

HUMAN RESOURCE COSTS AND FINANCIAL PERFORMANCE OF QUOTED COMPANIES IN NIGERIA

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Abstract

Accounting from the very beginning is confined to record only those business transactions which can be expressed in monetary terms. This study seeks to empirically investigate the relationship between human resource costs and financial performance of quoted companies in Nigeria. Panel data on different types of human resource costs and financial performance spanning from 2016-2017 were collected from financial reports and accounts of quoted companies on Nigeria stock exchange and federal Inland Revenue Service. Ordinary Least Square Multiple Regression, Auto Regressive Lag, Augmented Dickey-Fuller, Co-integration test, Granger Causality Test, Error Correction Model was used in analyzing the data with the aid of E-view version 12. The empirical results indicate that human resource cost significantly relate to financial performance, explaining about 80.1% of the total variation in revenue, human resource accounting were found to significantly relate to financial performance. The study conclude that human resource cost relate positively and significantly to financial performance and recommends that Management should not recruit more staff and should consider retaining only efficient staff, this implies that insurance firms should downsize their number of staff and focus on training and re-training of the most efficient members of staff. Management should make retirement benefits attractive so as to attract best brains to their respective firms, and there should be a well-coordinated program for staff development if the firm's profitability and performance are desired to increase positively.

Keywords: Human Resource Costs, Financial Performance, Revenue, Salaries and Wages, and Acquisition Costs.

Introduction

The past few decades have witnessed an overall transition from manufacturing to service-based economies. The importance of insurance sector and its contribution in a country's economic development is increasing day by day in this era of globalization. The remarkable growth and economic contribution of the financial services industry, information and communication industry, and other service-oriented companies on the Nigerian economy during the last ten years have indicated the significance of the service sector. The activities in the Nigerian Stock Exchange (NSE) for the last decade have been dominated by the service sector. During the period, investors indicated a high proportion of their interest on the shares of the service sector and commit high investment to the sector. In this situation, the investors and other stakeholders rely heavily on the financial reports prepared and published by the service companies in making their investment decisions. They require the service companies to disclose adequate information that are capable of revealing the true and fair view of their operations and which could be of relevance to all stakeholders. Where a quoted service company reports its financial performance and position for a particular period, it is expected that all the important and material facts are incorporated and adequately disclosed. If these companies failed to report on their major asset (human resource), the adequacy and materiality of their financial information disclosure is questionable. That is why the difference between the market value and book value of their shares is usually significant and attributed to those intangible assets (mostly human resource) not reported by the companies (Abubakar, 2007; Abubakar, 2008). Take a look at Microsoft® Incorporated of the United States of America, whose success depends solely on the brain power and human capability and capacity. When this company reports only on its corporate building, furniture and fittings, and software gadgets without reporting the value of its human resource, should the financial reports be considered true and fair? The response is more likely to be no. Moreso, the magnitude of the difference between the company's market value and book value is so large thereby revealing a huge amount of intangibles. Human resource is adjudged as the catalyst for the transformations of the global economies from information-based to knowledge-based (Abubakar, 2009). In the information and knowledge based economies, human brain and intellectual abilities and capabilities are the key ingredients. However, the accounting aspect of the human capital is yet to be fully accepted and applied in the corporate financial reports of corporate entities.

The study of human resources is as old as the study of business activities. Early economists recognized the labour force and entrepreneur as fundamental factors for any production or service activity to take place. However, this class of assets is never given a proper treatment in the financial statement. "It is perfectly true that the accounting treatment of people shows them as cost" (Akintoye, 2012). An accounting system where people or human resources are treated as 'capital investment' will not only affect the preparation of financial statements but will ultimately affect organizational performance. Human resource accounting involves accounting for expenditures related to human resources as assets as opposed to traditional accounting, which treats these type of costs as operating expenses that reduces firm's operating profit. A statement commonly found in the chairman or president's letter accompanying many corporate annual reports is somewhat similar to the following: "Our employees are one of our most important and valuable assets."

However, when one looks at the statement of financial position, these assets cannot be found. The reader is unable to ascertain the value of this “valuable and important assets” from conventional accounting statements. Perhaps more important, the reader cannot determine whether the value of the human resources is increasing, decreasing or remaining unchanged. These unmeasured assets are becoming increasingly more important with each passing year. The advancing technical complexity of modern business and the resulting increase in time required for personnel to gain skill and experience highlight the importance of this resource. A growing number of accountants, economists, sociologists, psychologist, and business executives are becoming concerned with the inadequacy of current management and accounting systems to account for human resources. As a result of this inadequacy, many of the decisions made by managers give only superficial consideration to the human resource factor.

