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Intellectual Capital and Financial Performance of Listed Insurance Companies in Nigeria

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Abstract: *This study investigated intellectual capital and financial performance of listed Insurance companies in Nigeria. The study adopted ex-post facto research design on a population of twenty-six (26) insurance companies listed on the Nigerian exchange group. The census method was adopted to elect all of the twenty-six (26) insurance companies. However, only thirteen (13) of the companies had complete data for the period under review (2012 to 2020). Therefore, the sample size of the study was thirteen (13). Given the period of nine (9) years (2012-2020), the study used 117 firm year observations. The statistical model adopted in this study were; descriptive statistics and multiple regression technique for the analysis of data with the aid of Statistical Package for Social Science. Findings revealed that, Human Capital Efficiency has significant and positive effect on Return on Equity, while Structural Capital Efficiency and Capital Employed Efficiency both have no significant and positive effect on Return on Equity. The study concludes that intellectual capital has minimal significant effect on financial performance of insurance companies in Nigeria. It was recommended amongst others that, the International Financial Reporting Committee (IFRC) should develop standard that will make intellectual capital reporting* compulsory in the financial statement in order to enhance financial reporting quality and performance within the context of satisfying the information need of stakeholders

Keywords: *Human capital efficiency, Structural capital efficiency, Capital employed efficiency Return on equity*

Introduction

It is generally contended that the success of any business organization depends largely on the caliber of its workforce. The fact that firms are engaging in voluntary disclosure of intellectual capital information is a clear indication that firms are now recognizing and acknowledging that there has been an omission of a very important asset in the financial statements. An organization having vast physical resources with latest technology may find itself in the midst of severe financial crisis in case it does not have right people to manage and conduct its affairs (Oko, 2018). Thus, in spite of all technological developments, the importance of intellectual capital has in no way diminished.

Human resource accounting also recognized that inclusion of this disclosure in the financial reporting will make the published financial statements more meaningful and useful to the users of accounting information. This is an important step in the development of human resources accounting as it clearly indicates that in future there may be need for financial regulatory authorities on the inclusion of human resources values in the financial statements. They may also need to determine what human resources information firms in Nigeria are disclosing and the trend of this disclosure and what factors determine intellectual capital disclosure in Nigeria. This will shed more light on the current practices of accounting for intellectual capital in the annual reports of Nigerian firms as well as pointing the way forward in the development of this important branch of accounting (Ezekwesili*et al*., 2022).

The adoption of International Financial Reporting Standard (IFRS) in Nigeria has compounded the need for complete disclosure: IFRS recognized the disclosure of intangibles assets in the annual financial statement. Oko (2018) opine that the adoption of the global financial reporting standard (IFRS) increase the need for intangibles disclosure. Ironically, the financial statements in Nigeria lack full disclosure of human resources information. Human resources accounting and by corporate organization is still at the infant stage in Nigeria (Jesuwunmi*et al*., 2019).Studies revealed that a limited attention has been given to examine human capital practices of the business in the developing countries (Jesuwunmi*et al*., 2019). In Nigeria there is a dearth of studies to the best of our knowledge, consequently investigating the determinants of intellectual capital disclosure is imperative. However, despite the growth and development of human resources accounting disclosure, its ability to satisfy the information needs of various stakeholders is still low (Agbi *et al*., 2020).

According to Ofurum*et al*., (2018), innovation chiefly creates competitive advantage through intellectual capital rather than tangible assets. Therefore, managers in those umpires predisposed to invest in knowledge-based resources in order to achieve and maintain corporate success (Nasif *et al*., 2017). However, Oladele *et al*., (2018) opined that Managers of company's intellectual capital generate more than half of a company's value than the production of internal goods in the current economic system. Also, Ofurum *et al*., (2018) revealed that an efficient utilization of intellectual capital is more crucial for accomplishing success in banking than other industries, making such an acclaimed statement that delivering high quality services by a bank is strictly dependent on its investment in terms related to intellectual capital. So, there is need to investigate other sectors of the economy specifically oil marketing companies.

Ofurum *et al*., (2018) opined that financial performance otherwise referred to as profitability is a natural result of business operations that involve the use of both physical and intellectual capital. So, these two variables (intellectual capital and profitability) must always work together to foster considerable growth in the economy. Although, research carried out by Ofor *et al.,* (2022), Sebestova *et al*., (2022) have shown that there is a relationship between intellectual capital and profitability (financial performances). In another development, it has also been proven that there are positive effects on profitability and the results of research carried out by Imeokparia *et al*., (2020). Okoye *et al*., (2022) revealed that financial performance is positively related to company's value.

Despite the phenomenal importance and heavy investments in intellectual capital and its significant relationship with profitability, listed deposit money banks still face a growing challenge. These challenges are not reflected in the financial statements of various organizations as a result of the standard of International Accounting Standard IAS 38 (intangible assets). Also, it is a common knowledge that statement of financial position does not provide holistic information on the real value of an enterprise; instead, they are mainly prepared for reporting purposes (Nasif *et al*., 2017). Traditional accounting system fails to capture intangible assets that create value in the enterprises Lambe *et al.,* (2022).

Therefore, practicality of the accounting data obtained from financial reports has been reduced (Nasif*et al.,*2017). Hence, the disclosures of financial statement of various organizations as a result of the standard of international accounting standard IAS in Nigeria are not in an organized form. In view of the above facts, this study seeks to examine the effect of intellectual capital on financial performance of listed insurance companies in Nigeria.

Statement of the Problem

Intellectual capital reporting has remained a burning issue across the globe in the recent time. The historical method of accounting recognizes only tangible assets in the financial statement of a business entity. This is viewed to be inadequate by users of accounting information. In the quest to satisfy the information need of stakeholders, there is the felt need to disclose intangible assets in organization's financial statements. Unfortunately, accounting standards on intangible assets (IAS 38) deals with assets that the entity can easily measure and control. But intellectual capital contributes to organizational performance (Chukwu*et al*., 2019).

