INTELLECTUAL CAPITALS AND FINANCIAL PERFORMANCE INDICES OF DEPOSIT MONEY BANKS IN NIGERIA: A COMPARATIVE ASSESSMENT

Michael Chidiebere Ekwe Ph.D. ACA
Department of Accountancy, Enugu State University of Science & Technology,
Enugu State of Nigeria

ABSTRACT: *The emergence of high technology, information, and innovation based environment in the world today has greatly altered the way and manner businesses are done globally. This new technology which of course utilizes high level of intellectual capital also determines the level of financial performance of business organizations. Some organizations which hitherto were rated very high in terms of their profitability and other financial performances are today being rated very low simply because of their non-adoption of this intellectually based technology. This study uses the Value Added Intellectual Coefficient (VAIC) model to compare both the intellectual capital indices as well as the financial performance variables of six highly rated banks in Nigeria with the aim of determining if the deviations in their financial performance indices could be explained by the deviations in the banks' intellectual capital variables. The study adopted the ex-post facto research design. It was systematically conducted using longitudinal time series data generated from the Nigeria Stock Exchange and from annual reports and accounts of the selected banks in Nigeria spanning from year 2000 to 2012. The study adopted the Duncan Multiple Range Test (DMRT) of ANOVA across the six selected banks in Nigeria for the test of the hypotheses. The SPSS statistical software (version 17.0) was used for the data analysis. From the analyses, it was discovered that there were significant deviations in both the financial performance indicators and in the intellectual capital variables among the six banks studied. The results further showed that the banks are statistically different in both the intellectual capital indices and in the financial performance indicators. The study also established that the banks with high intellectual capital also recorded high financial performance and therefore recommends that all banks should embrace this new intellectually based technology in order to enhance their financial performances, returns to their different stakeholders as well as in their service delivery to their customers.*

KEYWORDS: Intellectual Capital, VAIC, Financial Performance, Nigerian Banks,

INTRODUCTION

It is an established fact today that the intellectual assets of a company in combination with other physical assets of the company, determine the extent that companies can go in terms of their financial performance and in rendering returns on the stakeholders investments. This is particularly true in service firms where intellectual capital is not only more pronounced but physical assets are almost non-existent when compared to the extent of the intellectual capital in use. Bornemann *et al*. (1999) discover that enterprises, which have managed their intellectual capital better, had achieved stronger competitive advantage than the other enterprises. Also they

reported that companies which had strengthened their own intellectual capital management, compared to the others had performed better. Furthermore, human capital − a sub set of intellectual capital, has also been recognized as one of the key determinants of growth today in any business enterprise (OECD, 2001).

The banking sector in Nigeria, being a service oriented sector, has recognized this fact and has taken some drastic decisions with respect to enhancing its intellectual capital base. For example, banks in Nigeria nowadays engage mostly university graduates, who possess a minimum of second class honors upper division in their employment policies, thereby giving credence to the fact that intellectual capital significantly affects financial performance (Ekwe, 2013). Most of the banks in Nigeria have also recognized the importance of computerization and employee training and have decided that their prospective employees must not only be computer literate, but must undergo regular performance enhancement training.

Furthermore, according to Ekwe (2013), before the year 2000, the three strongest and most popular banks in Nigeria were: the First bank of Nigeria (FBN), Union bank of Nigeria (UBN) and United Bank for Africa (UBA). Their volume of transactions as well as their assets and customer bases were not only very high but also very strong. With the emergence and introduction of modern technologies in banking, which depended heavily on their intellectual capital, these trio were generally classified as old generation banks because they did not embrace the technology immediately; while the banks that immediately embraced the modern technologies, such as Zenith bank Plc, Eco bank Plc, Diamond bank Plc, etc, were classified as the new generation banks. Even then, the new generation banks could only make minor impact in the economy and at the Nigeria Stock Exchange as these older banks dominated trading and other activities at the exchange. Most people then preferred to bank and carry out their transactions with these old generation banks because of these attributes. Today, the trend has been altered. While some of the old generation banks still record higher book values of their physical assets, most of the new generation banks post better and higher financial performance figures and better services than the old generation banks owing to the innovations introduced by these new generation banks. Consequently, people now prefer to bank with the new generation banks and as a result, the customer bases of the older banks have dropped significantly. Furthermore, even at the Nigeria Stock Exchange (NSE), the rate of stock turnover of these new generation banks as well as their market capitalization has consistently been higher than those of the old generation banks. An explanation to what has caused this change in trend needs to be empirically made, hence this research sets to compare the intellectual capital performance indices among banks in Nigeria as well as their financial performance indicators to see if an explanation could be found on what caused the change in trend and to see if there is significant differences in their financial performance indicators and their intellectual capital indices.