In today’s dynamic business environment, firms invest heavily in human capital assets. The problem however, is that these investments are either immediately expensed in the financial statement or capriciously amortized and therefore are not fully reflected in the balance sheet. Consequently, the book values of firms with significant amounts of human capital investments are unrelated to the market values (Adebawojo; Enyi & Olutokumbo, 2015), which by implication means that the firm is undervalued.

In the course of 2006, for example, Unilever Nigeria plc invested over 40 million naira in training its human resources, in addition to in-house programmes to develop members of its staff, and mutual development of workers in Sister companies abroad (Annual Report 2008 as cited in Micah; Ofurum & Ihendinihu 2012). In 1988, Nigerian Breweries plc invested more than 88 million naira in local and overseas training of its members of staff. In 2007 Access Bank Plc began the building of Access Bank Campus also referred to as Access University of Banking Excellence. In Wema Bank Nigeria plc they have a policy of sending every single member of staff to relevant training course for a minimum of 80 hours annually. These weighty capital spending to train and retrain quality staff are not revealed in the statement of financial position of many organizations (Micah; Ofurum & Ihendinihu, 2012). As a matter of fact, they are charged against revenue for the period to lessen income and by extension the value of the business (Micah; Ofurum & Ihendinihu 2012). The remainder of this paper is organized as follows after the introduction section II discuss the literature on human resource cost and corporate financial performance. Section III methodology, while empirical results are reported in section IV. Section V concluding remark, recommendations, limitation and suggestion for further studies.

Review of related Literature and Hypotheses Development

Value Theory

The proponents of this theory are of the view that the measurement of the value of employees should focus on the value they can create for their organisations while rendering their services. The soundness of the human resource valuation under this theory depends wholly on information, judgment, and impartiality of the estimates and guesstimates. Notable contributors under this approach are Babsay & Tapang (2012), Davis (2018), Edom, Inah & Adanma (2015), Ekwe (2013). c) Present Value of Future Earnings/Benefits: Gaynor, Lennox, Molly & Tari (2016) proposed an economic valuation of employees based on the present value of future earnings, adjusted for the probability of employees’

death/separation/retirement. This method helps in determining what an employee's future contribution is worth today. According to this theory, the value of human capital embodied in a person who is 'y' years old, is the present value of his/her future earnings from employment. Other proponents of this theory are Geiger, Lennox & North (2008). The models developed under this theory tend to be more objective because they use widely based statistics such as census income return and mortality tables. However, the human resource models under this theory assign more weight to averages than to the value of any specific group or individual.

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 organisations. Although several research works had been carried out on performance related issues as it affects organisations or firms but its definition has been challenging to researchers. According to Ifuruze, Odesa & Ifurueze (2014), performance is probably the most widely used dependent variable in organisational research today, yet it remains one of the most vague and loosely defined constructs. They further confirmed that the struggle to establish a meaning for performance has been ongoing for many years and it is not limited to the field of strategic Human Resource Management (SHRM).

Ijeoma., Bilesammi & Arona (2013), confirmed the fact that defining organisational performance has been very challenging to researchers because of its many meanings. However, they traced the history of the attempted definitions of performance as noted by other researchers between 1950s and 2006. In the 50s organisational performance was defined by Ikpefan, Kzeero & Taiwo (2015) as the extent to which organisations, viewed as social system fulfilled their objectives. In this era, performance evaluation focused on work, people and organisational structures. Between 60s and 70s, organisations explored new ways to evaluate their performance.

Corporate Financial Performance: Concept and Measurement

Although the definition of Corporate Financial Performance is not debated in the literature, there is disagreement with respect to the best way to measure Corporate Financial Performance (Ekwe, 1984). According to Ojha (2013), a survey of the literature reveals that Corporate Financial Performance has been basically measured in three forms: market, accounting, and survey measurements. Ojha (2013) further explain that the first approach reflects the degree of satisfaction of the shareholders; the second captures an idea of the internal efficiency of the company; and the last provides a subjective estimation of its financial performance. It is worth indicating that, just as there is a relationship between Corporate Financial Performance and stakeholder theory, there is an association between Corporate Financial Performance and the theory of the firm, given that seeking to maximize Corporate Financial Performance is linked to the objective of the firm.