The study on intellectual capital and financial performance of listed insurance companies appears to be lacking in local content. Onyekwelu*et al*., (2021) investigated human resource accounting and corporate financial performance of quoted insurance companies in Nigeria, Ofurum *et al*., (2018) examined the effect of intellectual capital component and financial performance of quoted banks in Nigeria. Chukwu *et al*., (2019) examined market valuation of human capital in Nigeria banks. Godwin *et al*., (2018) studied the impact of intellectual capital on financial performance of listed Nigerian oil marketing companies. Also, Nwaiwu *et al*., (2018), Onyekwelu *et al*., (2017) and Shafiu *et al*., (2017) all examined the impact of intellectual capital on the financial performance of listed deposit money banks in Nigeria.

The types of gaps filled in this study are content gap and scope gap. The scope of this study is nine (9) years, 2012 to 2020 while that of Onyekwelu *et al*., (2021) and Anuonye (2016) were limited

to seven (7) and five (5) years. The content gap the researcher filled was in the area of operational variables particularly the independent variable. The independent variables of this study are human capital efficiency (HCE), structural capital efficiency (SCE) and capital employed efficiency (CEE). These three variables have not been used in any of the studies carried out in Nigeria with respect to insurance companies. However, the two known studies in Nigeria were carried out by Onyekwelu *et al*., (2021) and Anuonye (2016), and the independent variables used by them are; human resource accounting disclosure (HRAD), training cost (TC), number of staff (NOS), increase in staff salaries (INSS) for Onyekwelu *et al*., (2021), while Anuonye (2016) used relational capital (RC), structural capital (SC) and human capital (HC).

It has been observed through empirical review of extant literature that previous studies on intellectual capital and financial performance of listed firms does not consider firms' total premium as a control variable. The total premium of an insurance firm affects financial performance and it is a measure of firm size (Onyekwelu *et al*., 2021). Therefore, this study becomes very imperative as there exist a clear gap in existing literature on the effect of intellectual capital on financial performance of listed insurance companies in Nigeria as most of the studies were in foreign countries.

Measurement of intellectual capital in Nigeria appears to be is very shallow. It is true that human capital is acknowledged by the Directors of companies, especially in the chairman's statement in the annual reports, yet such knowledge are not measured or articulated in the company's financial report. This implies that the value of firms in Nigeria is under reported.

REVIEW OF RELATED LITERATURE

Theoretical Framework

This study was anchored on Value Added Intellectual Coefficient (VAIC) Model

Value Added Intellectual Coefficient (VAIC) Model

The philosophy underpinning this study is anchored on Value Added Intellectual co-efficient model. According to Pulic (1998) as cited in Mujakaii *et al*., (2019), this model was propounded in the year 1997 and was widely adopted by the academic and practitioners as a method to reflect the market value of corporations. Ulum *et al.* (2014) observed that the model provides a standardized and integrated measure, which allows cross-organizational or cross-national comparison and analysis. In another development Uzoamaka *et al*., (2015) opined that the VAIC is very important and is a consistent approach which comprises of several components and this includes Human Capital (HC) Structural Capital (SC) and Capital Employed (CE). He further explained that this was developed by Pulic (1998) in Austrian Intellectual Capital research center. It was developed like an equation that measures how much and how efficiently intellectual capital and capital employed create value, where the value of human capital was considered as the sum of all salaries and allowances accrue to the employees. Nasif *et al*., (2017) revealed that the model shows the intellectual capability of an organization and whether its sources are used efficiently or not.

This is to say that, value added intellectual co-efficient (VAIC) model measures the newly-created value per monetary unit invested in each source. Pulic (2004) as cited in Imeokparia *et al*., (2020) added that the higher the VAIC value of an organization is, the more is the value added created by overall sources of that organization. This model is relevant to this study as it predominantly focus on intellectual capital and financial performance of insurance companies, and other sectors. It is also relevant to this study in the area of examining the relationship between intellectual capital and financial performance of companies.

Concept of Intellectual Capital

Essentially, intellectual capital is the value of a company's knowledge, skills, business training, or any proprietary information that may provide the company with a competitive advantage. In other words, it is the sum of employee's expertise, organizational processes, and other intangibles that contribute to a company's bottom line. In another development, Oladele *et al.,*(2018) sees intellectual capital as a group of knowledge assets that are attributed to an organization and most significantly contribute to an improve competitive position of the organization by creating additional value to defined stakeholders.

However, despite several definitions and concepts by different researchers, one of the most important resources that can positively impact on a company profitability and efficiency is intellectual capital (Anuonye, 2016). Ibor (2016) observed and reiterates that the world economy has shifted from the industrial in which plant and equipment were considered core assets to the post-industrial era in which emphasis is on intellectual capital as the main company's asset. He further explained that most firms in the industrial era by concept still relied on manufacturing capabilities; companies in the post-industrial era now rely almost completely on driven information and knowledge for survival and profit.

The foundation of the above argument is corroborated by Ikpefan *et al*., (2015) who proposed that a company will gain a competitive advantage if their intellectual capital resources are properly and effectively harnessed in the organization. Meanwhile, Davies (2018) observed that the drivers of intellectual capital advantage may be discovered in all employees as well as the organization's ability to beat value through market assessment. This is to say that intellectual capital is represented by the company's stock for example skilled employees, knowledge and management philosophy (Ekundayo *et al*.,2016). However, the study and measurement of the effect of intellectual capital on the profitability of oil marketing companies is a key challenge employee in an organization towards the fulfillment of their stewardship obligation to investors who depend on the financial information of such company in evaluating the performance of the sector in Nigeria. This is because such a study is expected to provide the industry with sufficient information to formulate and implement strategies that will help develop its intellectual capital and serve as a guide in order to improve the company's value creation Asiku *et al.,* 2017. It is against this background that Ofurum *et al*., (2018) argued, therefore, that intellectual capital represents an intangible resource that has been created or acquired by the company and can be used to provide future economic benefits to the company. The question therefore, what aspect of this intellectual capital can actually serve the purpose boasting company's financial performance and what are the various categories of intellectual capital?