Furthermore, the banking sector, in any country plays a pivotal role in setting the economy in motion and in its development process. Banks promote growth and success of businesses in both developed and developing countries. According to Kamath (2007), the banking sector is an ideal area for intellectual capital research because the banking sector is "intellectually" intensive and its employees are (intellectually) more homogeneous than those in other economic sectors. Empirical evidence of the understanding and development of intellectual capital (IC) concepts in

emerging economies is still at its infant stage (Firer and Williams, 2003) and because emerging economies like Nigeria, contribute significantly to the prosperity and stability of the world economy, there is a need to establish evidence of the development of intellectual capital in these economies. Following from the above, this paper compares the intellectual capital indices and some selected financial performance indicators among the six selected banks in Nigeria. In particular, the paper examines and compares the performances of the components of intellectual capital as defined in Pulic (1998) value added intellectual coefficient (VAIC) model. These components are: Human capital coefficients, structural capital coefficients and the capital employed coefficients. Also the paper further examines and compares banks' financial performance indicators across the six highly rated banks in Nigeria. The paper contributes to the literature by focusing on Nigeria rather than a developed western economy.

The remaining sections of this paper are organized as follows: First, a review of literature is presented. It discusses the definition of intellectual capital, reviews previous studies and presents the hypotheses. Next, is the section discussing the research methods adopted in this study. It is followed by a presentation and discussion of the findings. Finally, the paper ends with a conclusion.

REVIEW OF RELATED LITERATURE AND DEVELOPMENT OF HYPOTHESES:

Definition of Intellectual Capital:

Several studies exist in the extant literature on the impact of intellectual capitals on financial performance of organizations. Despite these studies, there has not been a unified or common definition of intellectual capital. Engstrom *et al* (2003) agree that there is no generally agreed definition of intellectual capital. This notwithstanding, some attempts have been made at providing some definitions for intellectual capital. Edvinsson and Malone (1997) define intellectual capital as 'the possession of knowledge, applied experience, organizational technology, customer relations and professional skills that provide a company with a competitive edge in the market'. Ahangar (2011) sees the term intellectual capital to include inventions, ideas, general knowledge, design approaches, computer programs and publications. Intellectual Capital (IC) can be briefly defined as the knowledge based equity of organizations and has attracted, during the last decade, a significant amount of practical interest (Campisi and Costa, 2008; Petty and Guthrie, 2000). Stewart (1997) defines Intellectual Capital as packaged useful knowledge, while Fredriksen (1998), states that intellectual capital can be defined as skills and knowledge acquired by people during their lifetime and which can be used for the production of goods and services. Brooking (1996) in Ismail and Karem (2011), defines intellectual capital as the combined intangible assets which enable the company to function and see an enterprise as the sum of its tangible assets and intangible assets as expressed in the following formula:

Enterprise = Tangible Assets + Intellectual Capital.

Saint-Onge's, (1996) model developed in the early 1990s divides intellectual capital into three parts: Human capital, Structural capital; and Customer capital. Also Edvinsson (1997) agrees that intellectual capital comprises human capital, structural capital and customer capital. Bontis (2000) adjusts customer capital into relational capital arguing that it not only the customer's contribution that affects intellectual capital but the whole lot of relations with customers,

suppliers, shareholders and other partners. Tseng and Goo (2005) categorized intellectual capital (IC) framework in term of human capital, organizational capital, innovation capital and relationship capital. Therefore following from the above arguments, intellectual capital as adopted in this study is expressed mathematically as:

Intellectual Capital = Human Capital + Structural Capital.