In empirical studies involving Corporate Financial Performance, researchers, with the goal of measuring Corporate Financial Performance, have resorted to the use of various types of variables. Examples of the variables employed for this purpose are the following: return on assets (ROA) (Ekwe, 2013); return on equity (ROE) (Ekwe, 2013; Davis, 2018); sales growth (Akintoye, 2012; Babsag & Tapang, 2012); return on sales (ROS) (Akintoye, 2012;

Abubakar, 2008); operating margin (Davis, 2018; Edom., Inah & Adanma, 2015); and Tobin's Q (Asika et al, 2017; Edom., Inah & Adama, 2015). This study will measure the performance of Insurance companies in Nigeria by using ROA, and ROE as profitability indicators

In contrast, the variables employed to measure Corporate Financial Performance are supported in the literature by precise forms with which to measure them. Performance is defined as a set of financial indicators which offer information on degree of achievement of objectives and results. Performance could also be stated to be the realization of organisational goals and objectives with minimum resources while performance measurement could be described as the assessment of the level of achievement of organizational goals and objectives with minimum resources. For an organisation to effectively and efficiently achieve its goals and objectives, human asset should be considered as a germane factor contributing to organisation's performance.

The following could be regarded as the attributes of organisational performance as identified in Davis (2018), performance is dynamic, requiring judgment and interpretation; performance may be illustrated by using a casual model that describes how current actions may affect future results; performance may be understood differently depending on the person involved in the assessment of the organisational performance. For instance, performance can be understood differently by a person within the organisation compared to one from outside.

Intellectual capital resources (including human capital) are increasingly important factors on the successful achievement of corporate objectives (Guthrie & Petty, 2000). For stakeholders to fully understand an organization and the effectiveness of its managers, it is therefore important that corporate reports adequately reflect all resources used and developed to further the organization's achievement. According to Akintoye, (2012) firm performance encompasses these specific areas of firms outcomes:

(a) Financial (profits, return on assets, return on investments); (b) market performance (sales, market share); and (c) shareholder return (total shareholder return, economic value added) Academically, firm performance is the ultimate dependent variable of interest for those concerned with just about any area of management: accounting is concerned with measuring performance; marketing with customer satisfaction and market share; operations management with productivity and cost of operations, organizational behaviour with employee satisfaction and structural efficiency; and finance with capital market response to all the above, management journal, the academy of management journal and administrative science quarterly included some measures of firm performance. Performance is so common in organizational research that it is rarely explicitly considered or justified; instead it is treated as a seemingly unquestionable assumption (Akintoye., 2012). The multidimensionality of performance covers the many ways in which organizations can be successful; domain of which is arguably as large as the many ways in which organizations operate and interact with their environment.

Human Resource Accounting (HRA)

Human resource (HR) is a term used to describe the individuals who comprise the workforce of an organisation, although it is also applied in labour economics to business sectors or even whole nations. Human resource is also the name of the function within an organisation charged with the overall responsibility for implementing strategies and policies relating to the

management of individuals (i.e. the human resource). This function title is often abbreviated to the initials 'HR'.

Human resources is a relatively modern management term, coined as early as the 1960s - when humanity took a shift as human rights came to a brighter light during the Vietnam era (Nadler, 1984). The origins of the function arose in organisations that introduced 'welfare management' practices and also in those that adopted the principles of 'scientific management'. From these terms emerged a largely administrative management activity, coordinating a range of worker related processes and becoming known, in time as the 'personnel function'. Human resources progressively became the more usual name for this function, in the first instance in the United States as well as multinational or international corporations, reflecting the adoption of a more quantitative as well as strategic approach to workforce management, demanded by corporate management to gain a competitive advantage, utilising limited skilled and highly skilled workers.

On the other side, accounting is viewed as a child of production (Akindehinde et al, 2015). Production can be either the creation of tangible goods or the provision of services to satisfy human wants. The major factors of production are the land, labour, capital and entrepreneur. While every organisation reports on and includes land, capital and entrepreneur in its financial statements, labour is not given much attention and hence, its expenditure only represents periodic cost made by the organisation. The labour or employees are the human assets or resources organisations have. HRA considers human resource as equivalent to other assets in the organization. They require investment over time to make them productive. Such investment relates to the hiring, training, and development costs, which are capitalised and amortised over an assumed probably productive life for the human resource, taking into account attrition and eventual deterioration (Akintoye, 2012; Okpalu & Chidi, 2010). The concept of HRA has been defined in so many ways but the basic feature of the system remains the same in every definition.

