_2\text{POST-TDC}_t + a_3\text{POST-VAIC}_t + U_t \dots\dots\dots 4$$

$$a_1 > 0; a_2 > 0; a_3 > 0$$

Where: POST-EPS = pre earnings per share, as proxy for financial performance

POST-EC = post employees cost as proxy for human capital accounting

POST-TC = post training cost as proxy for human capital accounting

POST-VAIC = post value added intellectual coefficient as proxy for human capital accounting

t = time period under study

$a_0$  = constant

$a_1$ -  $a_2$  parameter or coefficient of explanatory variable

**Decision Rule:** Accept  $H_0$  to  $H_3$  for If P (Greater than) > 0.05. Otherwise reject.

For the coefficient values, the following interpretation scheme applied below, (a) No Relationship = 0, (b) Low/Weak Relationship = 0.1-0.2, (c) Moderate or Relatively Strong Relationship = 0.3-0.5, (d) High/Strong Relationship = 0.6-0.7, (e) Very High/Very Strong Relationship = 0.8-0.9, (f) Perfect Relationship = 1

## RESULT AND DISCUSSION

**Table 1 Descriptive Statistics of Pre-Covid19 Era**

	PREEC	PRETDC	PREVAIC	PREEPS
Mean	5.292856	5.779333	25.28154	81.19000
Median	5.691816	5.853128	21.10775	15.08000
Maximum	5.911813	7.893295	72.02844	284.0000
Minimum	4.025470	3.638689	-21.62720	0.040000
Std. Dev.	0.730052	1.643461	27.24526	111.0618
Skewness	-0.936725	-0.028010	0.132294	1.002655
Kurtosis	2.312869	1.484882	2.456503	2.359910
Jarque-Bera	1.659152	0.957800	0.152248	1.846243
Probability	0.436234	0.619464	0.926701	0.397277
Sum	52.92856	57.79333	252.8154	811.9000
Sum Sq. Dev.	4.796782	24.30866	6680.738	111012.5
Observations	10	10	10	10

**Table 2 Descriptive Statistics of Post-Covid19 Era**

	POSTEC	POSTTDC	POSTVAIC	POSTEPS
Mean	5.453861	6.073570	-41.45881	86.12900
Median	5.645628	6.832509	7.403553	26.92500
Maximum	5.984801	8.223416	56.35761	444.0000
Minimum	4.181243	3.535927	-519.9880	0.780000
Std. Dev.	0.678000	2.133337	169.8371	141.5784
Skewness	-1.267793	-0.257466	-2.566750	1.843736
Kurtosis	2.953766	1.229354	7.806720	5.182182
Jarque-Bera	2.679722	1.416810	20.60724	7.649738
Probability	0.261882	0.492429	0.000034	0.021821
Sum	54.53861	60.73570	-414.5881	861.2900
Sum Sq. Dev.	4.137158	40.96014	259601.9	180400.1
Observations	10	10	10	10

**Source:** Generated by Researchers Via E-view 12

Table 1 and 2 presented results of the respective period under Pre-Post Covid19 human capital accounting dimensions and Pre-Post Covid19 financial performance measure. The overall measure of earnings per share (EPS) under Pre-Covid19 era shows a lower PREEPS Mean (81.19) and

Standard Deviation (111.06) than under Post-Covid19 era POSTEPS Mean (86.12) and Standard Deviation (141.57). Similarly, earnings per share (EPS) under Pre-Covid19 era showed a lower growth rate of Minimum (0.040) and Maximum (284.00) than under Post-Covid19 era POSTEPS Minimum (0.780) and Maximum (444.00). Result further indicated that earnings per share (EPS) under Pre-Covid19 era and Post-Covid19 era indicates 1.002 and 1.843 skewness respectively implies that both periods have a long right tail. Finally, earnings per share (EPS) under Pre-Covid19 era and Post-Covid19 era shows a positive Kurtosis 2.359 and 5.182 implied that the extent of flatness of the distribution of the data series is relative to normality curve.