Human Capital
In line with the above, human capital has been recognized as one of the key determinants of growth today (OECD, 2001). This applies especially to modern economies such as Switzerland, United States of America, China, and Japan etc as companies with a large share of unskilled labour have moved to other countries of the world as a consequence of their comparative intellectual capital advantage (Polasek *et al*, 2011). According to Ahangar (2011), human capital is recognized as the largest and the most important intangible asset in an organization which ultimately provides the goods and/or services that customers require or the solutions to their problems. It includes the collective knowledge, competency, experience, skills and talents of people within an organization. It also includes an organization's creative capacity and its ability to be innovative. Although investment in human capital is growing, there is still no standard measure of its effectiveness and reporting in companies' balance sheets.

Structural Capital
Structural capital is the supportive infrastructure for human capital. It is the capital which remains in the factory or office when the employees leave at the end of the day. It includes organizational ability, processes, data and patents. Unlike human capital, it is company's' property and can be traded, reproduced and shared by, and within, the organization (Ahangar, 2011). From the above definitions, it is clear that intellectual capital is an important asset which has not been fully recognized and reported in financial statements but contributes significantly to improved financial performance and transformation of organizations.

Comparing Intellectual Capital (IC) and financial performance
There are so many methods available to measure the success of physical capital and assess its impact on financial performance. For measuring the effectiveness or efficiency of the use of the physical capital the well known conventional tools like profit, return on investments (ROI), return on equity (ROE), and return on assets (ROA) can be used, but these are considered to be ineffective for measuring the performance of intellectual capital (Santanu and Amitava, 2009). ROI and ROA and growth rate were adopted as the measure of financial performance (Andrzej and Marian, 2009) and in this paper; we adopted the following financial performance indicators: ROA, Employee Productivity, ROE, Ratio of Market to Book Values and Growth in Revenue.

Tan *et al* (2007) have reported a positive association between intellectual capital of firms and their financial performances. The study of Riahi-Belkaoui (2003) found a positive relationship between Intellectual Capital (IC) and financial performance, while Bontis *et al* (2000) concluded that, regardless of industry, the development of structural capital has a positive impact on business performance. On the other hand, Firer and Williams (2003) examined the relationship between IC and traditional measures of firm performance (ROA, ROE) and failed to establish

any relationship, while Chen *et al* (2005), using the same methodology, concluded that Intellectual Capital (IC) has an significant impact on profitability.

Despite these various studies, no one has compared the deviations among the intellectual capital components and related them to the deviations in the financial performance variables. Hence this present study centers on comparing the deviations among the intellectual capital components of different banks in Nigeria and relating these deviations to the differences in the financial performance variables in order to find out if the deviations in Intellectual Capital (IC) can explain the differences of the banks in Nigeria. Following from the above, the following Hypotheses will guide this study:

H_0: There are no significant differences among the critical intellectual capital and financial performance indices of deposit money banks in Nigeria.
For ease of analysis, this hypothesis is further broken down as:
H_1: There are no significant differences among the critical intellectual capital indices of deposit money banks in Nigeria
H_2: There are significant differences among the critical financial performance indices of deposit money banks in Nigeria

METHODOLOGY

This section of the paper first identifies and describes the proxies used for the research variables. The model for the Duncan Multiple Range Test (DMRT) of ANOVA is outlined at the latter part of the section. Data were computed from the annual report of the banks of study for a period of thirteen years (2000-2012). 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 Nigeria Stock Exchange (NSE).

Description of the Research Variables
For the purpose of conducting the analysis in this study, five variables, which are proxies for financial performance, were taken into account, namely: Return on Assets (ROA), Return on Equity (ROE), Employee Productivity (log EP), Growth in Revenues (GR) and Market to Book value ratio (MB). Presently, there is no specific theoretical perspective or adequate empirical evidence that supports the superiority of any specific proxy measure over the others. It was, therefore, decided that for the purposes of the study, to adopt the commonly used proxy measures of financial performance.