The American Accounting Association (1973:23) defined HRA as “the process of identifying, measuring and communicating information about human resource in order to facilitate effective management within an organisation”. This definition considers HRA as the process involving recognition and the quantification of human resource for the purpose of assisting the effective management of an organisation. The definition is not specific as to what constitutes the human resource expenditures and how it is to be recognized.

A more specific definition of HRA is the one given by Babsay & Tapang (2012), which refers HRA as the process, which involves measuring the cost incurred by business firms and other organisations to recruit, select, hire, train and develop human asset. This gives a view as to what expenditure on the human resource should be recognized for valuation and reporting purposes. This definition, in other words, regards HRA as involving the measurement of economic value of people to organisations. Whereas the above definition of HRA centred on the cost incurred in improving and developing human resource, another definition considers the contributory aspect of human resource. Thus, Oluwatobi & Ogunrinola (2011) as well as Lau and Lau (1978) view HRA as a method for systematically measuring both the asset value of labour and the amount of asset creation that can be attributed to personnel activities. This definition incorporates the economic benefit attributable to the human resource in addition to recognizing their cost implication.

HRA is also seen as an important aspect of management information system. In this view, Omodero & Ihendinihu (2017) defines the concept as basically an information system that tells management what changes are occurring overtime to the human resource of the business. It involves accounting for investment in people and their replacement costs, and also the economic value of people in an organisation. This definition regards HRA as an information system capable of assisting the management in effective decision-making relative to the hiring and retention of employees. Therefore, HRA provides a comprehensive look at one method of using human resource cost and value information in the decision-making process.

According to Paredy (2014), HRA refers to the measurement of the abilities of all employees of a company, at every level – management, supervisory and ordinary employees – to produce value from their knowledge and the capabilities of their minds. This definition considers the current growth in the service industry where the knowledge and intellectual capabilities of employees are the key elements to success. As such, HRA is seen as the wealth of the employees' knowledge and intellectual capabilities added to the organisation thereby making it to earn profit and to succeed.

Ratti (2012), also views HRA as a measurement and reporting of the cost and value of people as organisational resources. This definition rests on the premise that knowledge and intellectual capabilities of employees are becoming more and more important in corporate investment decision-making. This is due to the fact that service industries are now overtaking the manufacturing industries and in service delivery business, the knowledge and intellectual capabilities of employees matter more than any other tangible asset.

According to Kodwani and Tiwari (2007), HRA is “an attempt to identify, quantify and report investment made in human resources of an organisation that are not presently accounted for under conventional accounting practice”. This definition centred on three key areas of human resource: identification of what constitute it, quantification of it in monetary terms, and reporting it in the financial reports of organisation. From the perspective of this definition, human resource is crude in nature, but needs refining in order to determine what constitute HR for accounting purposes. Accounting for human resource entails the capitalisation of investments and other expenditures on employees excluding salaries and wages. However, only investments that can improve the quality and productivity of employees should be capitalised (Ratti, 2012; Paredy, 2014; Oko, 2018). But Ojha (2013) and Paredy (2014) opined that the extent of capitalising the investments on human resource should better be left with the reporting companies. Their argument showed that capitalisation of human resource expenditure is better when a voluntary operational environment is created.

Looking at the trend of definitions in the field of HRA, as highlighted above, this study therefore considers the definition of HRA by Ghase & Yusuf (2014) and Ratti (2012) as explaining the concept better. This is for the fact that HRA is a combination of cost and value, and does not consider all expenditure on human resource in the capitalisation process. In other words, the study views HRA as the measurement process which recognizes cost and value of employees in the financial statements of an organization, as an intangible asset, to the extent of those expenditure that bring benefit to the organization for more than one accounting year, so that the true value of the organization can be established thereby assisting the various users of the financial statements in making their respective decisions.

Empirical Review

There are growing interests by researchers in the importance of intellectual capital in today's knowledge-based economy and on its effects on innovation, productivity growth as well as the performance and competitiveness of organizations with evidences of such studies existing in literature. For instance, a study by Mclean Osman Gani & Oho (2014) on 137 Swedish engineering organizations shows that the financial outcomes of human resource investments have a significant positive correlation with an increase in an organization's competence, shares and added value. Research among top U.K. organizations, as well as similar investigations carried out in the U.S. and other European countries, further, confirm that human resource measurement and reporting can lead to improved profitability and competitiveness of an organization (Micah., Ofurum & Ihendinihu 2015; Obara, 2013; Odhong., Were & Omolo, 2014; Ojha, 2013). For convenience, the empirical review of the empirical findings pooled together the various dimensions of human resource accounting and their effect on pooled financial dimensions of organisational performance.

