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Intellectual Capital and Value Creation of Listed Insurance Companies in Nigeria: Is Innovation Capital Matter?

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Abstract:

The shift from traditional economy to knowledge base economy globally makes the study of intellectual capital as it relate to creation of value becomes imperative. Therefore, this study aimed at investigating the impact of intellectual capital on the value creation of the listed insurance companies in Nigeria for the period of 2009-2018. The listed insurance companies in Nigeria are seventeen (17) as at 31st December, 2018, out of which a sample of fourteen (14) companies were selected. The study employed correlation research design and data were analyzed with the aid of multiple regression technique. Using 140 firm year panel observations, fixed effect GLS regression was used with a view to control for heteroscedasticity observed. The findings revealed that Human capital and innovation capital are negative and significantly related with value creation of the listed insurance companies in Nigeria. However, structural capital is found to be positive and significantly related with the value creation of the listed insurance companies in Nigeria. Therefore, the study recommends amongst others that the Board of Directors responsible for the strategic decision of the corporate entities should formulate policies viable enough to trigger more investment on the structural capital as it has a potential of increasing corporate value. However, management should invest less on Human capital and research and development as they lack potentiality of enhancing value creation and device other means of boosting the value of their companies.

Keywords: Intellectual capital, human capital, insurance companies, value creation, innovation capital

1. Introduction

In today's economy intangibles assets are the major drivers of wealth and growth. With emergence of the new economy it is a known fact that the value creation depends far less on their physical assets than on their intangible ones. These assets, often described as intellectual capital, are being recognized as the foundation of individual, organizational and national competitiveness in the twenty-first century (Wigg, 1997; Bounfour & Edvinsson, 2005). As noticed by Pike, Rylander and Roos (2002), 'as the business society is developed, the key step in value creation has ascended an intellectual staircase'.

Intellectual capital has been identified as a set of intangibles (resources, capabilities and competences) that drives the organizational performance and value creation (Roos & Roos, 1997; Bontis, 1998; Bontis, Keow & Richardson, 2000). This suggests causal relationships between intellectual capital and organizational value creation (Marr & Roos, 2005). However, intangible assets seldom affect performance directly. Instead, they work indirectly through relationships of cause and effect (Kaplan & Norton, 2004).

Despite the tremendous theoretical improvement during the last years, intellectual capital phenomenon requires theory and research methodology that enhances the integration of theory construction and theory testing. Research in intellectual capital is actually, at critical cross-roads with increased emphasis on developing theoretical concepts and testing relationships guided by such concepts. It is vital to consolidate some findings, namely arrive at a set of operational measures that meet minimal criteria of measurement (Maria & Jorge, 2005).

Intellectual capital that has been theoretically raised in the last few years throughout the world is seen as one of the most value-creating resources in entrepreneurial growth of firms, hence the need to develop and manage intellectual capital has become a serious obligation in the national level and in the business arena in such a way that the emergence of knowledge-based economy can be observed (Iranmahdi, Moeinaddin, Shahmoradi & Heyrani, 2014).

However, the traditional accounting has been used over 500 years ago as the basis for the current financial report which fails to adapt to the changes in the economy, especially in knowledge-asset reporting requirements (Widyaningdyah, 2008); this is because the financial statements are not able to present the relevant information regarding the amount of the value of the intangible asset so that it can influence corporate policy. Failure to report knowledge-assets by the traditional accounting can be seen from the phenomenon that occurs in some large companies such as knowledge-

based Microsoft, Coca Cola and Intel, which are not carrying an intangible asset on their balance sheet that there is a very significant difference between the book value with the market value of these companies (Sawarjuwono & Augustine, 2003). The existence of a significant difference in value can be concluded that the current financial statements are failing to reflect the true value of the company so it cannot be used in decision making (Kuryanto & Muchamad, 2008).

The limitations of financial statements in explaining the value of the company pointed to the fact that the source of economic value is no longer in the form of raw material production, but the creation of intellectual capital (Ulum, 2008). The greater the value of intellectual capital, the more efficient use of capital of the company, thus creating added value for the company (Randa & Ariyanto, 2012). Sunarsih and Mendra (2012) also add that intellectual capital is a major resource with huge potential to improve the performance and market value of the company.