Financial Performance Variables
(1) Return on Assets (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 reports; (Williams and Firer, 2003; Chen, et al ,2005). It is expressed mathematically as:
ROA= Net Income / Total Assets

(2) Return on Equity (ROE): Measures an organization's profitability by revealing how much profit the organization generates with the money shareholders have invested. It is expressed mathematically as: ROE = Net Income / Shareholder's Equity

(3) Employee Productivity (log EP): Employee Productivity is a measure for the net revenue per employee, which reflects employees' productive capability (Chen, Cheng and Hwang, 2005; Najibullah, 2005). It is calculated as follows: EP = Total Revenue for the period/ number of employees. Using the Duncan Multiple Range Test (DMRT) of ANOVA for analysis we used natural log of EP (LEP).

(4) Growth in Revenue (GR): Growth in Revenue measures the changes in firm's current year's sales over last year's sales. Increase in sales signals the firm's growth prospect (Chen, Cheng and Hwang, 2005; Najibullah, 2005). It is calculated as:

GR= (a given year's revenue – the preceding year's revenue) / the preceding year's revenue *100

(5) Market Value to Book Value ratio (MB): This ratio shows the relationship between the market value per share and book value per share for each bank. While the market values per share were sourced from the Nigeria Stock Exchange reports, the book values per share were calculated from the balance sheet figures for each bank for the period covered in this study.

(6) Employee Productivity (log EP): Employee Productivity is a measure for the net revenue per employee, which reflects employees' productive capability (Chen, Cheng and Hwang, 2005; Najibullah, 2005). It is calculated as follows: EP = Total Revenue for the period/ number of employees. Using the Duncan Multiple Range Test (DMRT) of ANOVA for analysis we adopted the natural log of EP (LEP).

Description of the Intellectual Capital Variables
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 use of three component coefficients as follows: Capital Employed Efficiency, Human Capital Efficiency, and Structural Capital Efficiency. Pulic (1998, 2000a) opines that VAIC is an analytical procedure 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:

(a) Human Capital Efficiency (HCE) – indicator of value added efficiency of human capital. Total salary and wage costs are an indicators of a firm's human capital (HC) and

(b) 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.

Equation (1) formalizes the VAIC relationship algebraically:

VAIC = CEE + HCE + SCE---------------------------------- [Equation (1)]

Where: VAIC = VA intellectual coefficient of the banks,

 CEE = capital employed efficiency coefficient of the banks,

HCE = human capital efficiency coefficient of the bank and

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 firm's 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 algebraic equation:

VA = I + DP + D + T + M + R + WS --------------------------- [Equation (2)]

Where**:** VA(value added) for the banks are computed as the sum of interest expenses (I); depreciation expenses (DP); dividends (D); corporate taxes (T); equity of minority shareholders in net income of subsidiaries (M); and profits retained for the year (R) wages and salaries.

Alternatively, VA can be calculated by deducting operating expenses (materials costs, maintenance costs, other external costs) from operating revenues. (Pulic 1998).

Pulic (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 assets.

Equation (3) presents the CEE relationship algebraically:

CEE = VA/CE -- Equation (3)

Where: CEE = capital employed efficiency coefficient of the banks,

       VA = VA of the banks; and

       CE = book value of the net assets of the banks.

Consistent with views of other leading Intellectual Capital researchers (such as, Edvinsson, 1997; Sveiby, 2001), Pulic (1998) argues that total salary and wage costs are indicators of a firm's human capital (HC).

HCE, therefore, is calculated as the ratio of total VA divided by the total salary and wages spent by the firm on its employees.

Equation (4) shows this relationship algebraically as follows:

HCE = VA/HC --- Equation (4)

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

       VA = VA of the banks. and

       HC = total salary and wage costs 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 --- [Equation (5)]

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 base, the less Human Capital participates in value creation; the more Structural Capital is involved. Consequently, Pulic (1998) argues the formula 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. This relationship is shown in Equation (6):

SCE = SC/ VA -- [Equation (6)]

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

SC = Structural capital of the banks; and

VA = VA of the banks.

