



ENTREPRENEURIAL JOURNAL



MANAGEMENT SCIENCES (EJMS)

A publication of
College of Management Sciences;
Al-Hikmah University, Ilorin, Nigeria

Vol. 3 No. 1, June 2014

Entrepreneurial Journal of Management Sciences (EJMS)

ENTREPRENEURIAL JOURNAL
OF
MANAGEMENT SCIENCES
(EJMS)

A Publication of
College of Management Sciences
Al-Hikmah University, Ilorin,
Nigeria.

ISSN 2276-9471
Volume 3, No. 1 (2014)

Takbir Prints
Itakure Junction, Ilorin
08052178834, 08184582020

Editorial Team

EDITOR-IN-CHIEF

Prof. (Mrs.) S.L. Adeyemi
University of Ilorin, Ilorin

Deputy Editor-in-Chief

Dr. A. Medupin
Al-Hikmah University Ilorin, Ilorin

Editorial Advisers

Prof. A Jimoh
University, Ilorin, Ilorin

Prof. T.O. Adewoye
Ajayi Crowther University, Oyo

Prof. I.B. Bello Imam
Al-Hikmah University, Ilorin

Prof. I.O. Taiwo
University of Ilorin, Ilorin

Prof. T.O. Asaolu
Obafemi Awolowo University, Ile-ife

Dr. M.A. Aremu
University of Ilorin, Ilorin

Dr. (Mrs) E. F. Oloni
Al-Hikmah University, Ilorin

Dr. W. Ibrahim
Al-Hikmah University, Ilorin

Business Manager:

Mr. Babatunde K. Alasinrin
College of Management Sciences,
Al-Hikmah University, Ilorin
alasinrin@alhikmah.edu.ng

CONTENT	Page
1. A multivariate analysis of remittances-economic growth nexus: New evidence from Nigeria OSHOTA, S. Olalekan, BADEJO, A. Abdulazeez	1-14
2. <u>Differential Changes of Nigerian Banks' going concern values:</u> the relevance of audit expectation gap Abdulai Agbaje Salami, Ahmad Bukola Uthman, Zayyad Abdul-Baki	15-29
3. The Influence of Intellectual Capital Efficiency on Companies' Financial Performance 30-46 Ramat Titilayo Salman, Taiwo A. Olaniyi, Abdulkakar Sadiq Kasum, Temitope Olamide Fagbemi	
4. Tax Evasion, Conditional Cooperation and The Broken Window Semiu Babatunde ADEYEMI, Oladipupo Muhrtala TIJANI	47-61
5. Factors Influencing Voluntary Tax Compliance of Small and Medium Scale Enterprises in Kwara State, Nigeria Fagbemi, Temitope Olamide, Abogun, Segun	62-77
6. Critical Factors for XBRL Application A Case for Semantic Model-Based Digital Financial Reporting Oladipupo Muhrtala TIJANI, Semiu Babatunde ADEYEM	78-90
7. Nigeria's Economic Resource Potentials in Agriculture and Agro- Allied Industries: An Assessment Dr. A.O.Y. Raji	91-107
8. Impact of Effective Communication on Employee Productivity Evidence from Lubcon Limited, Ilorin. Olanipekun Wahid Damilola, Akanni Lanre Fatai, Olalere Waheed Raji	108-118
9. Patterns of growth and structural transformation: The mediating role of Entrepreneurship for future development strategies Oladipupo Muhrtala, TIJANI, Lukman Adebayo, OKE, Abdulkadir Adeola MUSA Tunde Saka ABDULSALAM	119-133
10. Postal Services and Corporate Social Responsibility: Challenges and Prospects for Sustainable Development 134-141 AJIJOLA, Bashiru Amoda	
11. Constraint in the Formation of Business and the Role of External Environment in Nigeria AKANNI, Lanre Fatai, IBIKUNLE, Hassan. O, Olanipekun Wahid Damilola	142-153
12. An Appraisal of Land Administration and Management in Ilorin, Kwara State HASSAN Olanrewaju Abdul	154-163

The Influence of Intellectual Capital Efficiency on Companies' Financial Performance

Ramat Titilayo Salman,^{*}

Taiwo A. Olaniyi[†]

Abdulkakar Sadiq Kasum^{*}

Temitope Olamide Fagbemi^{*}

Abstract: *This study examines the influence of intellectual capital efficiencies on companies' financial performance measured by return on equity (ROE) in Nigerian companies for three years. To this end, annual reports of 25 sampled companies were analysed using Value Added Intellectual Coefficient (VAICTM) as proposed by Public (2004) using SPSS 16 software package. The results show that, relationship exists between intellectual capital components efficiencies and companies' financial performance. Furthermore, structural capital has the highest correlation with companies' financial performance (ROE) and size (asset) of the sampled companies. Therefore, it is recommended that sampled companies should embark on policy that will improve their organizational structural facilities.*