Regrettably, measuring intellectual capital is what is giving researchers difficulty. In view of this, Pulic (1998) has developed the most popular method for measuring of intellectual capital, the Value Added Intellectual Coefficient (VAIC). VAIC is a method used to measure the efficiency of the added value derived from the company's intellectual abilities. The main components of VAIC are; physical capital, human capital, and structural capital (Pulic & Kolakovic, 2003). The use of Pulic models (VAIC) is carried out by several researchers. For instance, Ahmad, Shamari, Ibrahim and Durra (2016) discovered a positive relationship between Intellectual and performance of Kuwaiti telecommunication, Hamdan (2018) came up with evidences that support the relationship between intellectual capital and accounting-based performance. Also Smriti and Das (2018), their empirical analysis showed that intellectual capital components are important contributors to firm sales growth and market value. Sardo, Serrasqueiro and Alves (2018), their findings indicated that the interaction between intellectual capital components enhances the hotel financial performance, Ozkan, Cakan and Kayacan (2017) found that intellectual has significant positive impact on the financial performance of Turkish banks. Furthermore, Chen, Cheng and Hwang (2005) found that there is positive relationship between the intellectual capital and the market value of the company's performance. In Indonesia, the results of Ulum (2008) showed that there was significant effecting intellectual capital on the financial performance of the company. Also, Son (2012) was able to prove the existence of a significant positive effect between the values of the intellectual capital of the company. These findings provide evidence that the model is widely accepted and used by many researchers all over the globe, hence justify its adoption in this study. This paper contributes to the literature in the following aspects. First, it extends the understanding towards the role of intellectual capital in the field of financial institution (Insurance) by using a reliable source of financial information. Second, instead of using an aggregate measure comprises the three (3) components of intellectual (Human capital, Structural capital and capital employed) as proposed by Ante Pulic, this study examines the explanatory power of only the intangible components (Human capital and Structural capital) by excluding the capital employed. This will improve the enthusiasm of managers in determining the absolute effect of intellectual capital on value creation of listed insurance companies in Nigeria. Finally, the research draws attention to research activities within this industry and incorporate a rarely used intellectual capital (IC) component (Innovation) to clarify its relationship with value creation. This is especially evocative to the present debate of whether to write off or capitalize R&D expenditure.

The aim of this paper is to empirically examine the impact of intellectual capital on the value creation of listed insurance companies in Nigeria. The specific objectives of the study are;

- To examine the impact of Human capital on the value creation of listed insurance companies in Nigeria
- To determine the effect of Structural capital on the value creation of listed insurance in Nigeria
- To investigate the impact of Innovation capital on the value creation of listed insurance companies in Nigeria

Based on these objectives, the following hypotheses are formulated;

- Human capital has no significant impact on the value creation of listed insurance companies in Nigeria
- Structural capital has no significant effect on the value creation of listed insurance companies in Nigeria
- Innovation capital has no significant impact on the value creation of listed insurance companies in Nigeria

This paper is organized in three sections. First we briefly introduce the theoretical and conceptual framework for IC and prior related research are reviewed. Research propositions, sample selection and empirical results are provided in the next. In the last section conclusions and recommendations are discussed.

2. Literature Review

Saengchan (2008) examines the role of intellectual capital in creating value in the Banking Industry using data extracted from the financial report of Thailand Banks from 2000 to 2007. He found that there is a relationship between intellectual capitals with Bank performance. Mosavi, Nekouezadeh and Ghaedi (2012) investigates the relationship between intellectual capital, market value and financial performance. The study uses 80 Iran companies listed on the Tehran stock exchange from 2006 to 2010. Measures value creation as market to Book value; they found that there exist no relationship between intellectual capital (VAIC) and most of its components with performance. However, they discovered that there is relationship between intellectual and human capital only. Furthermore, Huang and Wang (2008) empirically studied the Effects of Economic Value Added and Intellectual Capital on the Market Value of Firms. The research sample comprised 14 firms in traditional industries (42 observations) and 23 firms in the electronic industry (67 observations), with a total of 37 firms (109 observations) listed on the Thaiwan stock exchange market. The findings revealed that residual income based on EVA is no better than that based on current GAAP in its capacity to explain variations in a firm's market value. Moreover, they also found intellectual capital does provide incremental information for the value creation

Ahangar (2011) examines the relationship between intellectual capital and financial performance using a 30 year data extracted from a famous Iranian company's financial statements. Analysis was done using multiple regression

techniques that captures the three components of intellectual capital (Human capital, Structural capital and Physical capital). The findings from the analyses indicate that performance of a company can be explained by their intangible assets (intellectual capital). Daud and Yusoff (2010) in their paper titled 'Knowledge management and firm performance in SME's: the role of social capital as mediating variable' deduced the following: (i) knowledge management processes influence social capital positively; (ii) social capital enhances firm performance; and (iii) social capital is a mediator between knowledge management processes and firm performance. They used 289 returned questionnaire from the 833 samples of small and medium-sized enterprises for the regression.