Concept of Human Capital

Human capital is human ability to solve problems. Inyada *et al*., (2018) opined that human capital as the skills, knowledge and experience of individual employees within an organization. He further described human capital as collective capabilities of an organization in extracting the best solutions using the knowledge of its individuals. According to Oladele *et al*.,(2018), human capital as the basis of intellectual capital includes the factors (such as knowledge, skills, capabilities and attitudes of employees) leading to improvement of client's expected performance and company's profitability. In fact, they believe that each employee has a type of skills and knowledge which are an integral part of that employee's mind; if the knowledge and skills are not activated, the employee cannot be used to create value for organization. Although the most important asset of a learning organization is its employees, they cannot be owned by the organization for ever,Ezenyilimba*et al*., (2019). In the knowledge-based economy the responsible party for the achieved market results is definitely the employees.

Human capital is basically a term that is related to the education, training, and other professional initiatives introduced in an organizational setting to enhance the levels of knowledge, skill, abilities and social assets of an employee. This is done to enhance the satisfaction and performance of employees which eventually result to firm's profitability. Davies (2018) confirmed that significant studies were carried out on human capital and its implication on firm performance, thus human capital enhancement will result in greater competitiveness and performance. Although, Manukaji*et al*., (2019) opined that the innovation capital otherwise refers to as human capital has a non-linear relationship with organization profitability

Concept of Structural Capital

Structural capital on the other hand, represents organizational values that are necessary for an establishment to continue its activities that support the human capital. Onyekwelu*et al.,*(2017), viewed structural capital as; patent, copyright, and trademarks processes, methodologies, models, documents and other knowledge like artifacts, computer networks and software; administrative systems etc. Organizational values here could be referred to as organizational culture, documentation, database where information belonging to the company's customers and the market are stored, production process, quality control and management systems, copyrights and patents etc.

Similarly, Anuoye (2016) defined structural capital as the supportive infrastructure that enhances the functionality of human capital within an organization. She further explained that structural capital is organizational property and it remains with it even the worker leaves the organization. This form of capital is very strategic and importance in the corporate planning and growth of any organization. It considered as those structures deployed by staff to drive the business processes.

Structural capital is the critical link that allows intellectual capital to be measured at an organizational level (Albertini *et al*., 2019). Structural capital, on the other hand, is about the process, system, practice and procedure of corporate organizations that are used by employees of an enterprise, (Ulum, 2014). Structural capital according to Ndum*et al,* (2021) is "what is left in the organization when people go home in the evening", It can also take the

form of patents, policies, information systems, formulas and competitive intelligence that emanates from the products or systems which a particular company developed over time (MariaDiez *et al.,*2010) as cited in Akinjare *et al*., (2019). Structural capital differs from human capital according to Manukaji *et al.,* (2019), as it serves as supportive tools to the latter. Besides, it is owned by a company and could be reproduced and shared within the enterprise. Thus, it can be deduced that structural capital may differ from one company to another,

work also, Okafor *et al.,* (2022) defined it more comprehensively by linking it to information technological knowledge, research and development, activities and functions both internal and external that facilitate the development of products and services in a company.

Concept of Relational Capital

Shafiu *et al*., (2017) viewed Relational capital as the value an entity derived from its network with customers, business partners and other external parties. This element of Intellectual Capital encompasses knowledge embedded in the relationships with outside environments; knowledge provided by customers, suppliers, government or even competitors, and perceptions held about the firm, such as corporate reputation, Ihendinihu *et al*., (2017). Customer capital is developed, maintained and nurtured by the organization in order to maintain its external relationship, which influences corporate performance ultimately, (Juan,2019). It is the collection of resources brought about by a stable network of relationships within a company, (Obialor, 2017).

Anuonye (2016), observed that relational capital could be likened to external relationships which an organization enjoyed with grouped and persons over time. This may include trade relationship with past, present and potential customers, partners and the public at large. Bakare (2015) argues that relational capital should be separated from structural capital to conduct further discussion. However, Bakare (2015) observed that customer capital is the basic determinant used in the conversion of intellectual capital into market value which is a way acts as a bridge and catalyst in the operations of intellectual capital. In contrast with the human and organizational capital, the customer capital has a more direct impact on an establishment's value and organizational performance, Oluka *et al*.,

The relational capital refers to the relationship between enterprises, customers, suppliers and partners, which is a key to long-lasting profit-making and successful business operations. Relational capital refers to the value of the relationship between the firm and its environment (Bukh, 2015). Relational capital can be business capital i.e. the value the relationship that the organization maintains with the main agents connected with its business processes, and social relational capital which the organization maintains with other social agents and its surroundings.

Relational capital is defined as the set of all relationships – market relationships, power relationships and cooperation – established between firms, institutions and people that stem from a strong sense of belonging and a highly developed capacity of cooperation typical of culturally similar people and institutions (Davies, 2018). According to Prakash *et al*., (2018), relational capital is defined as the collection of tacit and explicit knowledge regarding the form of the relations a company with its local agents. Customers are one of the main agents.