Okafor, Aribaba, & Jeroh (2010) examined the impact of human resource accounting disclosure on revenue of selected listed firms in Nigeria. Annual financial report index of the selected firms was used to capture the dependent variable while the human resource accounting disclosure were proxies by firm profitability, firm size, financial leverage and industry type. The study made use of secondary data in eliciting for the required information needed for this study. The population of the study comprises of 188 manufacturing and non-manufacturing firms in the Nigerian Stock Exchange annual report between the period of 2011 – 2015 out of which 20 were selected. The sample size for this study was ballot system of simple random sampling techniques to select 20 listed manufacturing and non-manufacturing firms from the population. The data collected was analysed using descriptive statistics, correlation and regression. The study revealed that there was a positive co-efficient value of 0.565 between the independent and dependent variables. Based on these findings, the study therefore recommends that the listed firms should imbibe the culture of capitalizing their reports and disclose all the expenditure on human resource so as to improve the productivity of the firms. Also, the regulatory body should set aside a minimum standard of reporting human resource accounting in the financial statement of the listed firms in other to enhance stakeholders' valuation in the statement of financial position and note to the accounts.

Omodero and Ihendinihu (2017) investigated human resource accounting and financial performance of firms in Nigerian. The specific objective of the study is to determine the extent to which human resource influence the firms' profit after tax, total revenue and net asset. The hypotheses formulated were tested at 5% level of significance using SPSS software and multiple regression analysis as the statistical tool. The result revealed that Personnel Benefit Cost has significant and positive impact on the PAT, while there is a negative impact on the Net Asset. The research therefore concludes that human resources contribution to the financial growth of firms cannot be overemphasized. Firms should have the culture of training, developing and motivating the personnel to put in their best for the financial growth of their organizations. Providing them with infrastructures and a conducive working environment could reduce the rate of job turnover being experienced among firms.

Oko, (2018) determined the effect of Human Resource Accounting (increase in staff salary, increment in staff and staff retirement benefits) on the Profitability of Corporate Organizations. Specifically, their study sought; to determine the extent to which increase in staff salary has affected organizational profitability; to ascertain if the increment in staff has contributed positively on organizational profitability and to evaluate the extent to which staff retirement benefits has effect on organizational profitability. The data for their study were collected from selected ten (10) commercial banks in Nigeria. The data were analyzed and tested with paired t-test statistical tool. Their study revealed that increase in staff salary has positive effect on organizational profitability, also that the level of increment in staff has influence on organizational profitability. Another finding is that staff retirement benefits have positive effect on organizational profitability.

Onyinyechi and Ihendinihu (2017) investigated human resource accounting and financial performance of firms in Nigeria. Their specific objective was to determine the extent to which human resource influence the firms' profit after tax, total revenue and net asset. Their result revealed that PBC has significant and positive impact on the Profit after tax, while there is a negative impact on the Net Asset. The research therefore concludes that human resources contribution to the financial growth of firms cannot be overemphasized.

Okpako., Atube & Olufawoye (2014) investigated the effects of human resources cost on the profitability of banks in Nigeria from 2010 – 2014 using First Bank Nigeria, Plc and Zenith bank Nig. Plc. They adopted content method of analysis and linear regression model to test their hypotheses. They found that staff cost significantly affects Earnings per share, Net profit margin, and Return on capital employed of banks.

Omodero, Alpheaus, and Ihendinihu (2016) investigated the effect of human resource costs on the financial performance of firms in Nigeria. Their precise objective was to determine the extent to which investments in human resources influence profit after tax and turnover of firms in Nigeria. They extracted secondary data on relevant financial variables from published financial statements of ten selected listed firms in Nigeria. They employed OLS technique in analyzing the data and their results indicated that personnel benefit costs have positive and significant effect on Profit after Tax of firms in Nigeria. Their results however reveal no significant effect of Personnel Benefit Costs on firm turnover. The paper therefore concludes that investments in human resources have positive trade-off effects on profitability and growth of firms and recommends greater commitment to manpower development and training, while providing proper infrastructures and conducive working environment to enhance the capacity of employees to drive positive improvements in corporate financial performance.

Hypotheses Development Level

The foregoing null hypotheses were stated and tested as thus:

H₀₁: There is no significant relationship between salaries and wages with revenue of quoted companies in Nigeria.

H₀₂: Employee development costs does not relate to revenue of quoted companies in Nigeria.

H₀₃: Acquisition Costs does not relate to revenue of quoted companies in Nigeria.

