European Journal of Accounting, Auditing and Finance Research

Vol.5 No.2, pp.28-57, February 2017

Published by European Centre for Research Training and Development UK (www.eajournals.org)

EFFECT OF INTELLECTUAL CAPITAL ON FINANCIAL PERFORMANCE OF BANKS IN NIGERIA

Onyekwelu, Uche Lucy; PhD, ACA [1], Okoh, Johnson Ifeanyi, PhD[2] & Iyidiobi, F.C, M.Sc.[3]
[1]Correspondence Author
Department of Accountancy,
Faculty of Management Sciences,
Enugu State University of Science and Technology,
Enugu, Nigeria.

[2]Department of Financial Studies,
National Open University, Lagos

[3] Department of Accountancy,
Faculty of Management Sciences,
Enugu State University of Science and Technology,
Enugu, Nigeria.

ABSTRACT: *This paper appraised the effect of intellectual capital on financial performance of firms in Nigeria using the banking industry. The research used the Value Added Intellectual Coefficient (VAIC) to ascertain the extent that intellectual capital indices affect financial performance of three Nigeria. Data were collected from the published annual financial statements of the three banks and analyzed using regression tool. The study indicates that IC has a positive and significant effect on banks' financial performances of the banks but some are not significant. The results further showed that the banks are statistically different in both the intellectual capital and its financial performance indicators. It also shows that the banks with high IC also show high financial performance. The study recommends banks in Nigeria invest vigorously in development of their human capital as a key driver of firm's performance. They should also provide the infrastructures needed for to achieve a virile human capital in the system.*

KEYWORDS: Intellectual Capital, Financial Performance, Return on Assets, Return on Equity, Gross Earnings.

INTRODUCTION

Background of the study

There has been increasing trend of in interest on knowledge capital, this no wonder shows that knowledge has been argued to be a key driver of value creation among corporations. According to Guthrie and Petty(1999), two main knowledge management missions are evolving. They are in the form of a continuing quest to develop better system for creating, capturing and disseminating knowledge within organizations. The other is the growing awareness that know how adds significantly to the value of a business and in some cases, represent almost the entire value base.

In view of the above is the emergence of intellectual capital discourse accompanied by the drive to establish new metrics that can be used to record and report the value attributable to intellectual capital. It is time for traditional financial and management accounting practice to adapt to the new terrain. This rise of the New Economy- one principally driven by information knowledge is identified by the OECD (2000, forthcoming) as explaining the increased prominence of intellectual capital (IC) as a business and research topic. There is scant agreement as to what extent to our current understanding of intellectual capital (IC) is new (Hornery, 1999). Yet IC, in one form or another, is implicated in recent economic, managerial, technological and sociological development in a manner previously unknown and largely unforeseen.

The genesis of the modern organization and rise of an information economy created what we term the new "knowledge based intangibles, organizational structures and processes, knowhow, intellectual and problem solving capacity (Guthrie and Petty, 1999). They are not new in the sense that they did not exist within organization before, rather they have taken on a new and unprecedented important in a business world defined by global competition the need for constant strategic adaptation, ever increasing customer demands and an explosion of service based industries. This is a world in which concerns with tangible assets, like factories and land diminished in relative importance.

In recent years there has been a growing realization that a company's stock to intangible assets is a key contributor to its capacity to secure a sustainable competitive advantage. Knowledge based intangibles in particular are recognized to be central to the value creation process. Such assets have increasingly been referred to by a new term that of intellectual capital, in order to distinguish them from the financial capital that has traditionally provided the foundations for wealth creation. Intellectual capital refers to a much wider range of assets than those normally

recognized as intangible e.g. goodwill, brands, company reputation, etc. Consequently it is often referred to as intangibles particularly in the European literature. Accounting and intellectual capital are linked to each other because of the necessity to provide an accounting perspective on value creation. At one level there is a need to explain the hidden value attributed to intellectual capital by the capital markets, i.e. the excess of the market value of a company over the book value of its assets, determined in accordance with prevailing accounting principles. At the same time, it is important to set about documenting the growth of the value creation. In addition, there is a necessity to clearly distinguish intellectual capital from intangible assets in order that the repertoire of accounting treatments of the latter is not stretched to accommodate the former.
All of this proceeds against a background of growing interest in the establishment of a model of business reporting as a more comprehensive, customer oriented approach to the tasks traditionally associated with financial accounting and reporting. Given intellectual capital's central role in the value creation activities of companies, there is a pressing need to ensure that the information that accountants make available in any business report includes appropriate details of a company's stock of intellectual capital.