Concept of Financial Performance

The hallmark of every business enterprise is to maximize Profit. Business performances are measured in terms of profitability using financial ratios, trend analysis etc. through it the state of health of an entity can be established for decision-making purposes. Profit making served as the engine that drives business enterprises (Graynor *et al.,* 2016). Pandey (2014) defined profit asmargin of safety, while to the government it is a measure of taxable capacity. Tarsono *et al*., (2019) maintained that profit is an index of economic progress, national income that generates and raised standard of living. Although, accounting profits are classified into two categories: for example, gross profit and net profit. (Nwaiwu *et al*., 2021).

According to Ofurum *et al.,* (2015), there are two factors that affect the profitability of organizations and these factors include the operating profit margin and the rapidity of turnover of capital employed. He further opined that in a more technical term the addition of these two factors are known as the "triangular relationship" Nwaiwu *et al*., (2021) investigated human resource accounting cost disclosure and profitability of upstream oil and gas companies in Nigeria. Finding revealed positive relationship between human capital disclosure and profitability of the firms.

Return on Equity(ROE)

Return on equity measures the percentage of profitability of an entity in relation to shareholders fund. Omesi (2018) viewreturn on equity as net income of a company expressed as a percentage of shareholders in the company. He further explained that it measures the amount of money attributed to ordinary shareholders in relation to the shareholders fund, the higher the proposition, the better for insurance companies under investigation. Pandey (2014) reveals that the rate of dividend is fixed, while return on equity is calculated mathematically as net profit after taxes divided by the net worth (equity). The reason for this calculation is to determine the profitability of owner's investment in the company. This shows how efficiently managers of companies have used the resources of the owners at their disposal. This may reflect the extent to which the necessary objectives of a company are achieved (Omesi, 2018). This is because an increase in revenues usually is a signal for potential growth (Kamath, 2015). Growth in revenues is calculated mathematically as current year revenues divided by last year revenues.

Empirical Review

Lambe *et al*., (2022) evaluate the effect of human capital resource on financial performance of listed oil and gas firms in Nigeria. The researcher adopted ex-post facto research design. 12 out of 14 listed oil and gas firms were selected. Secondary data were obtained from the audited financial statements of the firms for the periods; 2010 to 2021 (10 years). The operational variables are; ROA, training and development cost. The data were analyzed using panel regression model with the aid of E-views version 10. Finding show that training and development cost has positive significant effect on ROA. The study concludes that training and development cost has a significant positive effect on financial performance and does not substantially reduce the inefficiencies in productivity of listed oil and gas firms in Nigeria. The study recommended that businesses should ensure adequate investment in intellectual capital.

Nwaiwu *et al*., (2021) empirically explore the relationship between human resource accounting cost disclosure and quoted performance of upstream oil and gas in Nigeria. The study was an ex-post facto one. The secondary data were generated from the audited financial statement of the oil and gas companies from 2016 to 2020. The operational variables are ROE, ROA and HC. The data were analyzed using descriptive statistics (OLS regression technique) with aid of E-view version 10. The findings thereof revealed that human resource accounting cost disclosure has significant relationship with ROE and ROA. It was recommended that human resource accounting cost should be capitalized.

Juan *et al*., (2019) investigate Intellectual capital performance. In this study, the Value Added Intellectual Capital (VAICTM) and Modified Value Added Intellectual Capital (MVAICTM) models are utilized to analyze intellectual capital (IC) performance of the textile industry in China and South Korea during 2012–2017, and measure the contribution of IC sub-components to companies' performance. Findings revealed that the aggregate IC positively affects earnings, profitability, and productivity of textile companies in China and South Korea. At the sub-components level, the contribution of capital employed Efficiency (CEE) is the largest, followed by structural capital Efficiency (SCE), and Relational Capital Efficiency (RCE) in China's textile industry. In addition, Korea's textile industry relies heavily on CEE and human capital Efficiency (HCE), while the contribution of RCE is relatively small. Finally, relevant policies are put forward to promote the sustainable development of the textile industry in these two emerging markets.

Nadum *et al*., (2021) examined human resource cost and financial performance: Study of quoted brewery companies in Nigeria. The study was an ex-post facto one. The operational variables are ROA, ROE, NPM and SC. The data were extracted from annual financial statement of the firms from 2007 to 2019. The data were analyzed using simple regression technique with the aid of SPSS. Findings indicate that SC has significant effect on NPM and ROA. It was recommended that firms should imbibe the culture of capitalizing and reporting investment in human resource in order to improve profitability and productivity.

Godwin *et al*., (2018) investigated the impact of intellectual capital on the financial performance of the listed Nigeria oil marketing companies. Intellectual capital was measured by the market to book value ratio (MB), Value Added Intellectual Coefficient (VAIC), and Monetary model of Tobin's Q (MMQR) while the financial performance was measured by the return on asset (ROA). The ex-post facto research design was adopted while data was extracted from the firm's financial statements. Multiple regression analysis was used to ascertain the impact of intellectual capital on financial performance. From the result, it was discovered that market to book value has a negative significant impact on return on asset. Monetary model of Q Tobin's has an insignificant impact on return on asset while value added intellectual coefficient also has an insignificant impact on return on asset. Hence, the study recommended that the listed Nigerian oil marketing companies should invest more in intellectual capital.