In the same vein, Ismail and Abdul Kareem (2011) examines the effect of Intellectual Capital on the Financial Performance of Banks in Bahrain during the period of 2005 to 2007. The results support the hypothesis that intellectual capital has a positive impact on the financial performance of banks in Bahrain. In addition, when VAIC is classified into its three major components, they find that financial performance is positively associated with capital employed efficiency (CEE) and human capital efficiency (HCE). However, their findings fail to find any significant association between structural capital efficiency (SCE) and financial performance of the banks. Marimuthu, Arokiasamy and Ismail (2009) studied the impact of Human capital development on the firm performance: evidence from developmental economics. This paper explored the current literature on human capital and its impact on firm performance. The conceptualization of human capitals is closely linked to some fundamentals of economics and firm performance. They claim that the literature they reviews show that there are reasonably strong evidences to show that the infusion of 'human capital enhancement' in organizations promotes innovativeness and greater firm performance. Studies also clearly substantiate the fact that financial performance is positively impacted through the consideration of human capitals.

Moreover, Maria and Jorge (2005) investigate the link between the Intellectual Capital and Value Creation with evidence from 53 Portuguese Banks. Using PLS for the analysis they found that there is a significant positive relationship between intellectual components (Human, Structural and Relational capital) with firm performance. Though, the study did not use VAIC to test the combined effects of intellectual capital on value creation. Appuhami (2007) in his paper 'The Impact of Intellectual Capital on Investors' Capital Gains on Shares: An Empirical Investigation of Thai Banking, Finance & Insurance Sector' To investigate the impact of corporate value creation efficiency on investors' capital gains, the author used the data collected from listed companies in Thailand's stock market and Pulic's (1998) Value Added Intellectual Coefficient (VAIC) as the measure of intellectual capital and a developed multiple regression model. The empirical research found that firms' intellectual capital has a significant positive relationship with its investors' capital gains on shares. The findings enhance the knowledge base of intellectual capital and develop a concept of intellectual capital in achieving competitive advantage in emerging economies such as Thailand's.

Chang and Hsieh (2011) looked in to the relationship between Intellectual Capital and Value Creation and whether Innovation Capital a Missing Link? Taking an intellectual capital (IC) perspective, the paper considers R&D investment and its impacts on the companies' operating, financial, and market performance. To investigate the different components of intellectual capital using financial measures, a modified Value Added Intellectual Coefficient (VAICTM) is used for analysis. Empirical study is conducted on 367 Taiwan semiconductor companies using Pearson correlation and linear multiple regression whereas financial information is generated from a third party database from Taiwan Economic Journal. The result shows that a company's IC in general has a negative impact on its financial and market performance. However, the association between innovation capital which captured by R&D expenditure efficiency (RDE) and companies' operating, financial and market performance is significant. The results provide a different perspective apart from extant research. Iranmahd, Moeinaddin, Shahmoradi and Heyran (2014) examine the Effect of Intellectual Capital on Cost of Finance and Firm Value. Collecting data from 84 firms listed on Tehran stock exchange for an eight-year period. In order to analyze data, Pearson correlation, univariate and multivariate regressions, and Z Wang test were also performed. Results showed that the value added of capital applied, value added of intellectual capital, and value added of intellectual capital coefficient negatively influenced weighted average cost of capital, yet they had no effect on enterprise value.

Ahmad and Mushraf (2011) investigate the relationship between Intellectual capital and Business Performance. 320 questionnaires were distributed to managers of Iraqi banks but only 191 were filled and returned and the analysis was based on the 191 respondent's responses. SPSS Version 17.0 was used to run the Pearson correlation and regression for the analysis. The result of this study emphasize that there is positive relationship between intellectual capital (consists of customer capital, human capital, structural capital, relation capital) and businesses performance (consists of innovation, rate of new product development, customer satisfaction, customer retention and operating costs). Gan and Saleh (2008) studied the effect of Intellectual Capital on Corporate Performance of Technology-Intensive Companies in Malaysia. This paper examines the association between Intellectual Capital (IC) and corporate performance of technology-intensive companies (MESDAQ) listed on Bursa Malaysia by investigating whether value creation efficiency, as measured by Value Added Intellectual Capital (VAIC), can be explained by market valuation, profitability, and productivity. Correlation and regression models were used to examine the relationship between corporate value creation efficiency and firms' market valuation, profitability and productivity. The findings from this study show that technology-intensive companies still depend very much on physical capital efficiency. The study also suggests that individually, each component of the VAIC commands different values compared to the aggregate measure, which implies that investors place different value on the three VAIC components. The results also indicate that physical capital efficiency is the most significant variable related to profitability while human capital efficiency is of great importance in enhancing the productivity of the company. This study concludes that VAIC can explain profitability and productivity but fails to explain market valuation.