Table 1 and 2 also presented the individual dimensions of human capital accounting under Pre-Covid19 era and Post-Covid19 era. The Mean statistics indicates that Pre-Covid19 era has lesser employee cost (PREEC) Mean-value of 5.292 than Post-Covid19 era (POSTEC) Mean-value of 5.453, Pre-Covid19 era has lesser training and development cost (PRETDC) Mean-value of 5.779 than Post-Covid19 era (POSTTDC) Mean-value of 6.073, Pre-Covid19 era has higher value added intellectual coefficient (PREVAIC) Mean-value of 25.281 than Post-Covid19 era (POSTVAIC) Mean-value of -41.458. However, EC under Pre-Covid19 era shows a lower growth rate of Minimum (4.025) and Maximum (5.911) than under Post-Covid19 era Minimum (4.181) and Maximum (5.984), TDC under Pre-Covid19 era shows a higher growth rate of Minimum (3.638) and Maximum (7.893) than under Post-Covid19 era Minimum (3.535) and Maximum (8.223) while VAIC under Pre-Covid19 era shows a higher growth rate of Minimum (-21.627) and Maximum (72.028) than under Post-Covid19 era Minimum (-519.988) and Maximum (56.357). Finally, EC and TDC under both era are negative skewed which indicates that, they have a short right tail. VAIC under Pre-Covid19 era shows positive skewed, implies that it have a long right tail but VAIC under Post-Covid19 era shows negative skewed, implies that it have a long right tail. Furthermore, EC, TDC and VAIC under Pre-Covid19 era and Post-Covid19 era showed a positive Kurtosis implies that the extent of flatness of the distribution of the data series relative to normal.

A comparison of the above measures showed that neither Pre-Covid19 era nor Post-Covid19 era consistently outperformed the other. In order to ascertain whether there are significant relationship differences in the above result, multiple regression analysis is presented below:

**Table 3: Pre-Covid19 Era Regression Analysis**

Dependent Variable: PREEPS

Method: Panel Least Squares

Date: 04/18/22 Time: 16:05

Sample: 2018 2019

Periods included: 2

Cross-sections included: 5

Total panel (balanced) observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	469.2074	387.1103	1.212077	0.2710
PREEC	-91.82771	58.83091	-1.560875	0.1696
PRETDC	14.88321	32.18597	0.462413	0.6601
PREVAIC	0.474591	2.149382	0.220803	0.8326
R-squared	0.397412	Mean dependent var		81.19000
Adjusted R-squared	0.096117	S.D. dependent var		111.0618
S.E. of regression	105.5895	Akaike info criterion		12.44617
Sum squared resid	66894.82	Schwarz criterion		12.56720
Log likelihood	-58.23084	Hannan-Quinn criter.		12.31339
F-statistic	1.319015	Durbin-Watson stat		0.275880
Prob(F-statistic)	0.352449			

The above table 3 presented Pre-Covid19 era result.  $R^2= 0.397$  and Adjusted  $R^2= 0.096$ ) which indicated that there is a moderate joint relationship between the independent variables (PREEC, PRETDC, PREVAIC) and dependent variable (PREEPS). The coefficient of determination R-Square represented the proportion of variation of the dependent variable (PREPS) that has been explained by the independent variables (PREEC, PRETDC, PREVAIC) in the model. This implied that about 39.7% of increase in Pre-earning per share (PREEPD) is due to increase in PREEC, PRETDC and PREVAIC while 60.3% was explained by unknown variables that were not included in the model. The F-statistic, 1.319 with a Prob(F-statistic) value of 0.352 showed that the model did not satisfies the overall goodness-of-fit statistical test at 0.05. The Durbin-Watson Statistic of 0.275 suggests that the model does not contain serial correlation.

**Table 4: Post-Covid19 Era Regression Analysis**

Dependent Variable: POSTEPS

Method: Panel Least Squares

Date: 04/18/22 Time: 16:12

Sample: 2020 2021

Periods included: 2

Cross-sections included: 5

Total panel (balanced) observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-149.5019	606.4008	-0.246540	0.8135
POSTEC	16.49643	90.57951	0.182121	0.8615
POSTTDC	22.47692	28.96690	0.775952	0.4673
POSTVAIC	-0.220617	0.310040	-0.711576	0.5034
R-squared	0.182384	Mean dependent var		86.12900
Adjusted R-squared	-0.226424	S.D. dependent var		141.5784
S.E. of regression	156.7897	Akaike info criterion		13.23686
Sum squared resid	147498.1	Schwarz criterion		13.35790
Log likelihood	-62.18431	Hannan-Quinn criter.		13.10409
F-statistic	0.446135	Durbin-Watson stat		1.478785
Prob(F-statistic)	0.728956			