Methodological Foundation

This section identified the methodological foundation adopted in evaluating the significant relationship between human resource accounting and financial performance of quoted insurance companies in Nigeria. The research design applied is non-experimental causal research design. We utilized the descriptive statistics for a clear understanding of the various relevant features of the variables, ordinary least square regression analysis, Augmented Dickey Fuller Unit root test, multicollinearity test, and Error Correlation Model used in analyzing the panel data with the aid of E-view package version 10.

Model Specification

The functional relationship between the dependent and independent variable, the disturbance, co-efficient and intercepts for human resources accounting and financial performance for the purpose of the research are stated below:

$$REV_t = f(SLW_t, EDC_t, AQC_t) - - - - - (i)$$

From the above functional relationship, the econometric model are specified as thus:

$$REV_t = \beta_{0t} + \beta_1 SLW_t + \beta_2 EDC_t + \beta_3 AQC_t + \beta_4 + \mu_t - - (ii)$$

Where: REV_t = Revenue for the period of time

SLW = Salaries and Wages for the period of time

EDC_t = Employee Development cost for the period of time

AQC_t = Acquisition Cost for the period of time

t = for the period of time

β_{0t} = Intercept for the period of time

$\beta_1 - \beta_3$ = Coefficient slope for the period of time

μ_t = Error Term for the period of time

Apriori Expectation

From the foregoing, it is expected that human resource accounting will significantly relate to financial performance. In summary, the apriori expectation is stated as follows:

$\beta_{1t} > 0, \beta_{2t} > 0, \beta_{3t} < 0$ respectively.

Empirical Results and Discussion

To determine the relationship between Human resource costs and financial performance of quoted companies (Insurance) in Nigeria. The estimations are presented under the following as thus:

Model 1 (RVN)

Table 1: Comparative table of the Pooled, Fixed and Random panel effect for Model 1 (RVN).

Pooled Effect			Fixed Effect			Random Effect		
Dependent Variable: RVN			Dependent Variable: RVN			Dependent Variable: RVN		
Variable	Coefficient	Prob.	Variable	Coefficient	Prob.	Variable	Coefficient	Prob.
C	85.68695	0.0007	C	23.06654	0.3552	C	27.30313	0.4689
SLW	-0.19936	0.0159	SLW	-0.00341	0.9639	SLW	-0.01553	0.8343
EDC	-0.14021	0.1222	EDC	-0.04386	0.6128	EDC	-0.05169	0.543
AQC	0.057111	0.5872	AQC	0.037226	0.7228	AQC	0.041771	0.6834
R-squared	0.100199	30.76645	R-squared	0.592265	30.76645	R-squared	0.031464	5.836648

Adjusted squared	R-	0.035153	75.42549	Adjusted squared	R-	0.516154	75.42549	Adjusted squared	R-	-0.03855	50.2433
F-statistic		1.540433		F-statistic		7.781628		F-statistic		0.449397	

Pooled Effect Model: for the third model, 2 variables displays negative coefficient. This variables are; Salaries and Wages (SLW remuneration) and Employee Development Cost (EDC) in the various employed insurance firms. This shows that, an increase in Salaries and Wages (SLW remuneration) and Employee Development Cost (EDC) is likely to induce a reduction in the value of Revenue (RVN) and vice versa. This connotes the possibility of poor utilization of the human resources of the various firms in generating sufficient revenue. These show the inability of many selected variables (with the exception of Acquisition Cost (AQC) to conform to the positive apriori expectation of the second model. Following this, the R-square shows a very low prediction of the criterion variable by the predictor variables as seen from 0.100199. This shows that all employed predictor variables jointly account for only 10.02 percent of variations in Revenue (RVN). The Adjusted R-square further shows a lower deflated prediction of only 3.5%. The f-statistics value of 1.540433 at a probability level of 0.175221 and the Durbin Watson statistics of 0.872375 shows a poor fit in the model and bad serial correlation in the model. Overall, only the Salaries and Wages (SLW remuneration) is seen to be significant in influencing the Revenue (RVN) despite its negative tendencies.

Fixed Effect: Unlike the pooled effect model, the fixed effect model shows 2 negative coefficients. This is accruing to Salaries and Wages (SLW remuneration) and Employee Development Cost (EDC). This shows that increases in these variables are likely to reduce the Revenue (RVN). And proportionate decreases in these variables is likely to boost the Revenue (RVN). The R-square statistics of the study shows a stronger prediction of the criterion by the employed predictors. This is seen to be 0.592265, which shows that all employed predictor variables jointly account for up to 59.22 percent of variations in the criterion variables. The Adjusted R-square similarly shows an average and fundamental level of prediction of the criterion variable by about 51.61% (0.516154). The F-statistics coefficient of 6.012161 at a probability level of 0.00 shows a well fitted model. The Durbin Watson statistics of 1.93 is seen to be within the relevant range. It can be observed that no variable possesses or holds a significant predictors of Revenue (RVN).