Key words: Human capital, structural capital, capital employed, Value Added Intellectual Coefficient (VAICTM), financial performance, Nigeria

1. Introduction

In a knowledge-based and an increasingly more competitive economy, a company's Intellectual Capital (IC) is a fundamental determinant of its success. Intellectual capital is the combination of knowledge-based assets and intangible assets of a company which includes its patents, brand names, employee's skills, trade secret, technologies and information about consumers and suppliers that has been utilised in order to create wealth by producing a higher value asset (Stewart, 1997). In the last two and half decades, the importance of intellectual capital has increased tremendously specifically in the developed countries. This is because the world at large has experienced a drastic change in the form of emerging wealthy businesses and nations (Arenas and Lavanderos, 2008). Both companies and governments shifted their focuses from tangible assets to intellectual capital (IC) as differentiators for the sustainable competitive

^{*}Corresponding Author (titisalman@yahoo.com)

^{††}Department of Accounting, University of Ilorin, Ilorin.

advantage of businesses and nations (Sarmadi, 2013). The reason for paradigm shift is that IC assets contribute to shareholder value more than tangible assets (Salman, Tayib and Mansor, 2013).

However, traditional financial statements of companies do not reflect true disclosure of intellectual capital. In few instances, traditional intangible assets (e. g. research and development, good will and other internally developed assets) are recognised in the annual accounts of companies, but these assets are defined narrowly (Gallego and Rodriguez, 2005). While on the other hand, modern intangible assets (IC) are not disclosed in companies' annual financial statement thereby making the role of IC in business to be insufficiently understood. Obviously, stakeholders (investors, creditors and financial analysts) will not be satisfied with non-disclosure of IC as this will lead to investors' difficulty of making rational investment decisions (Okwy and Christopher, 2010). Again, non-disclosure of IC in the companies' annual statements will reduce the value of their shares in the capital market. Therefore, it is imperative for companies to measure and report (disclose) their IC activities in their financial statement in order to enhance their performance.

The biggest challenge faced by companies in the knowledge-based era is how to measure its intellectual resources (Salman and Tayib, 2012) and view company IC as the only sustainable source of competitive advantage in business (Salman et al. 2012a; Makki, Lodhi and Rohra, 2009). This shift from traditional measure of company's performance to knowledge-based economy requires companies to maximize value creation from its intellectual capital to succeed, by making use of its strength, weakness, opportunity and threat (SWOT) (Makki and Lodhi, 2009; Roos et al., 2005). This competitive edge is gained through enhancing value creation efficiency from IC components (human creativity, experiences, ability, skill, operational structure, customer and supplier relation channels (Salman, et al. 2013, Ahangar, 2011, Salman, et al. 2012b; Lev, 2001; Edvinsson and Malone, 1997). Against this backdrop, this research work is embarked upon to investigate the influence of intellectual capital efficiency on company's financial performance in Nigeria.

1.1. Significance of Intellectual Capital at Corporate Level

Many companies around the globe adopted intellectual capital managing strategies earlier and were very successful in improving their productivity and efficiency (Makki and Lodhi, 2009). Skandia Insurance Company, the developer of Skandia Navigator had achieved 75% saving in administrative expenses while at the same time enhanced productivity by 400% over a period of six years (Morgan, 1998). Abernathy et al. (2003) estimates that investment

in intellectual capital yields twice returns as compared to the same amount of investment in physical assets. The top ranked 10 Asian companies between the periods of 1995 to 2001 were those companies that create value to their shareholders through intellectual capital (Salamudin et al. 2010). Specifically, these companies' investments are focused on human capital and network effect rather than physical capital (Tseng and Goo, 2005; Makki et al., 2009). Mostly, electronics companies, service companies, technological companies and biochemical do engage more of intellectual capital resources than other companies. For example, Toshiba electronic company achieved 20% higher productivity after adopting intellectual capital management (ICM) strategy in its factory (Fruin, 1997). On the other hand, there are many companies which fold-up due to their inability to manage and nurture their intellectual resources (Antal et al, 1994).

In addition, the Financial Reporting Standard Board formerly the Nigerian Accounting Standard Board (NASB) admits that Nigeria being an emerging country, needs intellectual capital to resuscitate the present status of the companies in the sectors of the economy (Olaofe, 2006). Following the above statement, one can deduce that both the economic managers and government authority of many countries like Nigeria feel that it is inevitable to transform the production-based economy to knowledge-based economy to achieve industrialization strategy in order to improve the pace of economic development.