Statement of Problem

Various scholars have argued on the extent that intellectual capital can enhance firms' performance. However, the idea of intellectual capital is much stronger than its concrete form in the companies' statements. The academia for the past two decades has been drawn into the web of an unending debate concerning the place of intangible assets in corporate value creation. In their separate study, Lev and Sougiannis(1996), Amir and Lev(1996) claim that financial reporting which mainly assesses the tangibles of corporations is to some extent loosing relevance especially in the industrial sector that are dominated by knowledge-intensive and innovative organisations. Further to this, Swartz (2006) in Sofian, Rasid, and Mehri*(*2013) argue that Intellectual Capital(IC), together with information from financial statement can explain the market value of firms(share prices). In his submission, Jelsis(2007) avers that the benefits of managing Intellectual Capital are that it increases the market value of organisations, improves better communication, optimizes utilization of potentials, increase value creation ability, better image, enhance customers' satisfaction, motivating employees and indeed enhances most business processes.

Intellectual Capital is been identified by many to have the capacity of feeling the crucial gap that exists between company book value and market value. To this extent, companies unarguably require a reliable, accurate and adequate measure of firms' valuation which would have incorporated all the components of IC and sufficiently demonstrate its true impact on companys'

value and which will narrow the gap between book and market values(Vafei, *et al*, 2011; Banimad, *et. al.,* 2012; Berzkalne and Zelgalve, 2013; Szlavik, 2012; Stewart, Bullen and Eyler; Lev, 2001; Cezair, 2008).

Highlighting the place of Intellectual Capital in corporate valuation,(Bontis, 2001; Lev, 2001; Lev and Zarowin, 1999) argue that if it did not exist in organisations, then stock prices would not have reacted to actions such as changes in management, an element that is not recognized in financial statements as assets. Rastogi, (2000); Lev and Radhakrishan,(2003) aver that Intellectual Capital is both invisible and intangible and as such the value of knowledge cannot be captured well by any traditional measure. In view of the fore going, scholars of financial and corporate reporting in their various studies have both theoretically and empirically examined the impact of Intellectual Capital on firms' valuation but results have rather than resolve the issues remain inconsistent and produced mixed outcomes.

From the developed economies, Bontis, *et. al.(*2000) investigated the impact of the three components of Intellectual Capital (Human, Structural and Relational) on business performance and their inter relationships in Malaysia industries. The results show that the IC components have impact on business performance while the components have interrelationship. In another study, Stainbank(2003) tested the relationship between Intellectual Capital and firms' performance in South Africa and submitted that Intellectual Capital has positive correlation with profitability and productivity but have no relationship with market valuation. Kamath (2008) in his study examined IC and firms' performance in the Indian's pharmaceutical industry, result show that human capital has a prominent influence on profitability and productivity but does not have relationship with market valuation. Firer and Stainbank (2003);Kamath(2008) all argue that the impact of IC especially human capital can be substantial in certain service and manufacturing sectors like banks and financial institutions, hotels, information and technology industry, education, pharmaceuticals, chemical and petrochemical.

Samilogu,(2006);Tan,(2007) in their separate studies submit that an increase in IC increases the value of the firm and financial performance. Berzklane and Zelgalve(2014) using the same model aver a statistically significant and positive relationship between IC and company value for companies in Latvia and Lithunia whereas such correlation were not observed for companies in Estonia. Banimahd, *et. al*(2012) suggests that IC indicators has significant and positive relations with accounting based performance indicators such as profitability and productivity indicating that profitability and productivity have significant and positive relations with all other independent variables (firm size, leverage ratio and physical capital intensity) while market value

has only relationship with firm's size variable. It also reveals no relationship between market valuation and IC. Ekwe(2012) found out a statistically strong relationship between the components of IC and Return on Assets (ROA), Return on Equity (ROE), Employee Productivity, Market to Book value ratio.

The above studies though have affirmed and reaffirmed the ability of Intellectual Capital to have positively influence corporate valuations, some empirical results still negates the assertion or could not establish any statistical relationship between IC and firms' value. Ferraro and Veltri,(2011); and Mehnralian, Reseakh, Akhavan, and Sadeh(2012); Gottfredson,(1997); Jensen, (1998) found no statistical significant relationship between IC and organizational performance. Again, analysis by Tarideh(2013) indicate no relationship between IC and corporate value. Firer and Williams (2003) used the Value Added Intellectual Coefficient (VAIC) to measure IC and commercial performance in Africa and submits no significant correlation on profitability, productivity and market value.