Mohammad and Ismail (2009) examine Intellectual Capital Efficiency and Firm's Performance using Malaysian Financial Sectors. The results were based on the data taken from 18 companies under financial sector for the year 2007. It was found that the banking sector relied more on intellectual capital followed by insurance companies and Brokerage

firms. It was also found that intellectual capital has significant and positive relationships with company's performance measured by profitability and Return on Assets (ROA). Jayaraj and Ashrafali (2010) investigate the Impact of Intellectual Capital on Firm Performance Using VAIC Approach. The data of this research were obtained from the poves data base which a normalized database of the financials covering 1,500 data items and ratios per company. The Human Capital was measured using ante pulic's value added intellectual coefficient (VAIC) which comprises of structural capital, human capital and financial capital efficiency). Performance was measured using ROCE, ROA, EPS and MB. By using multiple regressions, it was discovered that intellectual capital has effect on the performance. Wang (2011) look at Intellectual Capital and Firm Performance. The study use the method of pooling data OLS, Panel data regression to test the relationship between intellectual capital and firm performance from 2001 to 2007. The variables included of customer capital, human resource capital, structure capital from independent and return on asset, market price to book value and total productivity from firm performance. As the relationship between structure capital and firm performance is insignificant other variables were found to be positive and significant with firm performance. The paper separated two group depended by the R & D expenditures. Continue to investigate the influence of intellectual capital on firm performance which was also found to be positive.

Petty, Cuganesan, Finch and Ford (2008) examine the intellectual capital and valuation: challenges in the voluntary disclosure of value drivers. From a conceptual perspective, they claimed that there has been little support by the accounting profession to recognize the value of intellectual capital or adopt a common disclosure framework. There has also been very little progress by firms in extending their voluntary reporting frameworks, beyond just rhetoric, and attempting to quantify their intellectual capital. This paper will critically evaluate the challenges faced by firms in disclosing the elements and value of their intellectual capital to the market. Mehralian, Rasekh, Akhavaand Sadeh(2012) studied the Impact of Intellectual Capital Efficiency on Market Value: An Empirical Study from Iranian Pharmaceutical Companies. Using the VAIC developed by Ante Pulic (2000). Six-year data was obtained from audited financial reports in Iranian Exchange Stock, and used to calculate human capital, structural capital, and capital-employed efficiency of pharmaceutical companies. The results obtained using correlation and multiple regression analysis failed to support the impact of IC on market value and then they concluded that practically, IC efficiency can be applied as a benchmark and strategic indicator to assess firm value.

3. Methodology

The population of the study constitutes all the seventeen (17) listed insurance companies in Nigeria as at 31st December, 2018. However, the study employs some criteria such that, any firm that is not consistently on listing of the Nigerian stock exchange throughout the period of the study was filtered out. Secondly any firm whose data was not accessed in any year of the period of the study was filtered out automatically arriving at a total of fourteen (14) listed insurance companies. This study analyzed quantitative data extracted from the audited annual reports and accounts of the fourteen (14) sampled listed insurance companies in Nigeria using multiple regression models with aid of STATA package over the period of ten (10) years from 2009 to 2018.

3.1. Variable Definition, Measurement and Model Specification

3.1.1. Independent Variables

Using Modified Value Added Intellectual Coefficient (MVAIC) method, three IC components were selected to measure all the independent variables under consideration.

A basic tenant for VAIC is to observe resource efficiency in creating value for the firms. The principle is to calculate the value added (VA) of a firm by subtracting input from output, excluding labor expenses from the input. In financial terms, it is presented as:

$$VA = GM - sgaExp. + LExp. = \text{Operating Income} + LExp.$$

Where VA is value added; GM is gross margin; sgaExp.: selling, general, and administrative expenses; LExp.: labor expenses that Pulic (2000b) calls human capital.