1.2 Research Objective

This study is based on the argument that IC efficiency influences financial performance through its value creation. The main aim of this study is to examine the influence of IC components (Human Capital Efficiency and Structural Capital Efficiency) efficiencies on companies' performance in Nigeria.

2.0 Review of Relevant Literature

Intellectual capital has been recognized as an important resource for a company to enhance its competitive advantage and at the same time to improve its corporate image in the global market, still there has been a controversial issue of intellectual (intangible) assets reporting on whether it is value relevant to be considered as asset, even though its association with company's expected future benefits is not certain. Recent studies on value relevance of intellectual capital assets include Salman *et al.* (2013); Salman *et al.* (2012a&b); Maditinos *et al.*,

(2011); Chang and Hsieh (2011); Ahangar, (2011); Salamudin *et al.* (2010); Okwy and Christopher, (2010); Appahumi, (2007); Ting and Lean, (2008) and Yalam and Coskun, (2007). These researchers have found intellectual capital to be value relevant in both companies' financial performance and market capitalization using VAIC model.

In a recent study conducted by Salman *et al.* (2013) which examined the interaction between intellectual capital (IC) and financial performance of 50 public listed Nigerian companies provides evidence of the interaction between the two variables. The study further revealed that both human capital efficiency (HCE) and structural capital efficiency (SCE) influenced financial performance of the sampled companies more than capital employed efficiency (CEE). In addition, Salman *et al.* (2012a) investigated the impact of IC on return on assets (ROA) of 20 listed Nigerian Manufacturing companies. The Authors provided evidence on the positive and significant relationship between IC components and ROA of the sampled companies using Value Added Intellectual Coefficient (VAIC) method. Salman *et al.* (2012b) examined 20 listed service companies IC and corporate performance in Nigeria using VAIC method. The result of their findings show there is significant positive correlation among IC components, ROA and Market Value. Also, Maditinos *et al.* (2011) assessed the efficiency performance of IC in relation to financial performance of public listed companies in Greece. The study employed VAIC method, and the result of the study reveals that IC components are significantly correlated with companies' financial performance. In the same vein, Chang and Hsieh (2011) evidenced that IC is associated and has impact on both financial and market performance of Taiwan companies. Ting and Lean (2008) examined IC value added efficiency on financial performance of Malaysia companies and found that IC value efficiency is associated with profitability of sampled companies. Tan *et al.* (2007), using VAIC model on 150 listed companies in Singapore, concluded that IC and companies' performance have positive relationship. Appahumi (2007) investigated the influence of IC components efficiency on capital gain of financial companies (banking, finance and insurance) in Thailand. The findings provide that there is a significant positive relationship between the two variables. Yalam and Coskun (2007) conducted empirical study on IC performance of banking sector of Istanbul stock exchange; the findings provide that there is a strong correlation of IC value added efficiency with profitability.

In addition to studies conducted using VAIC model is the work of Tseng and Goo (2005), which used structural equation modelling to test the influence of IC on company performance. Tseng and Goo (2005) examined the relationship between IC components and corporate value of Taiwanese

manufacturing companies. The result revealed that there is positive relationship between IC and corporate value.

On the other hand, the work of Firer and Williams (2003) found no relationship between IC components efficiency and financial performance of South Africa companies. Likewise the study of Kujansiva and Lonnqvist (2007) does not find clear evidence of the relationship between IC and company performance of Finland companies. These mixed and inconclusive results geared this study to conduct research on the influence of IC efficiency on companies' performance in Nigeria to probably contribute to the debate.

3.0 Methodology

Data were gathered from a sample of 25 Nigerian publicly listed companies' annual reports for three years period (2010-2012). The study makes use of systematic random sampling of all companies listed in the Nigerian Stock Exchange Ilorin archive at the time of compiling the data. The sample size cut across seven different sectors of Nigerian economy in order to generalize the result or findings from the study. This research work makes use of Value Added Intellectual Coefficient (VAIC) method to calculate the value added by each component of intellectual capital of the sampled companies in order to determine how efficient these companies are in the use of their intellectual capital resources.

3.1 The VAIC Method

Value Added Intellectual Coefficient (VAICTM) was first introduced by Pulic (1998) as a method of assessing the efficiency of intellectual (Intangible) asset. It gives a new insight into measurement of value creation and monitors the value creation efficiency in companies' production resource via tangible and intangible assets (Shiu, 2006). VAIC is developed to assess and evaluate the 'efficiency' in adding value (VA) to a company's total resources while each major resource component focuses on value addition in an organization and not on cost control (Shiu, 2006; Pulic 2000; Boremann, 1999). The VAIC approach is based on five steps. Firstly, to find out the competence of a company in 'creating' value or add value.