From the foregoing submissions, it is clear that the task of establishing the relationship between Intellectual Capital and Corporate valuation is yet to be rested. This study becomes very imperative as there exist a clear gap created by dearth of studies on the impact of IC components on corporate valuation from the developing countries as most of the studies were done in foreign countries. Most of them were also skewed towards appraising the influence of intellectual capital on financial performance with no studies to the best of our knowledge on the Impact of Intellectual Capital on Corporate Valuation in Nigeria. This we believe is more encompassing and veritable for investment decisions. We therefore consider this very imperative in this era when the knowledge assets and information-driven economy have virtually assimilated the traditional economy and persistently considered key and fundamental to corporate value creation and hence the justification for this study.

The study therefore seeks to empirically examine the import of intellectual capital on firms' financial performance.

Objectives of the Study

The general objective of this study is to ascertain the effect of intellectual capital on financial performance in Nigeria. The study's specific objectives are:

1. To determine the effect of Human Capital Efficiency (HCE) and Return on Assets (ROA)
2. To examine the influence of Structural Capital Efficiency (SCE) and Return on Assets (ROA).

3. To assess the effect of Capital Employed Efficiency(CEE) and Return on Assets(ROA).

Research Questions:

1. How does Human Capital Efficiency (HCE) affect Return on Assets (ROA)?.
2. What effect has Structural Capital Efficiency (SCE) on Return on Assets (ROA)?.
3. To what extend does Capital Employed Efficiency (CEE) influence Return on Assets (ROA)?.

Research Hypotheses (Null):

H_{O1}: Human Capital Efficiency has no significant effect on Return on Assets.

H_{02}: There is no significant and positive relationship between structural capital efficiency and Return on Assets.

H_{03}: There is no significant and positive relationship between Capital Employed Efficiency and Return on Assets.

REVIEW OF RELATED LITERATURE

CONCEPTUAL REVIEWS

Intellectual Capital as Knowledge Assets:

The changing trends from traditional economy (land, labor and financial) to knowledge intensive economy during the last two centuries have made service based industries take the major share in the value creation process especially in developed societies. Intellectual Capital(IC) has been widely acknowledged as that innate attribute usually acquired by a firm which drives it on the wheel of value creation, value addition and value sustainability. To this end, many definitions have been propounded by different scholars and researchers. The concept generally emanated from a describing the 'dynamic effects of individuals: the 'Intellect' (Sveiby,1998). The very first of such definition of IC is that credited to Thomas Stewart, a pioneer of the concept, who in 1991 in an article captioned 'Brain Power-How Intellectual Capital is Becoming America's Most Valuable Asset' defined Intellectual Capital(IC) as the sum of everything everybody in your company knows that gives you company a competitive edge in the market place' . He further noted it is knowledge that transforms raw materials and makes them more valuable. He submitted that for any knowledge to be tagged 'IC', the knowledge must be able to be used to create wealth.

This definition is closely followed by the one proposed by Edvinsson and Sullivan(1996) defining Intellectual Capital as 'Knowledge that can be converted into value'. Laurence Prusak of Ernst and Young (later, IBM consulting packaged and sought to characterize IC as Intellectual material that has been formalised , captured and leveraged to produce a higher-valued asset. Gabraith(1996) in Salman, *et. al.(*2011) his own defined IC as a form of knowledge, intellect, brain activity which uses knowledge a source of value creation. A further definition of IC by Shaikh(2004); Phsavat and Kanchana,(2007) have it that employee knowledge capabilities, creativity and innovation , organizational structure or relational issues can be recognized as IC due to the its convention of employee implicit knowledge into explicit knowledge of the organization.

Roos,*et.al.(*1997) and Bontis, *et.al*(2000) submits that IC is recognized as a set of intangible assets such as resources, competences, and capabilities which increase not only firm performance bur also lead to organizational value creation. Tawyn and Tollington (2012) observed that that there is no universal definition for intellectual capital but the cause and effect relationship between IC and value creation is at best, indirect.

Intellectual Capital (IC) in Milost (2013) as postulated by Edvinsson(2013) is derived insights about head value, future earning capabilities based on Human Capital, Structural and Relational Capital. Stewart (1997) gave a most comprehensive definition of IC when he defined it as "a set of knowledge, information, intellectual property and expertise which can be used for the purpose of creating wealth". Roos, *et. al.,* (2013) defined IC as the sum of company's members' knowledge and practical translations of this knowledge. Milost(2013) submits that different authors has identified "Intellectual Capital" with diverse nomenclature such as "Invisible Assets" (Itami, 1987), "Core Competence"(Hamel and Prahalad, 1990), "Knowledge assets" Stewart(1997) "intangible resources"(Haanes and Lowendahi,1997), "intangible assets"(Sveiby, 1997). However, the term 'intangible assets' seem to be more popular and acceptable for obvious reasons especially with its adoption by the International Accounting Standard Committee through the pronouncement of IAS 38 and other related standards.