Conceptual Framework

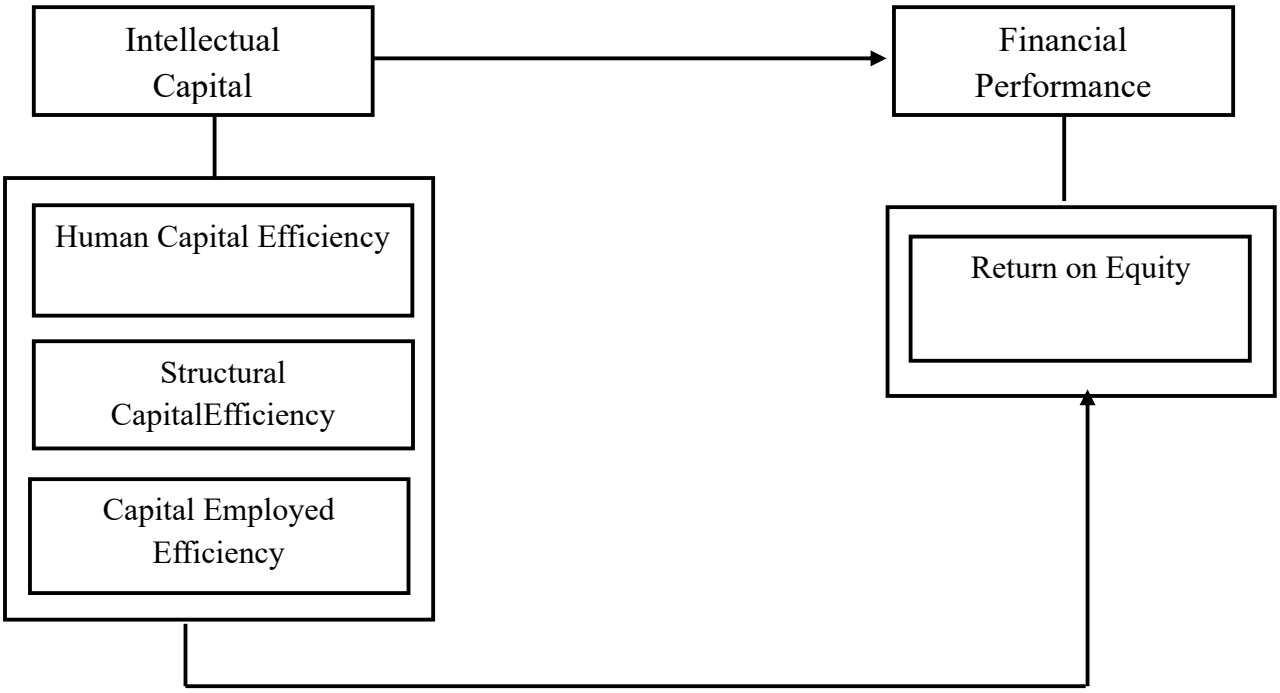

Figure 1:Conceptual Framework of Intellectual Capital and Financial Performance of Listed Insurance Companies in Nigeria.

Source: Conceptualized by the Researcher (2023)

Test of Hypotheses

The following research hypotheses were found appropriate at 0.5 level of confidence.

H_{O1}: Human capital efficiency has no significant effect on return on equity of insurance companies in Nigeria.

H_{O2}: Structural capital efficiency has no significant effect on return on equity of insurance companies in Nigeria.

H_{O3}: Capital employed efficiency has no effect on return on equity of insurance companies in Nigeria.

METHODOLOGY

Research Design

The study adopted ex-post facto research design. The population of the study constitutes twenty-six (26) insurance companies that are listed on the Nigerian exchange group, and the period under consideration was 2012 to 2020. The researchers adopted the census method toelect all of the twenty-six (26) insurance companies for the reason that, the population of twentysix(26) was

small. However, only thirteen (13) of the companies had complete data for the period under review. Therefore, the sample size of this study was thirteen (13). Given the period of nine (9) years (2012-2020), the study used 117 firm year observations. The statistical model adopted in this study was; descriptive statistics and multiple regression model for the analysis of data with the aid of Statistical Package for Social Science (SPSS). These statistical models are considered suitable for this study because it is a reliable method of analyzing the relationship between dependent and independent variables.

Model Specification

The econometric used for this study is as follows;
ROE = a + HCE + e ……1
ROE = a + SCE + e …… 2
ROE = a + CEE + e …… 3
FP = a + VAIC + FSZ + VAIC * FSZ + Ɛ …….. 4

Decision Rule

The rules guiding the test of hypothesis of this study are as follows;

Accept null hypothesis if P-value is greater than 0.05 (P >0.05). On the other hand, reject null hypothesis if P-value is less than or equal to 0.05 (P 0.05).

Univariate Analysis

Table 1: Descriptive Statistics

Variables	N	Range	Minimum	Maximum	Mean	Std. Dev
HCE	117	11.98	-2.58	9.4	2.1825	1.37895
SCE	117	18.36	-12.56	5.8	0.3524	1.46667
CCE	117	2.57	-0.06	2.51	0.2543	0.45089
ROA	117	51.37	-35.89	15.48	1.3707	7.49702
ROE	117	125.21	-96.31	28.9	2.7872	16.12286
EPS	117	63.44	-39	24.44	2.3996	8.66479
TP	117	51573199	572895	52146094	5551674.1	7550047

Source: SPSS Version 24

Human capital efficiency (HCE) has a negative minimum value (-2.58), suggesting that the efficiency of human capital in some insurance firms is negative, indicating inefficiency in the use of human capital. The maximum value of HCE – a positive figure of 9.4 indicates high level of efficiency of human capital. The mean value of 2.18 shows that averagely, there is a reasonable efficiency of human capital in the insurance industry in Nigeria. The standard deviation of 1.37 is however low, suggesting that the values of HCE are clustered around the mean.