$OUT - IN = VA$ Equation (1)

Where, VA which is the difference between output and input should first be calculated.

OUT (output) included the overall income from all products and services sold on market.

IN (input) contains all expenses for operating the company, exclusive of labour expenses, which is not regarded as a cost. VA (value added) results from how current business and related resources (capital employed, human and structural) are used or employed. The second step determines how much new value has been created by one unit of capital employed (the calculation of the value added of capital employed (including physical and financial)).

$VA/CE = VACE$ equation (2)

Where, VACE is the Value Added Capital Employed Coefficient.

The third step is to assess the relation between value added and human capital employed in order to show how much value has been created and added by one financial unit invested in employees.

$VA/HC = VAHC$ equation (3)

Where, VAHC is the Value Added Human Capital Coefficient.

Pulic (1998) submits that Structural Capital (SC) is calculated when Human Capital (HC) is deducted from value added; with HC and SC being in reverse order.

The fourth step is to find the association between VA and SC, indicating the share of SC in creating value.

$SC/VA = SCVA$ equation (4)

Where SCVA is the Value Added Structural Capital Coefficient

The fifth step is to assess each resource that helps to create VA. This step is the accumulation efficiency of all the three components of VAIC. This is calculated by the summation of human capital, structural capital and capital employed.

$VAIC^{TM} = VACE + VAHC + SCVA$ equation (5)

Where= VAIC, the Value Added Intellectual Coefficient, indicates corporate value creation efficiency of a company. It does not provide monetary value of IC (Makki and Lodhi, 2009). VAIC simply calculates efficiency index that shows how IC of a company contributes towards value creation. The higher an index the higher the company value creation potentiality. Prior researches from Shiu (2006) and Firer and William (2003) define VAIC as a composite sum of three separate indicators. These indicators are Human Capital Efficiency (HCE): indicator of the VA efficiency of human capital; Structural Capital Efficiency (SCE): indicator of the VA efficiency of structural capital; and Capital Employed Efficiency (CEE): indicator of the VA efficiency of capital employed. $VAIC = HCE + SCE + CEE$

This study investigates the influence of IC efficiency using VAIC method, and its relationship with companies' financial performance. The study uses the VAIC method as modified by Shiu (2006) and Firer and William (2003).

Independent variables are measured as HCE, SCE and CEE, moderating variables as size of a company (asset) and meetings of the board of directors, while the financial performance of a company is measured by return on equity (ROE).

3.1.1 Moderating Variables

Size of a company and frequency of the board of directors' meetings are included in this study model as moderating variables in order to capture IC components and possibly expanding the Pulic (2004), VAIC model.

3.1.2 Research Model

Proxy measures for dependent, independent and moderating variables are given in the research model below, where Y is taken as dependent variable (financial performance), (X_1 , X_2 , and X_3) are taken as independent variables; representing efficiency indicators of VAIC (HCE, SCE and CEE), while (X_4 , and X_5) are moderating variables. Hence, the regression equation is shown below as:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \epsilon_i$$

Where:

Y= Return on Equity (ROE)

X_1 = Human Capital Efficiency (HCE)

X_2 = Structural capital Efficiency (SCE)

X_3 = Capital Employed Efficiency (CEE)

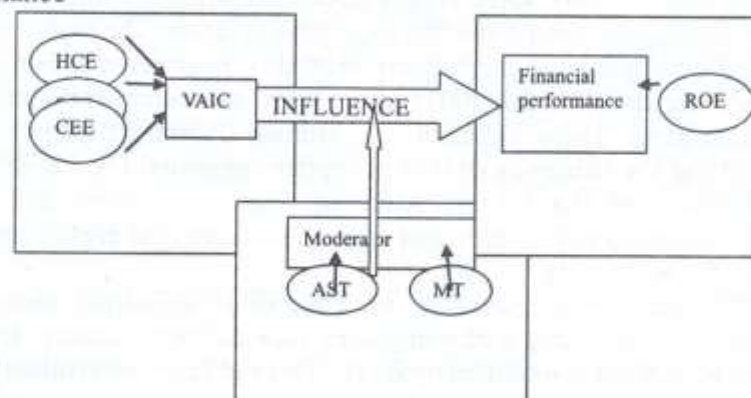
X_4 = ASSET (Natural log of total book value of asset) (AST)

X_5 = Meetings (Frequency of board meetings) (MT)

α = Parameter

ϵ_i = Error term

Figure 1: Influence of Intellectual Capital Efficiencies on Financial Performance



3.1.3 Hypotheses

- H1: Intellectual capital efficiencies are significantly correlated with return on equity (ROE).
 H2: Intellectual capital efficiencies (HCE and SCE) influence companies' financial performance (ROE)
 H3: There is a relationship between capital employed and return on equity (ROE)

4.0 Results and Discussion of the Findings

The results of the study are discussed below, starting from the descriptive statistics result.