Edvinsson and Malone (2013) defined Intellectual Capital IC as possession of knowledge, applied experience, information technology customer relationships and professional skills that provide a company with a competitive edge in the market. In the words of Brooking (1998), the word Intellectual Capital is defined as combined intangible assets that enable a company to function.

Components of Intellectual Capital

As earlier stated, Thomas Stewart in 1997 pioneered a study under IC " Intellectual Capital: The New Wealth of Organisation while Skandia a a Swedish financial services company, is considered to be the first large company that started modelling and measuring its knowledge assets. Leif Edvinsson, Skandia and Pat Sullivan pioneered this study based on the Sveiby's work with Kaplan and Norton's Balanced Score Card leading to the development of first ' Skandia Supplement on IC in 1994. Edvinsson and Sullivan(2000) proposed the three components of IC as namely human, structural and relational capital. This nomenclature has been well acclaimed and adopted by authors like (Bahman, et al, 2012; Berzkalne and Zelgave, 2014; Oba et.al, 2014; Chen, et.al 2005; Ruta, 2009; Puntilo, 2009; Kamath, 2007, 2010; Ahangar,2011).

Human Capital (HC): Human Capital consists of the skills, competencies and abilities of individuals and group (Stewart, 1997). Human Capital is interpreted as employee values creating potentials depicted in the knowledge, competencies, skills, experiences, abilities and talents of firm's employees and managers. Human capital captures knowledge, professional skills, experience and innovativeness of employees within an organization, Boujelbene and Affes(2013; Banimadh, et al. 2012; Uadiale and Uwuigbe, 2011; Odogwu and Chidi, 2010).

According to Rastogi(2000) as cited by Stiles and Kulvisaechana(2008) the concept and perspective of human capital stems from the fact that there is no substitute for knowledge and learning, creativity and innovation, competencies and capabilities and that they need to be relentlessly pursued and focused on the firm's environmental context and competitive logic. Nielson, Bukh, Johansen, Gormsen (2006) submit that human resources capital is the core of IC components and they include skilled staff, knowledge and management philosophy the company's performance has been affected.

Structural capital: Structural capital is defined as knowledge assets that are indeed companys' property and includes intellectual property such as patents, copyright and trademarks; processes, methodologies, models; documents and other knowledge artifacts, computer networks and software; administrative systems so forth (Stewart, 1997). It comprises of the knowledge, organizational culture, intellectual procedure, process, philosophy, systems, databases and contracts and explains the structures and processes employees develop and deploy in order to be productive, effective and innovative, Boujelbene and Affes(2013). Structural capital is the supportive infrastructure, processes and databases of the organization that enable human capital

to function, Bontis, *et.al,* 2000; Maddocks and Beaney, 2002). Structural capital is owned by an organization and remains with an organization even when the people leave including processes, patents, and trademarks, as well as the organization's image, organization, information system, and proprietary software and databases. Edvinsson and Malone(1997) as cited by Uadiale and Uwuigbe(2011) further classified structural capital into organization, process and innovation capital:

i. Organizational capital includes the organization philosophy and systems for leveraging the organization's capability.
ii. Process capital includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services.
iii.Innovation capital includes intellectual property such as patents, trademarks and copyrights, and intangible assets, Edvinsson and Malone(1997). Intellectual properties are protected commercial rights such as patents, trade secrets, copyrights and trademarks. Intangible assets are all of the other talents and theory by which an organization is run.

Customer/Relational Capital): Represents the potential an organization has due to ex-firm intangibles (Bontis, 1999) and defines the value of relationships with suppliers ,allies and customers are classified into the forms of brand equity and customer loyalty(Stewart,1997). He submits that brand equity defines a promise of quality for which a customer agrees to pay a premium price and the value of brands is measurable in financial terms while the customer loyalty accounts for a base of customers that is measurable and depicted in a premium price. It is the knowledge embedded in relationships with customers, suppliers, industry associations or any other stakeholder that influence the organization's life, (Oba, et. al 2013; Banimadh, et.al, 2012; Salman,et.al 2012; Edvinsson and Malone(1997).