Random Effect: Showing similar results to the pooled effect, the random effect shows the prevalence of negative coefficient as linked to Salaries and Wages (SLW remuneration) and Employee Development Cost (EDC) in the various sampled insurance companies. This shows that, an increase in Salaries and Wages (SLW remuneration), Employee Development Cost (EDC), or/and Current Asset (CAR) is likely to induce a reduction in Revenue (RVN) and vice versa. These show the inability to conform to the positive apriori of all employed variables. Following this, the R-square shows a weak prediction of the criterion variable by the predictor variables as seen from 0.050188. This shows that all employed predictor variables jointly account for only 5.02 percent of variations in Revenue (RVN). The Adjusted R-square further shows a lower deflated negative prediction of only -1.8%. The f-statistics value of 0.449397 at a probability level of 0.625999 and the Durbin Watson statistics of 0.843461 shows a poor fit in the model and bad serial correlation in the model. Overall, no variable significantly influence the per share earnings (RVN).

Hausman Diagnostic Test

The choice of best fit among the model variables is therefore made possible using the Hausman test as presented below as follows. The underlying idea of the Hausman test is to compare the most two efficient and fit sets of the employed model as presented as follows.

Table 2 Hausman Test presentation for Model 1

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	9.053009	6	0.0148	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
SLW	-0.003410	-0.015533	0.000169	0.3510
EDC	-0.043861	-0.051688	0.000287	0.6441
AQC	0.037226	0.041771	0.000513	0.8410

The cross-section random test chi-square statistics value of 9.053009 at a probability level of 0.0148 leads to the reduction of the null and acceptance of the alternate. The null hypotheses states that the random effect is a better model fit while the alternative states that the fixed is a better model fit. The analyses above show that the fixed effect model of the panel data analysis is a better model than the random effect model.

Co-integration Analysis test

Co-integration reveals whether or not the variables have a long-term relationship. As the table below shows in both models using the panel ADF t-Statistic results, the co-integration analyses met the required criterion for the acceptability of the result.

Table 3: Kao Residual Cointegration Test presentation for Model 1

Kao Residual Cointegration Test

Series: ROESLW EDC AQC

Date: 01/22/21 Time: 14:42

Sample: 2012 2017

Included observations: 70

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

User-specified lag length: 1

Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-9.111477	0.0056
Residual variance	86376723	
HAC variance	24899492	

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RESID)

Method: Least Squares

Date: 01/22/21 Time: 14:42

Sample (adjusted): 2010 2017

Included observations: 72 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-1.134344	0.166258	-6.822796	0.0000
D(RESID(-1))	0.194527	0.126370	1.539348	0.1282
R-squared	0.566064	Mean dependent var		253.4273
Adjusted R-squared	0.558436	S.D. dependent var		10038.02
S.E. of regression	7387.079	Akaike info criterion		20.68024
Sum squared resid	3.82E+09	Schwarz criterion		20.74348
Log likelihood	-742.4885	Hannan-Quinn criter.		20.70541
Durbin-Watson stat	1.969174			

The ADF t-statistics -9.111477 at a probability level of 0.0056 which is less than the 0.05(5%) significance level shows significant long run relationship between all employed variables in this model. This means that, in light of various latent firm specific, industrial and market factors, all employed factor are seen to have significant relationship with each other. This shows that variables have significant interrelationships with each other outside the relevant range.

Panel Error correction Model

To adjust for short and long run discrepancies, the study proceeds to the error correction model as follows;

Table 4: Error Correction Model Estimation for Model 1

Dependent Variable: RVN
 Method: Panel Least Squares
 Date: 01/22/21 Time: 14:47
 Sample (adjusted): 2012 2017
 Periods included: 6
 Cross-sections included: 12
 Total panel (balanced) observations: 81

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	65.96326	22.05070	2.991436	0.0038
SLW	-0.120589	0.072945	-1.653151	0.1026
EDC	-0.098204	0.084920	-1.156426	0.2513
AQC	0.130498	0.099986	1.305161	0.1959
ECM(-1)	-0.004249	0.000742	-5.724291	0.0000
R-squared	0.579631	Mean dependent var		33.20787
Adjusted R-squared	0.520144	S.D. dependent var		77.91288
F-statistic	6.381700	Durbin-Watson stat		1.969245
Prob(F-statistic)	0.000007			

In the third model, the error correction model coefficient of -0.004249 shows that all discrepancies in both the long and short run can be adjusted backwards by 0.42%. This is seen to show the expected negative sign and a significant probability level of 0.000. The long run model can be observed to be well fitted and shows the dominance of the fixed effect model's suitability in testing the study hypotheses.