The above hypotheses were tested using the following Duncan Multiple Range Test (DMRT) of ANOVA model:

$$H_0: \quad \mu = \mu^{(ROA_{1\ldots6})}$$
$$\mu = \mu^{(ROE_{1\ldots6})}$$
$$\mu = \mu^{(\log EP_{1\ldots6})}$$
$$\mu = \mu^{(GR_{1\ldots6})}$$
$$\mu = \mu^{(MB_{1\ldots6})}$$
$$\mu = \mu^{(HCE_{1\ldots6})}$$
$$\mu = \mu^{(SCE_{1\ldots6})}$$
$$\mu = \mu^{(CEE_{1\ldots6})}$$
$$\mu = \mu^{(VAIC_{1\ldots6})}$$
$$\mu = \mu^{(DER_{1\ldots6})}$$
$$\mu = \mu^{(PC_{1\ldots6})}$$
$$\mu = \mu^{(ATO_{1\ldots6})}$$

$$H_1: \quad \mu \neq \mu^{(ROA_{1\ldots6})}$$
$$\mu \neq \mu^{(ROE_{1\ldots6})}$$
$$\mu \neq \mu^{(\log EP_{1\ldots6})}$$
$$\mu \neq \mu^{(GR_{1\ldots6})}$$
$$\mu \neq \mu^{(MB_{1\ldots6})}$$
$$\mu \neq \mu^{(HCE_{1\ldots6})}$$
$$\mu \neq \mu^{(SCE_{1\ldots6})}$$
$$\mu \neq \mu^{(CEE_{1\ldots6})}$$
$$\mu \neq \mu^{(VAIC_{1\ldots6})}$$
$$\mu \neq \mu^{(DER_{1\ldots6})}$$
$$\mu \neq \mu^{(PC_{1\ldots6})}$$
$$\mu \neq \mu^{(ATO_{1\ldots6})}$$

Where: $ROA_{1\ldots6}$ represent the Return on Assets of the six selected banks

: $ROE_{1\ldots6}$ represent the Return on Equity of the six selected banks

: $EP_{1\ldots6}$ represent the employee productivity of the six selected banks

: $GR_{1\ldots6}$ represent the Growth in revenue of the six selected banks

: $MB_{1\ldots6}$ represent the market to book value ratio of the six selected banks

: $HCE_{1\ldots6}$ represent the human capital efficiency of the six selected banks

: $SCE_{1\ldots6}$ represent the Structural capital efficiency of the six selected banks

: $CEE_{1\ldots6}$ represent the capital employed efficiency of the six selected banks

: $VAIC_{1\ldots6}$ represent the value added intellectual coefficient indices of the six selected banks

: $DER_{1\ldots6}$ represent the Debt to Equity ratio of the six selected banks

: $PC_{1\ldots6}$ represent the physical capital to total assets ratio of the six selected banks

: $ATO_{1\ldots6}$ represent the Asset turnover ratio of the six selected banks

ANALYSIS AND DISCUSSIONS

Table 1.0: Analysis of Variance (ANOVA) of means of operational variables among the six banks in Nigeria considered in the study for the period of 2000-2011

BANK	ROA	ROE	LOG EP	GR	MB	HCE	SCE	CEE	VAIC	DER	PC	ATO
Eco bank	0.15b	8.45b	7.33a	41.56b	0.09f	3.06d	0.71b	2.50b	6.27c	0.84c	11.06a	14.29a
UBA	4.83a	16.80a	4.31e	10.92f	0.20e	4.27b	0.71b	0.68e	5.56d	0.88b	6.76b	10.36d
Diamond	0.03c	0.09d	4.13f	53.78a	0.39c	3.59c	0.71b	0.13e	4.37e	0.83c	0.14f	0.36e
Zenith	0.03c	0.22c	7.17b	37.64c	0.28d	4.83a	1.04a	1.77c	6.90a	0.83c	5.58c	12.17b
Union Bank	-0.03e	0.01e	6.94d	17.85e	2.43b	1.29e	-0.16d	1.24d	2.37f	0.90a	4.14d	11.93b
First Bank	0.02d	0.22c	6.98c	25.41d	3.26a	2.92e	0.65c	2.89a	6.46b	0.87b	2.67e	11.64e
Sig. Level	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Key: figures with different alphabets are significantly different from each other. Those with same alphabet are statistically the same