4.1 Descriptive Statistics

For better understanding of the data, basic descriptive statistics has been applied. The study makes use of arithmetic mean as a measure of central tendency rather than median since there are less extreme observations in the data. Standard deviation was used as the primary measure of variation. Each data was valued and given in the original units, i.e. Nigeria's Naira (₦).

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Stat. Std. Error	Statistic Std. Error		
HCE	25	.3452	7.9370	2.305684E0	1.348985	1.59	.224	1.691	.444
SCE	25	.0282	2.4370	.755291	.4494771	1.41	.224	1.787	.444
CEE	25	.1066	7.7417	1.046103E0	1.118267	1.41	.224	1.682	.444
ROE	25	.1396	7.8632	4.416494E0	1.387495	1.27	.224	2.535	.444
AST	25	.4376	9.0625	2652698010	1.379367	1.21	.224	2.118	.444
MT	25	.7850	5.1217	1.5379512E	.8642696	.627	.224	.415	.444

Table 1 shows minimum, maximum, mean and standard deviation of dependent, independent and moderating variables for year 2012. In 2012, average HC performance index of a company remained 2.31 with average assets remained at ₦265.27 billion respectively. On the average the sampled companies created value of ₦2.31 for every naira spent on human capital while maximum HC

efficiency is 7.94.

4.2 Determining Correlation among Variables

Table 2 below shows the correlation that exists among the tested variables in this study.

Table 2: Pearson Correlation

	ROE	HCE	SCE	CEE	AST	MT
ROE	1					
Sig. (2-tailed)						
HCE	.687**	1				
Sig. (2-tailed)	.000					
SCE	.843**	.805**	1			
Sig. (2-tailed)	.000	.000				
CEE	.751**	.573**	.087*	1		
Sig. (2-tailed)	.000	.000	.063			
AST	.453**	.035	.117*		1	
Sig. (2-tailed)	.020	.610	.061	-.132		
MT	.289*	.506**	.410**	.156		1
Sig. (2-tailed)	.022	.000	.000	-.040	.068	
				.404	.123	

** Correlation is significant at the 0.01 level (2-tailed)

The above Table 2 presents the correlation that exists among the variables, revealing that companies with more assets structure are more likely to have higher in ROE ($r = 0.453$).

Significant relationship between HCE with ROE ($r = 0.687$), SCE with ROE ($r = 0.843$) and CEE and ROE ($r = 0.751$) confirms that knowledge, skill, experience, creative ability of human resources have strong influence not only on financial performance but also on structural capital efficiency and physical capital efficiency. It can also be inferred from correlation matrices that Human capital, structural capital and asset structure play vital role towards financial performance of companies through the interconnectivity potentiality of creating value of both structural capital and relational capital.

Structural capital efficiency has positive but weak correlation with asset ($r = 0.117$). Possible explanation for positive correlation is that SC efficiency increases when companies expand their business and there is enough human capital competence to exploit the expansion. SC efficiency has been increased with increase in asset because SC has been fully utilized by HC. Also, the correlation results indicate that there is positive and weak correlation between HC and size ($r = 0.036$) of the sampled companies throughout the three years of

the study. It is an indication that as the size of a company increases the HC efficiency increases.

In addition, the correlation results reveal that the higher the HC efficiency, the greater the SC efficiency will be ($r = 0.805$) and ultimately the financial performance also. That is the reason most companies try to convert HC to SC to manage maximum financial performance and to cover the risk of high calibre employees turn over.

4.3 Regression Results

Tables 3 to 5 reveal the results of the regression analysis which tests the relationship between the variables (IC, moderating and financial performance) for three year periods (2010-2012).

Table 3: Multiple Regression Results for year 2012

Variables	Beta	VIF
Constant	6.732	
HCE	0.421	1.080
SCE	-0.263	1.859
CEE	0.184	4.002
AST	0.031	4.437
MT	0.130	5.335

Adj. R. 0.321

Durbin-Watson = 2.170

The results from Table 3 show that the HCE and CEE are positively and significantly related to ROE, while SCE is negatively related to ROE. In addition, the moderating variables i.e. size of a company measured as asset (AST) and meetings (MT) by the board of directors also enhance IC efficiency to create value having positive up to 0.13.