According to Pulic, the value of human capital (HC) and structural capital (SC) is described by the labor expenses and the difference between VA and HC. From this description, HC and SC are denoted as follows:

$$HC = LExp.$$

$$SC = VA - HC$$

Pulic states that human capital and structural capital are reciprocal. The less the participation of human capital, the more structural capital is involved. The study sets out to examine the efficiency of the three IC subcomponents and one indicator (Dependent variable) as presented in the followings:

$$\text{Human Capital Efficiency HCE} = VA / HC$$

$$\text{Structural Capital Efficiency SCE} = SC / VA$$

$$\text{Innovation Capital Efficiency RDE} = R\&D \text{ expenditure} / \text{Book value of common stock.}$$

3.1.2. Dependent Variable

The Dependent variable is value creation proxy to Market-to-Book value in this study where:

Market-to-book value ratio of equity (M/B) is the total market capitalization to book value of net assets:

- Market value of common stock = Number of shares outstanding x Stock price at the end of the year
- Book value of common stocks = book value of stockholders' equity

Therefore, the Model of this study is presented as;

$$M/Bit = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 RDE_{it} + \varepsilon_{it}$$

Where:

M/B= Market to Book value

HCE= Human capital efficiency

SCE= Structural capital efficiency

RDE= Research and development efficiency

β_1 – β_3 are the coefficients of the parameter estimates.

i : panel data

ε : the error term.

3.2. Diagnostic Analysis of the Data

After running OLS regression, Hetttest was found to be significant. This implies the existence of heteroscedasticity problem. As a result, fixed and random effects were conducted. Then, to find out which of the model fit the panel, Hausman specification test was conducted. The Hausman result determines which effect to be interpreted through its P-value (i.e. if Hausman is significant, fixed effect will be interpreted otherwise random effect). The result of the Hausman of this study is significant therefore; fixed effect regression result was interpreted and presented as follows;

4. Result Presentation and Discussion

This section presents and discusses summary of descriptive statistics, correlation and regression results.

Variables	Min	Max	Mean	Std. Dev	N
MB	0.0100	3.4333	2.2105	1.0895	140
HCE	0.0200	54.83	12.7201	21.1845	140
SCE	0.1173	0.2599	0.0063	0.0554	140
RDE	0.0051	2.4663	0.4755	0.4906	140

Table 1: Summary of Descriptive Statistics

Source: STATA output (Appendix)

Table 1 indicates that the market-to-book value (MB), has a minimum and maximum values of 0.0100 and 3.43, mean and standard deviation values of 2.2105 and 1.0895. The mean value depicts that on the average, the insurance companies created a value of 22% approximately for the period of this study. The standard deviation value depicts how the MB moves between the minimum and the maximum value and a 1.0895 standard deviation implies the lower rate of deviation from the mean. The table further indicates that Human capital efficiency (HCE), has a minimum and maximum values of 0.0200 and 54.83, mean and standard deviation values of 12.7201 and 21.1845. The mean of 12.7201 implies that on the average, the listed insurance companies in Nigeria added a value of 12.7% from investing in Human capital. The standard deviation values depicts how the Human capital, HCE moves between the minimum and the maximum value and the standard deviation of 21.1845 implies that there is a wide dispersion of numbers from their mean because the standard deviation is higher than the mean.

The table also shows that the mean of the structural capital efficiency (SCE) of the sampled listed insurance companies 0.0063 with standard deviation of 0.0554, and minimum value of 0.1173 and 0.2599 as the maximum value. This implies that the value added of the insurance companies in terms of firm SCE is on average 11%, and the standard deviation value indicates that the sampled insurance companies SC deviates from its mean value from both sides by 5%, implying that there is a dispersion of the data from the mean because the standard deviation is higher. Finally, the minimum and maximum values of Research and development efficiency (RDE) are 0.0051, 2.4661 respectively. The mean and standard deviation values are 0.4755, 0.4906. This means that value added to the companies from RD is averaging 48% and indicates a slide deviation of the numbers to the mean value as the standard deviation value is a little higher than the mean value.

Variables	MB	HCE	SCE	RDE
MB	1			
HCE	-0.9725***	1		
SCE	0.2218***	-0.2201***	1	
RDE	0.0808	-0.1405*	0.1591*	1

Table 2: Summary of Correlation Matrix

Source: Correlation Matrix Result Using STATA

***.Correlation Is Significant at 0.01 Levels (2-Tailed)

**Correlation Is Significant at 0.05 Levels (2-Tailed)

*.Correlation Is Significant at 0.10 Levels (2-Tailed)

Table 2 depicts that Human capital efficiency (HCE), is negative and significantly related with the performance (MB) of sampled listed insurance companies in Nigeria, while Structural capital (SCE) and Research and development (RDE) are positive and significantly associated with the performance (MB) of sampled listed insurance companies in Nigeria.