The above table 4 presented Post-Covid19 era result.  $R^2= 0.182$  and Adjusted  $R^2= -0.226$ ) which indicated that there is a negative joint relationship between the independent variables (POSTEC, POSTTDC, POSTVAIC) and dependent variable (POSTEPS). The coefficient of determination R-Square represented the proportion of variation of the dependent variable (POSTEPS) that has been explained by the independent variables (POSTEC, POSTTDC, POSTVAIC) in the model. This implied that about 18.2% of increase in Post-earning per share (POSTEPS) is due to increase in POSTEC, POSTTDC and POSTVAIC while 81.8% was explained by unknown variables that were not included in the model. The F-statistic, 0.446 with a Prob(F-statistic) value of 0.728 showed that the model did not satisfies the overall goodness-of-fit statistical test at 0.05. The Durbin-Watson Statistic of 1.478 suggests that the model does not contain serial correlation.

## Test of Hypotheses

### Statement of Hypotheses

**Ho<sub>1</sub>** There is no significant relationship between pre-post Covid19 employees cost and earning per shares of listed oil and gas companies in Nigeria.

**Ho<sub>2</sub>** There is no significant relationship between pre-post Covid19 training/development cost and earning per shares of listed oil and gas companies in Nigeria.

**Ho<sub>3</sub>** There is no significant relationship between pre-post Covid19 value added intellectual coefficient and earning per shares of listed oil and gas companies in Nigeria.

**Decision Rule:** Accept Ho if  $P > 0.05$ . Otherwise reject

**Decision:** The results in table 3 and 4 showed insignificant relationship between pre-post employees cost and earning per shares. The probability values  $P = 0.169 > 0.05$ ;  $0.813 > 0.05$  revealed that earning per share under Pre-Covid19 era and Post-Covid19 era has insignificant relationship between with employee cost. Thus the null hypothesis one is accepted which implied that there is no significant relationship between pre-post employees cost and earning per shares of listed oil and gas companies in Nigeria.

The results in table 3 and 4 showed insignificant relationship between pre-post training/development cost and earning per shares. The probability values  $P = 0.660 > 0.05$ ;  $0.467 > 0.05$  revealed that earning per share under Pre-Covid19 era and Post-Covid19 era has insignificant relationship between with training/development cost. Thus the null hypothesis two is accepted which implied that there is no significant relationship between pre-post training/development cost and earning per shares of listed oil and gas companies in Nigeria.

Finally, the results in table 3 and 4 showed insignificant relationship between pre-post value added intellectual coefficient and earning per shares. The probability values  $P = 0.169 > 0.05$ ;  $0.813 > 0.05$  revealed that earning per share under Pre-Covid19 era and Post-Covid19 era has insignificant relationship between with value added intellectual coefficient. Thus the null hypothesis three is accepted which implied that there is no significant relationship between pre-post value added intellectual coefficient and earning per shares of listed oil and gas companies in Nigeria.

## CONCLUSIONS AND RECOMMENDATIONS

The study investigated the relationship between human capital accounting and financial performance of listed oil and gas companies in Nigeria. The study employed an ex-post-facto research design and secondary sourced of data collection was used. Descriptive statistics and multiple linear regression method of data analysis was adopted and it was subjected to Pre-Covid19 era and Post-Covid19 era. The results presented indicated that earning per shares under Pre-Covid19 era and Post-Covid19 era had insignificant relationship with employee cost, training/development cost and valued added intellectual coefficient of listed oil and gas companies in Nigeria. Therefore, the study generally concluded that, there is insignificant relationship between human capital accounting and financial performance of listed oil and gas companies in Nigeria under Pre-Covid19 era and Post-Covid19 era. Based on the conclusion, the study suggested as follows;

1. Companies should evaluate employees cost and training/development cost with return on assets, return on equity, net profit margin etc because this study result showed that earning per share had insignificant relationship with human capital accounting.
2. Adequate training of staff should be taken into consideration because it will help to expose them to current issues in their area of specialization.
3. Expenditure on human capital accounting should presented in the financial statement because this study sourced of data collection confirmed that most of the firms did not present training/development cost in their financial reports.

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