Table 4: Multiple Regression Results for year 2011

Variables	Beta	VIF
Constant	5.013	
HCE	0.372	3.120
SCE	-0.321	1.445
CEE	0.143	2.972
AST	0.010	6.864
MT	0.007	5.047

Adj. R². 0.278

Durbin-Watson = 2.036

The results from Table 4 show that the HCE and CEE are positively and significantly related to ROE with of 0.372 and 0.143 respectively, while SCE is negatively related to ROE with -0.321. The moderating variables (AST and MT) also enhance IC efficiency to create value with of 0.010 and 0.007 respectively.

Table 5: Multiple Regression Results for year 2010

Variables	Beta	VIF
Constant	0.438	
HCE	0.283	1.005
SCE	-0.372	1.018
CEE	0.201	1.312
AST	0.129	3.310
MT	0.110	3.602

Adj. R^2 : 0.336

Durbin-Watson = 1.982

Table 5 shows that the HCE, CEE, and moderating variables (AST and MT) are positively and significantly related to ROE with of 0.283, 0.201, 0.192 and 0.110 respectively, while SCE is negatively related to ROE with -0.372.

More importantly, the explanatory power for all three years 2010-2012 (adj. R^2 in regression equations) ranged between 34% and 65%, which is satisfactory in social science study. These results are much better than the results of the study conducted by Firer and Williams (2003) who found R^2 up to 30% in identifying relationship between IC and corporate performance in which only CEE was significantly related to corporate performance and Kamukama, Ahiuazu and Ntayi (2010) found unclear relationship between IC and company performance. From the findings, the study concludes that all the three efficiencies of VAIC (HCE, SCE and CEE) have significant influence on ROE, and consistent with previous findings such as Salman *et al.* (2013); Maditinos *et al.* (2011); Calisir *et al.* (2011); Ahangar (2011); Chen *et al.* (2004, 2005) and Shiu (2006).

5.0 Implications of the Research Findings

The implications of these findings are:

(1) The higher the amounts spent on human capital or resource the greater is the influence it has on ROE.

(2) The higher the SC efficiency, the greater is the contribution of HC towards ROE.

(3) With SCE negatively related with ROE means that, as SCE of a company increases the ROE declines. The reason for this could be due to the fact that, the Nigerian economy is an emerging economy which is faced with the problem of inadequate organizational structural efficiency. As a result of this, the qualified, experienced and skilled human resources have less organizational structure to fully utilize their potentials and thus reduce SC efficiency towards value creation.

6.0 Conclusion

The aim and research issue of this study was to investigate the influence of intellectual capital efficiency on return on equity through empirical research. The coefficients of the estimates from the regression values confirm that there is correlation between IC efficiency and return on equity. The findings further reveal that HC efficiency, SC efficiency and CE efficiency have significant influence on ROE. The research thus concludes:

- (i) There is a significant positive correlation between company's Intellectual capital efficiencies and return on equity.
- (ii) There is a significant positive influence of human capital efficiency on return on equity of the sampled companies.
- (iii) There is a significant influence of structural capital efficiency on return on equity of sampled companies.
- (iv) There is a significant positive relationship between company's physical assets and return on equity; but structural capital and ROE are negatively related. The reason for this could be due to the fact that many Nigerian companies' managers like other developing countries, invest heavily in human capital without providing adequate and proportionate organizational structure to work with. As a result, structural capital deteriorates which leads to reduction in overall performance of structural capital efficiency on return on equity.

7.0 Policy Implications

There is empirical evidence that IC components influence companies' performance from this study. Specifically, the finding shows that human capital efficiency influences financial performance of Nigerian sampled companies. In order to achieve higher profitability and sustainability, these companies should implement policies that will improve and upgrade their employees' skill and

competence in the area of training and development. This study further reveals the potentials of structural capital in adding value to the company. This is a signal to Nigerian companies that investments in structural capital drivers are worthwhile. Therefore, it is important for Nigerian companies to put more emphasis on policy that will promote and improve the process, structure, culture and norms of their companies.