EMPIRICAL REVIEWS

The empirical literature reveals that intellectual capital (IC) encourages the business performance of organizations. A study was conducted to measure the effect of intellectual capital on Jordan pharmaceutical industry and they explored that IC has significant and positive impact on performance of Jordan pharmaceutical industry (Aziz, *et. al.* 2010). Mavridis (2005), appraised VAIC model on financial performance using seventeen commercial banks and concluded that value added (VA) and physical capital has normal, strong and positive relation. Another study was conducted to measure the intellectual capital performance i.e. (HCE, SCE, and CEE) and its impact on financial performance (ROE, EPS and ASK) of 150 listed companies in Singapore

stock exchange by using VAIC™ model and conduced that IC performance has significant relation with firm's performance of UK banks over the period 1999-2005 and argued that efficiency of U.K banks is based on human capital which means an efficient bank is more investing to create Human Capital Efficiency (HCE). Ahangar (2011) conducted the study by employing the VAIC™ to measure the intellectual capital performance and its impact on financial returns in Iranians companies. He concluded that Human Capital Efficiency (HCE) has significant and positive impact on financial returns of companies whereas the relationship of structural and physical capital was not significant with financial performance of companies. Saudah, (2005) argued that IC has positive relation with financial performance of firms and same findings are supported by Riahi-Belkauui (2003) concluded that IC has positive and substantive influence on corporate performance of US multinationals.

Another study reveals empirical results that (VAIC™) has positive and significant relation with financial, stock and economic performance of industries. He further concluded that VAIC™ has only significant relation with market performance of high tech industries while they considered that Capital Employed Efficiency (CEE) is key determinant of financial and stock market performance (Zeghal and Maaloul 2010). Joshi, Cahill and Sidhu (2010) conducted the study to measure the IC performance through VAIC™ model. They argued that Human Capital Efficiency (HCE) has positive and significant relation to increase the efficiency of Australian owned banks rather than Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) which means more investment on human capital will increase the more efficiency of banks. Kamath (2008) empirically studied the relationship between IC and financial performance of top 25 pharmaceutical firms using VAIC™ and concluded that (HCE) is more important than (SCE) and (CEE) to enhance the profitability and productivity of pharmaceutical industrial and same findings is reveal by Yalama and Coskun (2007) by employing VAIC™ and DEA analysis over a period of 1995-2005 and concluded IC has positive effect on profitability of firms. Pew, et, al. (2007) examined the empirical relation of 150 firms listed in Singapore stock exchange and concluded that IC has a significant and positive relation with present and future financial performance of these firms.

Another study was conducted to measure the IC performance of seventeen commercial banks of Bangladesh by employing the (VAIC™) model and concluded that commercial banks have more Human Capital Efficiency (HCE) than Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) (Mohiuddin, Najibullah and Shalid 2006). As IC is recognized one of the important strategic assets during the last two decades. Maditinos et al (2011) was attempted to investigate the empirical relation of IC with firms market and financial performance

of 96 listed firms in Athens stock exchange and argued that only (HCE) has significant and substantive positive relation with financial performance (ROE) of firms.Goo and Tseng (2005) examined the empirical relation of IC performance and its impact on financial performance of 500 Taiwanese manufacturers using VAIC^{TM}. They explored that IC has positive substantive effect on financial performance. Laing, Dunn and Lucas (2010) examined that IC has positive substantive effect on financial performance of Hotel industry of Australia Over the period of 2004-2007 conducting VAIC^{TM} methodology. They concluded that (ICE) Intellectual Capital Efficiency is based on Human Capital Efficiency (HCE) of hotel industry of Australia which positively encourages financial performance (ROA) of hotel industry. Ji-Jian et al (2006) was conducted the study to measure the IC performance and its impact on financial performance of 32 automobiles companies Listed in Shanghai Stock Exchange. The empirical findings revealed that all the determinants of VAIC have substantive effect on financial performance of 32 automobiles countries. Onyekwelu (2016) studied the effect of Intellectual Capital on valuation of firms in Nigeria. The study was a panel study using time series and cross-sectional data. The study covered ten year. Twenty one firms cutting across seven economic sectors in Nigeria. Analysis was done usng multiple regression tool. The study indicates that HCE had positive and significant effect on firm in Nigeria. SCE showed negative and no significant relationship while CEE has positive and insignificant effect on variables used in measuring corporate values.

METHODOLOGY

3.1This study adopted the expost facto research design.The data for the study were secondary data, that is, data were sourced from the annual reports of the banks under study for a period of ten years (2004-2013). The paper adopted the ex-post facto research design since the research relied on historical data generated from annual reports and accounts of these banks as well as data from the publications of the Nigerian stock exchange (NSE). For the purpose of conducting the study Return on Asset (ROA) was used to measure financial performance.