Multivariate Analysis

Table 2: Result of Hausman test (ROE on HCE, SCE and CEE)

Model Summary 1

```
---- Coefficients ----
(b)        (B)        (b-B)   sqrt(diag(V_b-V_B))
ROE fe   re      Difference        S.E.
-------------------------------------------------------------------------------
       HCE     5.58946    5.535878       .0535816       .3945173
       SCE    -.8082021   -.3021922      -.5060099       .2661374
    CEE    2.59422     3.105538      -.5113181       2.065262
-------------------------------------------------------------------------------
b = consistent under Ho and Ha; obtained from xtreg
         B = inconsistent under Ha, efficient under Ho; obtained from xtreg

   Test:  Ho:  difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
     =    4.95
Prob>chi2=    0.1756
```

Table 3:Result of Random-effects Regressionof ROE on HCE, SCE and CEE

Model Summary 2

```
Random-effects GLS regression                Number of obs =      117
Group variable: firmidNumber of groups  =       13
R-sq:  within  =0.2223                       Obs per group: min =        9
between = 0.2968                                    avg=    9.0
overall = 0.2360                                    max =        9
Wald chi2 (3)      =    33.87
corr(u_i, X)   = 0 (assumed)                 Prob> chi2       =  0.0000
------------------------------------------------------------------------------
ROE |    Coef.Std. Err.     zP>|z|     [95% Conf. Interval]
-------------------------------------------------------------------------------
  HCE |   5.535878   1.004262     5.51   0.000     3.567561    7.504195
  SCE|  -.3021922   .9292164    -0.33   0.745    -2.123423    1.519039
  CEE |   3.105538   3.152491     0.99   0.325     -3.07323    9.284306
 _cons |  -9.977922   2.789855    -3.58   0.000    -15.44594   -4.509905
------------------------------------------------------------------------------
```

Source: SPSS output

Table 2 is the summary result of hausman regression of ROE on HCE, SCE and CEE respectively. The p-value of the Chi Square yielded a statistically insignificant value of 0.1756. Therefore, the Random-effects model is appropriate for testing ROE on HCE, SCE and CEE (Hypotheses 1 to 3).

Table 3 is the summary of result of regression of ROE on HCE, SCE and CEE. The p-value of the regression of ROE on HCE is 0.000 which is less than 0.05 benchmark. This implies that Human Capital Efficiency has significant and positive effect on Return on Equity of insurance companies in Nigeria, and therefore the null hypothesis is rejected. This implies that Insurance companies in Nigeria are committed to investment in intellectual capital to improve their financial performance. On the other hands, the p-value of the regression of ROE on SCE and CEE are 0.745 and 0.325 which are higher than 0.05 benchmark. This implies that Structural Capital Efficiency and Capital Employed Efficiency have no significant effect on Return on Equity of insurance companies in Nigeria, and therefore the two null hypotheses are accepted. This is an indication that structural capital efficiency and capital employed efficiency does not influence financial performance of Insurance companies in Nigeria.

DISCUSSION OF FINDINGS

Result of hypothesis four revealed that Human Capital Efficiency (HCE) has positive and significant effect on Return on equity (ROE) of insurance companies in Nigeria. The p-value of the Chi square arising from the hausman regression test yielded a statistically insignificant value of 0.1756. This implies that the random-effects model fit the data to test hypothesis 1 to 3. The p-value of regression of ROE on HCE is 0.000 which is less than 0.05 acceptable benchmark. This is an indication that human capital efficiency has significant and positive effect on return on equity of insurance companies in Nigeria. This also implies that insurance companies in Nigeria are committed to investment in intellectual capital to improve financial performance. The result of this finding opposed the hypothesis which states that there is no significant relationship between Human Capital Efficiency and Return on equity.

The finding is in agreement with the study carried out by Juan (2019), who investigated the Intellectual capital and performance of textile industry in China and South Korea. The study adopted ex-post facto research design. Simple regression was used to analyse the data obtained from the textile firms. The result shows that aggregate intellectual capital positively affects earnings, profitability and productivity of the textile companies in China and South Korea. Similarly, the result is in tandem with the study undertaken by Buallay*et al*., (2017). They examined the impact of intellectual capital on firm performance of listed firms in Saudi stock exchange. The study methodology was a pooled data collected from the Saudi stock exchange from 2010 to 2014. The study sample was 489 observations from 171 listed firms. The operational variables of the study are; HCE, SCE, CEE, ROA, ROE and Tobin's Q respectively. Findings revealed that intellectual capital has positive and significant effect on the measures of financial performance.

Findings of hypothesis two revealed that Structural Capital Efficiency (SCE) has no significant effect on return on equity (ROE) of insurance companies in Nigeria, given aP-value of 0.745 which is higher than the 5% acceptable benchmark.This means that SCE does not influence financial performance of insurance companies. This implies that, the larger the insurance companies, the lesser the attention given to intellectual capital by management. Result of hypothesis two is in line with the study carried out by Godwin *et al*., (2018). They investigated the impact of intellectual capital on the financial performance of listed oil marketing firms in Nigeria. The researcher used ex-post facto design. Using VAIC, the researchers used multiple regression

analysis to analyse the data. Findings revealed a negative significant impact on ROA of the oil marketing companies in Nigeria. The finding also disagrees with the study carried out by Oko*et al*., (2018) that investigated the effect of Intellectual Capital Management on revenue generation of listed deposit money banks in Nigeria. Descriptive research design was adopted for the study considering the total population of all the 21 listed deposit money banks in Nigeria. Data were obtained through secondary source from Six (6) published annual reports of the listed deposit money banks and analyzed using percentages and ratios. Multiple regressions was used to analyse the data and test of hypotheses to determine if there is significant effect of human capital efficiency, structural capital efficiency and Intellectual Capital management on revenue growth of listed deposit money banks in Nigeria. The study revealed that Structural Capital Efficiency (SCE) has no significant effect on revenue growth of the listed deposit money banks in Nigeria.