References

- Abernethy, M. P., Bello, A. D., Labory, S. Lev, B., Wyatt, A. and Zambon, A. (2003). *Study on the measurement of intangible assets and associated reporting practices*. Commission of the European Communities Enterprise Directorate General
- Aboody, D. & Lev, B. (1998). The value-relevance of intangibles: the case of software capitalization. *Journal of Accounting Research*, 36, 161-191.
- Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company. *African Journal of Business Management*, 5(1), 88-95.
- Al-Mamun, S. A. (2009). Human Resource Accounting Disclosure of Bangladeshi Companies and Its Association with Corporate Characteristics. *BRAC University Journal*, 6(1), 35-43.
- Al-Twaijry, A. (2009). Intangible assets and future growth: evidence from Japan. *Asian Review of Accounting*, 17(1), 23-39.
- Amir, E. Lev, B. (1996). Value-relevance of nonfinancial information: The Wireless communications industry. *Journal of Accounting and Economics*, 22(1-3), 3-30.
- Antal, A., Child, J. and Nonaka, I. (1994). *Handbook of organizational learning*, London
- Appauhami, B. A. (2007). The impact of Intellectual Capital on Investors' Capital Gains on Shares: An Empirical Investigation of Thai Banking, Finance & Insurance Sector, *International Management Review*, 3(2), 14-25.
- Arenas, T. & Lavanderos, L. (2008). Intellectual Capital: Object or Process? *Journal of Intellectual Capital*, 9(1), 77-85.
- Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Journal of Management Decision*, 36(2), 63-76.
- Bornemann, M. (1999). Potential of Value Systems According to VAICTM Method, *International Journal of Technology Management*, 18(5/6/7/8), 463-475.

- Bornemann, M. Knappo, A. Schneider, U. and Sixl, K. I. (1999). Holistic measurement of intellectual capital. Paper presented at the International Symposium Measurement and Reporting Intellectual Capital: Experiences, Issues and Prospects, June, Amsterdam. Bozbura, F. T. (2004). Measurement and application of intellectual capital in Turkey, *The Learning Organization*, 11(4/5), 357-365.
- Calisir, F. Gumussoy, C. A., Bayraktaroglu, A. and Denuz, E. (2011). Intellectual capital in the quoted Turkish ITC sector. *Journal of Intellectual Capital*, 11(4), 537-553.
- Carrell, J. (2007). Intellectual capital: An inquiry into its acceptance, *Business Renaissance Quarterly*, 2(1), 67-96.
- Chang, W. S. and Hsieh, J. J. (2011). Intellectual Capital and Value Creation- Is Innovation Capital a Missing Link? *International Journal of Business and Management*, 6(2), 3-12.
- Chen, J., Zhu, Z. and Xie, H. Y. (2004). Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual capital*, 5(1), 195-212.
- Chen, M., Cheng, S., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 6(2), 159-176.
- Drucker, P. F. (1993). *Post capitalist society*. Butterworth Heinemann, Oxford.
- Edvinsson, L. (1997). Developing Intellectual Capital at Skandia, *Long Range Planning* 30 (June), 366-373.
- Edvinsson, L. and Malone, M. (1997). Intellectual Capital: Realising Your Company's true Value by finding its Hidden Brainpower. *Journal of Human Resource Costing Accounting*, 4(1), 21-33.
- Firer, S. and Williams, S., M. (2003). Intellectual capital and traditional measures of corporate performance, *Journal of Intellectual Capital*, 4(3), 348-360.
- Fruin, W. M. (1997). *Knowledge works: managing intellectual capital at Toshiba*, Oxford University Press.
- Gallego, I. & Rodriguez, L. (2005). Situation of Intangible Assets in Spanish Firms: an empirical analysis. *Journal of Intellectual Capital*, 6(1), 105-126.
- Ghosh, D. and Wu, A. (2007). Intellectual capital and capital markets: additional evidence. *Journal of Intellectual Capital*, 8(2), 216-235.

- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate Data Analysis* (7th ed). Upper Saddle River, NJ: Pearson Prentice Hall.
- Kamukama, N., Ahiauzu, A., & Ntayi, J. M. (2010). Intellectual capital and performance: testing interaction effects. *Journal of Intellectual Capital*, 11(4), 554-574.
- Kujansivu, P., & Lonnqvist, A. (2007). Investigating the value and efficiency of intellectual capital. *Journal of Intellectual Capital*, 8 (2), 272-287.
- Lev, B. (2001). *Intangibles: Management, Measurement and Reporting*: The Brookings Institution Press, Washington, DC.
- Maditinos, D. Chatzoudes, D. Tsairidis, C. and Theriou, G. (2011). The impact of intellectual capital on firms' market value and financial performance, *Journal of Intellectual Capital*, 12(1), 132-151.
- Makki, M. A. Suleiman, A. and Lodhi C. R. (2009). Impact of Intellectual Capital on Shareholders Earning. *Australian Journal of Basic Applied Sciences*, 3(4), 3386-3398.
- Makki, M. A. Suleiman, A. Lodhi C. R. and Rohra, C. L. (2009). Impact of Intellectual Capital on Return on Investment in Pakistani Corporate Sector. *Australian Journal of Basic Applied Sciences*, 3(3) 2995-3007.
- Morgan, M. W. (1998). Improving business performance: are you measuring up? *Journal of Management*, 49(2), 10-12
- O'Brien, R. M. (2007). A Caution Regarding Rules Of Thumb for Variance Inflation Factors. *Quality & Quantity*, 41, 673-690.
- Okwy, P. O. and Christopher, C., O. (2010). Human Capital Accounting and its relevance to Stock Investment Decisions in Nigeria, *European Journal of Economics, Finance and Administrative Sciences*, 21, 64-76.
- Olaofe, O., (2006) NASB Releases Two New Accounting Standards. Retrieved on 25 February, 2011 from <http://www.ngex.com/business/public/newsinfo.php?nid=14>
- Organisation of Economic Cooperation and Development (2008), OECD, *principles of Intangible assets*, OECD, Paris.
- Pallant, J. (2003). *SPSS Survival Manual: A step by step guide to data analysis using SPSS for windows* (version 16). Open University Press, Maidenhead. Philadelphia.
- Pulic, A. (2004). VAIC an accounting tool for IC management. *International Journal of Technology Management*, 20(5-8), 702-714.
- Pulic, A. (1998). *Measuring the performance of intellectual potential in knowledge Economy*, Paper presented at the 2nd World Congress on Measuring and Managing Intellectual Capital, McMaster University, Hamilton.