Return on Asset (ROA): profitability shows the degree to which a firm's revenues exceed its cost. ROA is an indicator of how profitable a company is in relation to its total assets. It gives an idea as to how efficient the management uses assets to generate earnings. It is the ratio of the net income (Less preference dividends) divided by book value of total assets as reported in the annual report; (Williams and Firer, 2003; Chen, et al, 2005). It is expressed mathematically as; ROA= Net income /Total assets.The value added intellectual (co-efficient (VAIC) methodology developed by Ante Pulic in 1998 formed the underlying measurement basis for the intellectual variable in this study. It made uses of three components (Coefficients as follows; Capital

Employed Efficiency, Human Capital Efficiency and Structural Capital Efficiency. Pulic (1998,2000a) opines that VAIC is an analytical procedures designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of value added by a firm's total resources and each major resource component. VAIC is a composite sum of two major indicators; these are:

(1) Capital Employed Efficiency (CEE) - indicator of value added efficiency of capital employed which is defined as the book value of a firm's net assets.
(2) Intellectual Capital Efficiency (ICE) - indicator of value added efficiency of company's intellectual capital base. Intellectual capital efficiency is composed of two other variables as follows.
(3) Human Capital Efficiency (HCE) - indicator of value added efficiency of human capital. Total salary and wage costs are an indicators of a firms human capital (HC) and.
(4) Structural Capital Efficiency (SCE) - indicator of value added efficiency of structural capital. The two sub-components of VAIC form the independent variables in this study. The equation below formalizes the VAIC relationship algebraically;
(5) VAIC = CEE + HCE + SCE
Where VAIC = VA intellectual coefficient of the banks
CEE = capital employed efficiency coefficient of the banks
HCE = human capital efficiency coefficient of the banks.
SCE = structural capital efficiency of the banks
VA = value added by each year for the banks

Pulic (1998) states the higher the VAIC coefficient, the better the efficiency of VA by a firms total resources. The first step in calculating CEE, HCE and SCE is to determine a firm's total VA. This calculation is defined by the following equation.
VA = I + DP + D + T + M + R + WS
Where; VA (value added) for the banks are computed as the sums of interest expense (I), depreciation expenses (DP); dividends (D), corporate tax (T), equity of minority shareholders in net income of subsidiaries (M), and profits retained for the year (R) wages and salaries (WS).
Public (1998) further states that CEE is the ratio of total VA divided by the total amount of Capital Employed (CE) where capital employed is defined as the book value of a firm's net asset. CEE is represented algebraically as;
CEE = VA/CE

Where CEE = capital employed efficiency coefficient of the banks.

VA = VA of the bank and

CE = book value of the net assets of the banks

HCE = is calculated as the ratio of total VA divided by the total salary and wages spent by the firm on its employees. The equation is shown below

HCE = VA/HC

Where: HCE = human capital efficiency coefficient of the banks,

VA = VA of the banks and

HC = Total salary and wage cost of the banks

In order to calculate SCE, it is first necessary to determine the value of a firm's Structural Capital (SC). Pulic (1998) proposes a firm's total VA less its human capital is an appropriate proxy of a firm's SC.

That is: SC = VA – HC

Where; SC = structural capital of the banks

VA = VA of the banks and

HC = total salary and wage expenditure of the banks.

Based on prior empirical research findings, Pulic (1998) argues that there is a proportionate inverse relationship between HC and SC in the value creation process attributable to the entire intellectual capital bases, the less human capital participates in value creation, them more structural capital is involved. Consequently, Pulic (1998) argues the formular for calculating SCE differed to that for CEE and HCE respectively. Specifically, Pulic (1998) states SCE is the ratio of a firm's SC divided by the total VA. The relationship is shown in the equation below.

SCE = SC/VA

Where = SCE = structural capital efficiency coefficient VA of the banks,

SC= structural capital of the banks and

VA = VA of the banks

Tools for Data **Analysis and Model Specification**

In the study, the independent and dependent variables are fit to an equation called a Regression equation which data would express the relationship between variables. The simple linear regression analysis is used to analyze the stated hypothesis. In hypothesis, the relationship is between intellectual capital and financial performance. To express the model, a simple linear regression in equation is;

$Y = a + bx$

Where y = Dependent variable

A = Intercept parameter (where the regression surfaces crosses the Y axis)

b = slop A, the regression line (it is the rate a change in Y with respect to x)

a - change in Y with respect to x

x = independent variable.

Analysis of Data/ Testing of Hypotheses

Appendix 1

Table 1: Regression result on Return on Assets on Human Capital Employed, Structural Capital Employed and Capital Employed Efficiency of Zenith Bank Plc

	R-square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.19	0.006	7.74	0.016	0.003
SCE	0.15	0.006	6.19	0.02	0.001
CEE	0.006	0.006	2.45E	0.02	8.76

Researchers' Computations, 2014

Table 2 Regression result on return on equity on human capital employed, structural capital employed and capital employed efficiency of zenith bank plc

	R-square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.25	0.070	0.013	0.05	0.040
SCE	0.12	0.070	0.006	01.5	0.01
CEE	0.20	0.070	0.010	0.17	0.001

Researchers' Computations, 2016

Table 3: Regression Result on Return on Assets on Human Capital, Capital Employed, Structural Capital and Capital Employed Efficiency of Fidelity Bank Plc.