The Table 1.0 above shows results of mean separation of the operational variables considered in the study using Duncan Multiple Range Test (DMRT) of ANOVA across the six selected banks in Nigeria. The interpretation is presented thus:
(1)Results of ANOVA conducted across the banks for Return on Assets (ROA), revealed that the mean value for UBA(4.83) is highest and significantly different from those of other banks; this is followed by mean value for ECO Bank(0.15) which is significantly higher than mean value of other banks; following ECO bank was Diamond(0.03), Zenith(0.03) and First Banks(0.03) whose mean values were same but significantly higher than that of Union Bank(-0.03).
(2) For ROE, the mean value for UBA (16.80) is again the highest and significantly different from those of the other banks; this is followed by that of ECO Bank(8.45) which is significantly different from the mean value of the other banks. Following ECO Bank are Zenith Bank(0.22) and First Bank (0.22) which have the same value of mean but significantly different from the other banks. Zenith Bank and First Bank is followed by Diamond Bank(0.09) which is significantly different from that of Union bank(0.01).
(3) For the Log of EP, the mean value for ECO Bank (7.33) is the highest and significantly different from those of the other banks; this is followed by that of Zenith Bank (7.17) which is significantly higher than the mean value of the other banks. Zenith bank is followed by First Bank (6.98) which is significantly different from the other Banks. Following First Bank is Union Bank (6.94) and it also significantly different from the remaining banks. Union Bank is followed by that of UBA (4.31) which is significantly different from the other banks. Diamond bank(4.13) has the least mean value in this study and it is significantly different from those of the other Bank.
(4) For the GR, the mean value of Diamond Bank (53.78) is the highest and it is significantly different from those of the other banks. This is followed by the mean value of ECO Bank (41.56), which is also different from those of the other remaining banks. Following ECO Bank is the mean value of Zenith Bank (37.54), which is significantly higher than the other banks. Next was mean value of First Bank (25.41); thereafter are Union Bank (17.85) and lastly UBA (10.92). The mean values in the GR of the banks are significantly different from one another.

(5) For the MB, the mean value of First Bank (3.26) is again the highest and significantly different from those of the other banks; this is followed by that of Union Bank (2.43) which is also significantly higher than the mean value of the other banks. Next is Diamond Bank (0.39) whose mean value is also significantly higher than those of other banks. Thereafter is Zenith Bank (0.28) which is significantly different from that of UBA (0.20). The MB of UBA is significantly higher than that of ECO Bank (0.09).

(6) The bank with the highest performance in terms of its HCE is Zenith Bank and its mean value (4.83) is significantly higher than that of the other banks. Zenith Bank is followed by that of UBA (4.27) which is also significantly higher than those of other banks. Following thereafter is that of Diamond Bank (3.59), and it is also significantly higher from those of the other banks. Next is ECO Bank (3.06), which is again significantly higher than those of First Bank (2.92) and then Union Bank (2.29). These last two are not significantly different from each other in terms of their HCE performance.

(7) For the SCE, the bank with the highest performance in terms of its SCE in this study is again Zenith Bank (1.04) and its mean value is significantly higher than that of the other banks. Zenith Bank is followed by that of UBA, ECO Bank, and Diamond Bank. These three are not significantly different from each other as they have a value of 0.71 each. Following them is First Bank (0.65) which is significantly higher than that of Union Bank (-0.16).