- Pulic, A. (2000). VAIC an accounting tool for IC management. *International Journal of Technology Management*, 20(5-8), 702-714.
- Rodgers, W. (2003). Measuring and Reporting of knowledge-based assets. *Journal of Intellectual Capital*, 4(2), 181-190.
- Roos, G. & Roos, J. (1997). Measuring your company's intellectual performance. *Long Range Planning*, 30(3)413-426.
- Roos, G. Pike, S. and Fernstrom, L. (2005). *Managing intellectual capital in practice*. Elsevier/Butterworth, Heinemann, Oxford, UK
- Salamudin, N., Bakar, R., Ibrahim, M. K., & Hassan, F. H. (2010). Intangible assets valuation in the Malaysian capital market. *Journal of Intellectual Capital*, 11(3), 391-406.
- Sarmadi, S. (2013). Investigating of Relationship between Intellectual capital and Financial Performance of Petrochemical Companies listed in Tehran Stock Exchange. Retrieved from <http://www.ssm.com/abstract=2251620>
- Salman, R. T., Tayib, M. and Mansor, M. (2013). Interaction between Intellectual capital and Financial Performance: An Empirical investigation of Nigerian Companies. *Advances in Management*, 11(1), 56-72.
- Salman, R. T. and Tayib, M. (2012). Intellectual Capital Measurement Tools. *International Journal on Social Science Economics & Art*, 2(2), 19-26.
- Salman, R. T. Yahaya, K. A. and Olarewaju, A. (2012a). Application of the Value Added Intellectual Coefficient to Measure Corporate Performance: Evidence from Nigerian Service Companies, *Entrepreneurial Journal of Management Sciences*, 1(1), 30-42
- Salman, R.T., Mansor, M., Babatunde, D. A., & Tayib, M. (2012b). Impact of Intellectual Capital on Return on Asset in Nigerian Manufacturing Companies, *Interdisciplinary Journal of Research in Business*, 2(4), 21-30.
- Shiu, H. (2006). The Application of the Value Added Intellectual Coefficient to Measure Corporate performance: Evidence from Technological Firm. *International Journal of Management*, 23(2), 356-365.
- Stewart, T. (1997), *Intellectual Capital: The New Wealth of Nations*: Doubleday Dell Publishing Group, New York, NY
- Tabachnick, B. G. And Fidell, L. S. (2007). *Using Multivariate statistics* (3rd ed.). NY: Harper Collins.
- Ting, I. W. K. and Lean, H. H. (2009). Intellectual capital performance of financial institutions in Malaysia. *Journal of Intellectual Capital*, 10(4), 588-599.

- Tseng, C. and Goo, Y. J. (2005). Intellectual capital and corporate value in an emerging economy: empirical studies of Taiwanese manufacturers, *R & D management*, 35 (2), 187-201
- Vergauwen, P. G. and Alem, F. J. (2005). Annual report IC disclosures in The Netherlands, France and Germany, *Journal of Intellectual Capital*, 6(1), 80-104.
- World Development Report, (1998). *Human Development Index*, UNDP, New York
- Yalam, A. and Coskun, M. (2007). Intellectual capital performance of quoted banks on the Istanbul stock exchange market. *Journal of Intellectual Capital*, 8(2), 256- 171.
- Youndt, M. A. Subramaniam, M. and Snell, S., A. (2004). Intellectual Capital Profiles: Investments and Returns. *Journal of Management Studies*, 41(2), 335-361.