However, the relationship between the variables themselves was found to be negative and their coefficient is less than 0.5 but this may not be enough to surmise that multicollinearity does not exist among the explanatory or exogenous variables of the study unless the variance inflation factor and tolerance values are comparatively beyond the established rule of thumb. Thus, the tolerance value and variance inflation factor (VIF) are advanced measures for assessing the harmful multicollinearity among the explanatory variables. The variance inflation factor and tolerance values are determined with the use of STATA and were found to be concurrently smaller than ten and one respectively, indicating the absence of harmful multicollinearity (Table 4.3). This therefore, indicates the adequacy of fitting the model of the study with three independent variables.

Variables	Co-efficients	t-Statistics	p-value	VIF/Tolerance value
Constant	2.8671	50.02	0.000	
HCE	-0.0451	-12.63	0.000	1.06/0.9401
SCE	1.0786	1.94	0.054	1.07/0.9348
RDE	-0.1890	-3.79	0.000	1.04/0.9630
R ²			0.9465	
F			65.78	
F-Sig			0.000	

Table 3: Summary of Regression Result
Source: STATA OUTPUT

From Table 3 above, the overall R² value is 0.9465 which indicates that the independent variables selected into the model explain the variation in the performance to the extent of ninety five percent (95%) approximately. Thus, this signifies that 95% of change in the market to book value amongst the selected listed insurance companies in Nigeria is as result of changes in Human capital efficiency, structural capital efficiency and Research and development efficiency. This further implies that only 5% changes in the market to book value caused by factors outside the model which means that the model has good explanatory power. The table also indicates that the F-Statistics is 65.78 which is significant at 1% level of significance from the F- probability value of 0.000. This further signifies that the model built for the study is well fitted.

From Table 3, it can be clearly seen that Human capital efficiency (HCE) has a p-value of 0.000 (which is significant at 1% level) and -0.0451 as the coefficient value. This signifies that Human capital efficiency is negative and significantly related in value creation of the listed insurance companies in Nigeria. This implies that for every one unit increase in investing in the Human capital by the insurance companies, their performance (MB) will reduce by 0.0451 kobo. This provide an evidence of failing to reject hypothesis one of the study which state that Human capital efficiency has no significant impact on the value creation of listed insurance companies in Nigeria.

Further, Table 3 depicts that Structural capital (SCE) has a coefficient value of 0.0786 and p-value of 0.054 which is significant at 10% level of significance. This signifies that SCE is positive and significantly associated with value creation of listed insurance companies in Nigeria. This further implies that SCE and MB move in the same direction, that is, improvement in the SCE leads to corresponding increase in the value creation (MB) of the listed insurance companies in Nigeria. This result is not surprising as it in tandem with the priori expectation of the study that improvement in the structural capital efficiency should lead to an increase in the value of the listed insurance companies in Nigeria. This provide an evidence of failing to reject hypothesis two of the study which state that structural capital efficiency has no significant impact on the value creation of listed insurance companies in Nigeria.

Finally, Table 3 indicates that research and development efficiency (RDE) has p-value of 0.000 with a coefficient of -0.1890. This signifies that RDE is negatively and significantly related with value creation at 1% level of significance (from the p-value of 0.000). This implies that for every one unit increase in the value added by the RDE, performance (MB) of the listed insurance companies in Nigeria stands to decrease by 18.9%. This result does not support the hypothesis three of the study which stated that RDE has no significant impact on the value creation of listed insurance companies in Nigeria. Hence, the study rejects the hypothesis three of the study.

5. Conclusion and Recommendations

Based on the forgoing, Human capital efficiency and innovation capital (RDE) are related to value creation but negatively. Hence, the study concludes that they cannot contribute to the enhancement of value creation of the listed insurance companies in Nigeria because the negative implies inverse relationship which is contrary to a priori expectation of the study. In contrast, structural capital is positive and significantly related with value creation of the listed insurance companies in Nigeria. Therefore, is concluded that SCE is an important factor that could drive value to the listed insurance companies in Nigeria. Therefore, the study recommends amongst others that the Board of Directors which is responsible for the strategic decision of the corporate entities should formulate policies that will improve the investment on the structural capital as it has a capacity of increasing value. As for the Human capital and innovation capital, the Board and management should invest less on Human capital and research and development as they do not have potentiality of enhancing value creation and device other means of increasing the value of their companies.

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