(8) For the CEE, the bank with the highest performance in terms of its CEE in this study is First Bank and its mean value (2.89) is significantly higher than that of the other banks. First Bank is followed by that of ECO Bank (2.50) which is also significantly higher than those of the other banks. Following ECO Bank is that of Zenith Bank (1.77), and it is also significantly higher than those of the other banks. Next is Union Bank (1.24), which is again significantly different from those of UBA Bank (0.68) and then Diamond Bank.(0.13) These last two are not significantly different from each other in terms of their CEE performance.

For VAIC the results show that the mean value for Zenith Bank (6.90) is significantly higher than those of other banks. Next is the mean value for First Bank (6.46) which also significantly higher than those of other banks. The mean value of ECO bank (6.27) was third and still significantly higher than others. Following ECO Bank is UBA with mean Value of 5.56 which is higher than those of Diamond Bank (4.37) and Union Bank (2.37)

(9) For the DER, the mean value of Union Bank (0.90) is the highest and it is significantly different from those of the other banks. This is followed by the mean value of UBA (0.88) and First Bank (0.87). The mean values of these two banks are not significantly different from each other. They are followed by those of Zenith (0.83), Diamond (0.83) and ECO Bank (0.84) which is also not significantly different from each other.

(10) For the PC, the mean value of ECO Bank (11.06) is the highest and it is significantly higher than those of the other banks. This is followed by the mean value of UBA (6.76), which is also significantly higher than those of the other banks. Following UBA Bank is the mean value of Zenith Bank (5.58), which is significantly higher than those of the other banks. The mean value of Union Bank (4.14) follows next, thereafter; that of First Ban (2.67)k and lastly that of Diamond Bank (0.14). The mean values in the PC of the banks are significantly different from one another.

(11) For the ATO, the bank with the highest performance in terms of its ATO in this study is ECO Bank and its mean value (14.29) is significantly higher than that of the other banks. ECO Bank is followed by that of Zenith Bank (12.17), Union Bank (11.93) and First bank (11.64).

These three are not significantly different from one another but they are significantly different from that of the other banks. They are followed by the mean value of UBA (10.36) which is also significantly higher than that of Diamond Bank (0.36).

CONCLUSIONS & RECOMMENDATIONS

This current research paper examined and compared the deviations in the intellectual capital components of six highly rated banks in Nigeria as well as the corresponding financial performance indicators of the same banks. The study sought to establish a relationship between the intellectual capital components and the financial performance indicators of deposit money banks operating in Nigeria. Specifically, the study appraised the degree of relationship existing between the intellectual capitals and the financial performance indicators of the banks. It tried to find out if the deviations in the intellectual capital components of these banks can explain the deviations in the banks' financial performance indices among developing economies with a specific focus on the deposit money banks in Nigeria. The study adopted the Value Added Intellectual Coefficient (VAIC) approach developed by Pulic Ante in calculating the intellectual capital components. Hypotheses were formulated for the study and they dealt with the comparison of the intellectual capital components of the six deposit money banks in Nigeria selected for the study and also compared the financial performance indicators as proxied by ROA, ROE, Employee Productivity, growth in revenue, ratio of market to book values, Asset Turnover, physical capital ratio and debt to equity ratio. In respect of the hypotheses, the results as shown in table 1 showed the results of the analysis. From the analyses and interpretations, it is discovered that there were significant deviations in both the financial performance indicators and in the intellectual capital variables among the six banks studied. The results further showed that the banks are statistically different in both the intellectual capital indices and in the financial performance indicators. The study also established that the banks with high intellectual capital also recorded high financial performance and therefore recommends that all banks should embrace this new intellectually based technology in order to enhance their financial performances, returns to their different stakeholders as well as in their service delivery to their customers. It also established that there is a positive correlation between intellectual capital indices and the financial performance indicators of the deposit money banks in Nigeria.. It is therefore recommended that adequate attention should be paid on the banks' human capital as the most important asset to the banks. Constant and regular training of employees is also in all aspect of the banks' operations is very strongly recommended because it is established that regular training programmes will positively impact on the employee performances and service delivery thereby boosting their financial performance indicators. Following from the discussions above, it is considered that since Human Capital and Structural Capital make up Intellectual Capital; it implies that there is a strong significant and positive effect of Intellectual Capital on the financial performance indicators of deposit money banks in Nigeria. This is of special importance to the management of banks in Nigeria and entire service industry; that should adequate working environment be created for workers, with good welfare package, and good training programmes, the banks are bound to continue to flourish.