Panel Granger Causality test

To evaluate how changes in one variable account for change in another variable, the panel causality test is employed as follows;

Table 5: Panel Granger Causality test for Model 1

Pairwise Granger Causality Tests

Date: 01/22/21 Time: 14:43

Sample: 2012 2017

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
SLW does not Granger Cause RVN	70	0.80582	0.4510
RVN does not Granger Cause SLW		1.66710	0.1965
EDC does not Granger Cause RVN	70	0.28596	0.7522
RVN does not Granger Cause EDC		0.41580	0.6615
AQC does not Granger Cause RVN	70	0.10032	0.9047
RVN does not Granger Cause AQC		0.22298	0.8007

In this model, there is no form of causal relationship between employed variables. This shows that all predictor variable changes do not significantly causal changes in that of the criterion variables.

Hypotheses Development Level

H₀₁: There is no significant relationship between Salaries and Wages and Revenue (RVN) of quoted insurance companies in Nigeria.

H_{A1}: There is a significant relationship between Salaries and Wages and Revenue (RVN) of quoted insurance companies in Nigeria.

Table 4 shows in the third model that Salaries and Wages shows a coefficient of -0.120589 at a t-statistics of -1.653151 which is seen to be less than the benchmarked ± 1.98 . Also its probability level of 0.1026 is greater than the 0.05 (5%) significance level. The study, therefore, retains the null hypothesis and fails to accept its alternate thereby concluding that there is no significant relationship between Salaries and Wages and Revenue (RVN) of quoted insurance companies in Nigeria.

H₀₂: There is no significant relationship between Employee Development Cost (EDC) and Revenue (RVN) of quoted insurance companies in Nigeria.

H_{A2}: There is a significant relationship between Employee Development Cost (EDC) and Revenue (RVN) of quoted insurance companies in Nigeria.

Table 4 shows in the third model that Employee Development Cost (EDC) shows a coefficient of -0.098204 at a t-statistics of -1.156426 which is seen to be less than the benchmarked ± 1.98 . Also its probability level of 0.2513 is greater than the 0.05 (5%) significance level. The study, therefore, retains the null hypothesis and fails to accept its

alternate thereby concluding that there is no significant relationship between Employee Development Cost (EDC) and Revenue (RVN) of quoted insurance companies in Nigeria.

H₀₃: There is no significant relationship between Acquisition Cost (AQC) and Revenue (RVN) of quoted insurance companies in Nigeria.

H_{A3}: There is a significant relationship between Acquisition Cost (AQC) and Revenue (RVN) of quoted insurance companies in Nigeria.

Table 4 shows in the third model that Acquisition Cost (AQC) shows a coefficient of 0.130498 at a t-statistics of 1.305161 which is seen to be less than the benchmarked ± 1.98 . Also its probability level of 0.1959 is greater than the 0.05 (5%) significance level. The study, therefore, retains the null hypothesis and fails to accept its alternate thereby concluding that there is no significant relationship between Acquisition Cost (AQC) and Revenue (RVN) of quoted insurance companies in Nigeria.

Concluding Remark and Recommendations

- i. Management should not recruit more staff and should consider retaining only efficient staff, this implies that insurance firms should downsize their number of staff and focus on training and re-training of the most efficient members of staff.
- ii. Management should make retirement benefits attractive so as to attract best brains to their respective firms, and there should be a well-coordinated program for staff development if the firm's profitability and performance are desired to increase positively.

Limitations and suggestion for further studies

An empirical analysis of this magnitude cannot be without limitations with regards to the method which was employed. This empirical analysis is limited to sub-variables of human resource accounting (Salaries and wages, employee development cost, acquisition cost/and financial performance (Reven) of quoted insurance companies in Nigeria, spanning from 2008-2017. Apart from this inherent limitation of being a replication study as already pointed out, this empirical study implies the need for further research, further empirical studies in this area should adopt other variables, spanning from 2000-2020 to enhance the generalisability of the research findings and for more robust empirical results.

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