	R-square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.24	0.009	0.000	0.003	0.005
SCE	0.16	0.009	0.000	-0.002	0.034
CEE	0.001	0.010	1.57	0.014	0.027

Researchers' Computations, 2016

Table 4: Regression result on return on equity on human capital employed, structural capital employed and capital employed efficiency of Fidelity Bank Plc

	R-square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.000	0.07	9.11	0.10	-0.00
SCE	0.05	0.07	0.002	0.01	0.14
CEE	0.02	0.07	0.001	0.05	0.81

Researchers' Computations, 201

Regression result on return on assets on Human Capital Employed, Structural Capital Employed and capital Employed Efficiency of UBA Plc Bank
Table 5

	R square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.65	0.006	0.000	-0.02	0.017
SCE	0.75	0.00	0.000	-0.03	0.09
CEE	0.19	0.009	0.000	0.011	0.02

Researchers' Computations, 2016

Regression result on return on equity on human capital employed, structural capital employed and capital employed efficiency of UBA Plc Bank

Table 4.3.6

	R square	Standard Error	Linear Regression	Intercept	P- Value
HCE	0.22	0.09	0.02	-0.09	0.10
SCE	0.3	0.09	0.03	-0.2	0.6
CEE	0.05	0.10	0.005	0.13	0.15

Researchers' Computations, 2016

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The findings from the study shows:The first hypothesis for Zenith bank, the linear regression shows that there is a positive relationship between ROA and HCE. HCE is 7.74 in Fidelity Bank, HCE is 0.00 in table 4.3.1 which means it is positive but insignificant. While in UBA plc, HCE is 0.00 which mean there is a positive relationship but it is insignificant because it is not up to 0.50.The second hypothesis: the linear regress in table 4.3.2 shows that there is a positive and significance relationship return on assets and capital employed efficiency in Zenith Bank with CEE is 2.45. In Fidelity Bank, the value of CEE is 1.57 which positive and significant. The value CEE in UBA is 0.00 which shows that it is insignificance.The third hypothesis; Table 4.3.3 shows that SCE is 6.19 in Zenith Bank which is significant, shows that SCE is 0.000 in fidelity which is insignificant, while in UBA SCE is 0.00 which is insignificant.

Conclusion and Recommendations

This paper attempt to examine the effect IC financial performance of selected banks in Nigeria. The result showed that there is a positive and significant relationship between the financial performances of the banks but some are not significant. The results further showed that the banks are statistically different in both the intellectual capital and its financial performance indicators. It also shows that the banks with high IC also shows high financial performance. Banks' human capital as the most important assets to the banks. Constant and regular training of employees is also in all aspects of the bank's operation is very strongly recommended because it is established that regular training will positively impact on the employee performances and service delivery thereby boosting their financial performance educators. Following from the discussion, it is considered that HC and SC make up intellectual capital; it implies that there is a strong and positive effects of IC on financial performance of banks in Nigeria. Management of should provide conducive work environment, workers should enjoy enhanced welfare packages, and good training program.

REFERENCES

Ahangar, R. G.(2011). The relationship between intellectual capitals and financial performance: an empirical investigation in an Iranian company. African journal of Business Management. 5(1), 88-95 accessed online at http://www.academicjournals.org/AJBM.

Amir, E., and Lev,B.(1996).Value relevance of non-financial information: The wireless communications industry. Journal of Accounting and Economics,22(1-3), 3-30.

Appauhami, B.A (2007). The impact of Intellectual capital on investors capital, gains on shares: An empirical investigation of Thai Banking, Finance and Insurance Sector; International Management Review, 3(2),14-25

Andriessen (2004). Sveiby 2001 and Roos 2005. Exploring the concept of intellectual capital (IC). Long Range Planning, 31(1), 150}153.

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),88-955.

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.

Banimadh, B., Mohammadrezaei, F. and Mohammadrezaei, M.(2012). The Impact of Intellectual capital on profitability, productivity and market valuation: Evidence from Iranian high-knowledge based industries; Journal of Basic and Applied Scientific Research. 2(5) 4477- 4484. Accessed online at www.textroad.com

Bornemann, Miknapp, A, Schneider, U and Sixl, K. I (1999),

Holistic measurement of Intellectual capital, international' symposium Measurement and reporting 'intellectual capital experiences, issues and prospects, available at www.OECD.org data OECD /16/20/1947871

Bontis, N, Keow, W.C.C & Richardson, S (2000). Intellectual capital and business performance in Malaysian industries, journal of intellectual capital I (1), 85-100.