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* Vol. *5*(1), pp. 88-95, 4 January, 2011. http://www.academicjournals.org/AJBM.

Bontis, N, Chua, W., Richardson S. (2000). Intellectual capital and the nature of business in Malaysia. *Journal of Intellectual Capital*, *1*(1), 85-100.

Bornemann, M (1999): *"Empirical Analysis of the Intellectual Potential of Value Systems in Austria According to the VAIC". Journal of Intellectual. Capital*, 3(5):16-43.

Campisi, D., and R. Costa,(2008), *"A DEA-Based Method to Enhance Intellectual Capital Management"*, *Journal Knowledge and Process Management,* 15(3), 170–183.

Chen, M. C., Cheng, S. J., & 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.

Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning, 30* (3), 320-373.

Edvinsson L., Malone M. S. (1997). Intellectual capital: The proven way to establish your company's real value by measuring its hidden brainpower. London: Judy Piatkus.

Engstrom, T. E. J., Westnes, P., & Westnes, S. F. (2003). Evaluating intellectual capital in the hotel industry. *Journal of Intellectual Capital, 4* (3), 287-303.

Ekwe Michael Chidiebere, (2013), **'**The Relationship between Intellectual Capitals and Growth in Revenue of Deposit Money Banks in Nigeria' *Research Journal of Finance and Accounting,* Vol. 4 No 12 Hong Kong, China, Pp 55 – 64. Available online at http://www.iiste.org/Journals/index.php/RJFA/article/view/7759/7801

Firer, S. & Williams, S. M. (2003). Intellectual capital and traditional measures of corporate performance. *Journal of Intellectual Capital*, *4* (3), 348-360.

Frederiksen, J. and Westphalen, S.Å. (1998) "*Human resource accounting: interest and conflicts"*. A discussion paper. Presented at the European Centre for the Development of Vocational Training, Thessaloniki.

Kamath, G. B. (2007). The Intellectual Capital Performance of the Indian Banking Sector. *Journal of Intellectual Capital, 8*(1): 96-123.

Najibullah Syed (2005), *"An Empirical Investigation of the Relationship between   Intellectual Capital and Firms' Market Value and Financial Performance in   Context of Commercial Banks of Bangladesh"*. Available Online

Organization for Economic Co-operation and Development **(**2001**), "***The Well-Being of Nations, The Role of Human and Social Capital"*, Centre for Education Research and Innovation, OECD.

Petty, R., and J. Guthrie, (2000), *"Intellectual capital literature review: Measurement, reporting and management"*, Journal of Intellectual Capital**,** 1(2): 155-176.

Polasek W., Wolfgang S., & Richard S., (2011), *"Human Capital and Regional Growth in Switzerland",* Review of Economic Analysis. Available Online.

Pulic, A. (1998). Measuring the performance of intellectual potential in knowledge economy, available at: http://www.measuring ip.at/Opapers/Pulic/Vaictxt.vaictxt.html (accessed 4 November 2008).

Pulic, A. (2000). MVA and VAIC analysis of randomly selected companies from FTSE 250, available at: http://www.vaic-on.net/downloads/ftse30.pdf (accessed 2 September 2008).

Riahi-Belkaoui A., (2003). Intellectual capital and firm performance of U. S. multinational firms. *Journal of Intellectual Capital*, *4*(2): 215-226.

Saint-Onge, H., (1996). Tacit knowledge: the key to the strategic alignment of intellectual capital. Strategic Leadership, *24*(2): 10-14.

Stewart, T. (1997). *Intellectual capital: the new wealth of organizations*. New York, NY. Doubleday.