Finding of hypothesis three revealed that Capital Employed Efficiency (CEE) has no significant effect on return on equity (ROE) of insurance companies in Nigeria, given aP-value of 0.325 which is higher than the 5% acceptable benchmark.This means that CEE does not influence financial performance of insurance companies. This implies that, the larger the insurance companies, the lesser the attention given to intellectual capital by management. The finding is in agreement with the study carried out byNwaiwu*et al*., (2018). They empirically investigated the relationship between intellectual capital reporting and measures of financial performance of quoted banks in Nigeria. The study adopted ex-post facto research design. Findings revealed mixed results as some elements of intellectual capital reporting were not significantly related to revenue growth and return on investment. The finding also supports the work of Michael *et al*., (2015). They investigated the impacts of intellectual capital on profitability: An analysis of sector variations in Hong Kong. The researchers adopted Value Added Intellectual Coefficient (VAIC) model, using Structural capital (SC) as Independent variable and Return on asset (ROA) as dependent variable. Regression method was used to analyse the data. Findings revealed that VAIC is significantly correlated with a firm's financial performance in terms of ROA, while SC is negatively significant.

Conclusion

The study examined the effect of Intellectual capital on the financial performance of insurance companies that are listed on Nigerian exchange group. The study has mixed results. Human capital efficiency (HCE) has significant and positive effect on return on equity(ROE). This implies that most insurance companies in Nigeria are committedto investing in their staff in order to enhance profitability. On the contrary, structural capital efficiency (SCE) and capital employed efficiency (CEE) has no significant effect on return on return on equity (ROE). This implies that insurance companies in Nigeria did not invest much in structural capital as well as capital employed, and as such, they need to invest adequately.

Findings of this study revealed that intellectual capital has minimal effect on financial performance of insurance companies in Nigeria. This implies that intellectual capital is not the only factor that predicts the financial performance of insurance companies in Nigeria. For instance, board size, capital structure, and audit committee can influences financial performance of insurance companies in Nigeria. The study also revealed that intellectual capital does not have much influence on the financial performance of listed insurance companies in Nigeria

Recommendations

In view of the findings of this study, the following recommendations are considered;

1. International Financial Reporting Committee (IFRC) to develop standard that will make intellectual capital reporting compulsory in the financial statement in order to enhance financial reporting quality and performance within the context of satisfying the information need of stakeholders.

2. There is need for management of insurance companies in Nigeria to invest more in intellectual capital instead of the traditional factors of production, such as training, enhanced welfare package etc in order to improve financial performance on the long run.

3. Investments in human capital should be capitalized. Human capital is made up of employee costs which include salary, training and staff development, pension contribution and others.

References

Akinjare, Y.S., Idowu, M.A., & Sule, T.O. (2019).The impact of human resource accounting on the performance of Nigerian firms. *International Journal of Social and Management Sciences, 7*(1), 2141-4025.

Anuonye, N.B. (2016). Effect of intellectual capital on return on assets of insurance firms in Nigeria. *Global Journal of Management and Business Research,7*(2), 41-52.

Apiti, C.U., Ugwoke, R.O., & Chiekezie, N.R. (2017). Intellectual capital management and organizational performance in selected food and beverage companies in Nigeria. *International Journal of Advanced Scientific Research and Management,2*(1), 47-58.

Buallay, A.M. (2017). The relationship between intellectual capital and firm performance. *International Journal of Economics*, *1*(1),22-49.

Chukwu, G.J., Ugo, C.C., & Osisioma, B. C. (2019).Market valuation of human capital in Nigerian banks.*International Journal of Academic Research in Accounting, Finance and Management Sciences,9*(1), 21-29.

Ezejiofor, R.A., John-Akamelu, R.C., & Iyidiobi, F.C. (2021).Appraisal of human resource accounting on profitability of corporate organization.Journal of *Economics, 6*(1), 1-10. .

Ezekwesili, T.P., & Ezejiofor, R.A. (2022). Human capital investment and financial performance: A study of deposit money bank in Nigeria.*African Journal of Business and Economic Development*, *2*(7), 20-29.

Ezenyilimba, E., Ezejiofor, R.A., & Afodigbueokwu, H.E. (2019).Effect of total quality management on organizational performance of deposit money banks in Nigeria. *International Journal of Business and Law Research, 7*(3), 15-28.

Godwin, E.O., & Babale, S. (2018). Impact of intellectual capital on financial performance of listed Nigerian oil marketing companies. *Journal of Information and Knowledge Management, 8*(9), 13-27.

Ihendinihu, J.U., & Onyinyechi, O.C. (2017). Human resource accounting and financial performance of firms in Nigeria: Evidence from selected listed firms on the Nigeria stock exchange.*International Journal of Interdisciplinary Research methods*, *2*(3), 25-33.

Imeokparia L., & Oyinloye, J.B. (2020).Effect of human capital investment on financial performance ff deposit money banks In Nigeria. .*Journal of Social Sciences. 10*(3), 1595-1738.

Jian, X., & Binghan, W. (2019). Intellectual capital and performance of the textile industry in emerging markets: A comparison with China and South Korea. *International Journal of Sustainability and Development, 11*(8), 1-16.

Juan, B. (2019).Intellectual capital and performance of the textile industry in China and South Korea. *Journal of Intellectual Capital*, *4*(1), 128-119.

Lambe, I., Orbunde, B., &Ojeh, P. (2022).Effect of human capital resource on financial performance of listed oil and gas firms in Nigeria.*International Journal of Accounting and Finance, 2*(1), 235-247.

Manukaji, I.J., Osisioma, B.C.,&Okoye, P.V.C. (2019). Effect of human resource development on performance of quoted companies in Nigeria. *Journal of Accounting and Financial Management*, *5*(3), 229-241.

Michael, C.S.W., Stephen, C.Y., & Anthony, C.T. (2015). Impacts of intellectual capital on profitability: An analysis on sector variations in Hong Kong. *Journal of US-China Public Administration, 12*(8), 214-226.