Edvisnesson, L. and Malone, M.(1997), Intellectual capital.

Realizing your company's True value by finding its hiddon Brainpower, Harper business, New York, NY.

Breman N,(1999). Reporting and managing Intellectual capital! Evidence from Ireland' paper presented at the international symposium measuring and reporting intellectual capital experiences, issues and prospects, June, Amsterdam.

Ekwe, M. C. (2013), the relationship between intellectual capital and Growth in revenue of deposit money banks in Nigeria. Research Journal of financial and Accounting 4 (12) 55-64. Available online at http://www.iiste.org/ Journals /index.php/RJFA/article/view/7759/7801.

El –Bannany, M (2008). A study of determinants of intellectual capital performance in banks the UK Case. Journal of intellectual capital, 9 (3), 487-498.

Holton, E.E and Yamlcovenko, B. (2008). Strategic intellectual capital development a defining paradigm for HRD. Human Resource Development Review, 7(3), 270-91.

Intellectus Model, IADE-CIC 2003 and Bueno (2006). Intellectual capital: Navigating in the new business landscape. London: Macmillan Business.

Johanson, U M, Martensson and Skoog M, (1999b) measuring and managing intangibles eleven Swedish exploratory case studies, paper presented at the international symposium measuring and reporting intellectual experience, issues and prospects, June, Amsterdam.

Kotler (2005), Marketing Management analysis manning, Implementation and control, Engle wood! Hall International Inc.

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.

Mavridis, D & Kyrmizoglou, G.P (2005). Intellectual capital

Performance drivers in the Greek banking sector. Management Research News, 28(5), 43-62 .

Mavridis, D and Kyimizoglou GP 92005). Intellectual capital performance drivers in the Greek banking sector Management Research News, 28(5) 43-62.

Organization for economic co-operation and development (OECD), (2000), final report measuring and reporting intellectual experience, issues, and prospects; Paris' OECD.

Ordonez de Pablos, P (2002). Evidence of intellectual capital

Measurement from Asia, Europe and the Middle east. Journal of Intellectual capital, 3(3), 287-302.

Organization for economic co-operation and development

(OECD), (1999), Guidelines and instructions for OECD Symposium, international symposium measuring and reporting intellectual capital experiences, issues and prospects, parts; OECD.

Onyekwelu, U.L.(2016). Effect of intellectual capital on corporate valuation of firms in Nigeria. A PhD Dissertation submitted to Department of Accountancy, Nnamdi Azikiwe University, Awka. Nigeria.

Onyekwelu, U.L & Okoye, E.I. (2016). Effect of Effect of intellectual capital on corporate valuation of oil and gas firms in Nigeria. Research journal of sustainability accounting and reporting 4(7)50-59.

Onyekwelu, U.L & Ubesie, M.C. (2016). Effect of Effect of intellectual capital on corporate valuation of pharmaceutical firms in Nigeria. International Journal of Business and Management Review. 4(7)50-59.

Onyekwelu, U.L.(2016). Firm foundation in accounting and finance research, Enugu: His Glory Publications.

Petty, R and Guthrie, T (2000a), The case for reporting on intellectual capital evidence, analysis and future trends in S.B Dahiya (ed): the current state of business, Discipline,1, 201-217.

Pulic A (2000a). VAIC-an accounting tool for IC management international journal of technology management 20(5- 7),702-14.

Pulic A. (2000b), MVA and VAIC analysis of randomly selected

Companies from PTSE 250, available at h//p://www.Vaic-on.net/downloads/f+se30.Pdf

Roos, Y. I. (2005). Measuring your company's intellectual performance. Long Range Planning, 30(3), 413}426.

Rambøll B. O. (2001). Intellectual capital. London: Nicholas Brealey Publishing.

Sveiby K. L. (2001). Intelligent enterprise: A knowledge and Service based paradigm for industry. London: The Free Press.

Seltize, Lawrence (1979). Research Method in Social Relation". New York; John wiley and Sons Inc.

Sullivan, P, (2000), Intellectual capital: The new wealth of nations, new York; Doubleday Dell Publishing Group,

Sanchez, P, Chamichade, C & Olea, M (2000). Management of intangibles; an attempt to build a theory. Journal of intellectual capital 1 (4),188-209.

Tayles, M, Pike, R. and Sofian, S. (2007). Intellectual capital, management accounting practices and corporate performance. Accounting, auditing and accountability journal 2(4), 522-48.

Tan, PH, Plowman & Hancock, P (2007) Intellectual capital and financial returns of company's journal of intellectual capital, 8(1) 76-95.