Mutalib, A., Hafiz, M., & Hairul, A. (2017). Determination of human capital disclosure in the post IFRS regime: An examination of listed firms in Nigeria. *Malaysian Accounting Review, 16*(2), 1-20.

Nasif, O., Sinan, C., & Murad, K. (2017). Intellectual capital and financial performance: A study of the Turkish banking sector. *Borsa Istanbul Review, 17*(3), 190-198.

Ndum, N.B., & Oranefo, P. (2021). Human resource cost and financial performance of quoted brewery firms in Nigeria. *International Journal of Innovative Finance and Economics Research,9*(2), 73-84.

Nwaiwu, J. N., & Joseph, B. (2021). Human resources cost disclosure and quoted performance of upstream oil and gas firms in Nigeria. *International Journal of Integrated Education, 4*(5), 174-196.

Nwaiwu, J. N., & Aliyu, A.S. (2018).Intellectual capital reporting and measures of financial performance of companies in Nigeria.*International Journal of Advanced Academic Research and Financial Management*, *4*(2), 45-53.

Nwaiwu, J.N., & Amos, C.A. (2018). Audit control and financial performance in Nigeria.*Journal of Accounting and Finance, 12*(2),32-45.

Ofor, T.N., & Okeke, O.N. (2022). Intellectual capital and corporate performance of quoted consumer goods manufacturing companies in Nigeria. *Asian Journal of Economics, Business and Accounting, 22*(3),28-51.

Ofurum, C.O., & Aliyu, A.S. (2018).Intellectual capital component and financial performance of quoted banks in Nigeria. *International Journal of Advanced Academic Research and Financial Management, 4*(2), 25-46.

Okafor, U.I., Ohachosim., C.I., & Oji, R.N. (2022). Expenditure in human resources and financial performance of quoted manufacturing companies in Nigeria. *Journal of Economics and Business Management,* 5(2), 48-57.

Oko, J.O., Onodi, B.E., & Tapang, A.T. (2018).Effect of intellectual capital management on revenue generation of listed commercial banks in Nigeria.*Journal of Accounting and Financial Management*, *4*(6), 56-81.

Oko, S.U. (2018). Human asset accounting and its impact on the performance and financial position of firms: A study of selected companies. *Account and Financial Management Journal*,*3*(8), 103-117.

Okoye, P.V.C., & Ifeukwu, I.A. (2021). Human resource cost and financial performance of quoted brewery firms in Nigeria. *International Journal of Advanced Academic Research, 7*(9), 88-99.

Oluka, N., & Ohaka, J. (2020). Training cost and financial performance nexus: Sector analysis of quoted manufacturing firms in Nigeria. *Research Journal of Finance and Accounting, 10*(8), 55-67.

Omesi, I. (2018). Effect of financial leverage on the performance of firms in the cement industry in Nigeria: A study of Dangote cement company limited (2009-2013). *Proceedings of the International Conference on Research and Development*, *12*(1), 45-55.

Omodero, C.O. Alpheaus, O.E.,&Ihendinihu, J.U (2017). Human resource costs and financial performance of firms in Nigeria: Evidence from selected listed firms in Nigerian. *International Journal of Interdisciplinary Research Methods,* 3(4),14-27.

Omotayo, F.O., &Omiunu, O.G. (2019). Intellectual capital management and organizational performance of small and medium enterprises in Oyo state, Nigeria. *International Journal of Learning and Intellectual Capital, 8*(3), 29-37.

Onipe, A.Y. (2021). Intellectual capital management and financial competitiveness of listed oil and gas firms in Nigeria. *Journal of Management Science, 12*(1), 86-96.

Onyekwelu, C.O., & Ironkwe, U.I. (2021). Human resource accounting and corporate financial performance of quoted insurance companies in Nigeria. *Research Journal of Management Practice,7*(2*),* 82-94.

Onyekwelu, U.L., Okoh, J.I., & Iyidiobi, F.C. (2017).Effect of intellectual capital on financial performance of banks in Nigeria.*European Journal of Accounting, Auditing and Finance Research,5*(2), 28-47.

Oshoke, A., Onutomaha, A. (2019). Financial reporting and tax issues in Nigeria.*Journal of Taxation and Economic Development, Chartered Institute of Taxation of Nigeria, 18*(1), 34-44.

Prakash, P., Igbal, T.H., Jennifer, M.Q., & Nympha, R.J. (2018). Capital structure and financial performance of banks. *International Journal of Applied Business and Economic Research,15*(23), 45-64.

Sebestová, J.D. &Popescu, C.R. (2022).Factors influencing investments into human resources to support company performance. *Journal of Risk Financial Management,2*(4), 15-19.

Shafi'u, A.K., Noraza, M.U., & Saleh, M.B. (2017).The impact of intellectual capital on the financial performance of listed Nigerian food products companies.*Journal of Accounting and Taxation,9*(11), 147-160.

Tarsono, O., Ardheta, P.A., & Amriyani, R. (2019).The influence of net premium growth, claim ratio and risk-based capital on the financial performance of life insurance companies.*Advances in Economics, Business and Management Research, 1*(7)*,* 65-68.

Ulum, I., Ghozali, I., &Purwanto, A. (2014). Intellectual capital performance of Indonesian banking sector: A modified VAIC (M-VAIC) perspective. *Asian Journal of Finance and Accounting,6*(6), 103-123.

Ugwuanyi, U.B., & Onyekwelu, U.L. (2018). Relevance of intellectual capital on firms' revenue and market valuation of quoted information and communication technology industry in Nigeria. *Journal of Economics and Finance,3*(9), 1-19.

Uzoamaka, E.C., Nweze, A.U. (2015). The effect of human capital investment on corporate performance: A cross sectional study of selected quoted companies in Nigeria. *ICAN Journal of Accounting and Finance, 2*(7), 156-174.