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Website: www.aarf.asia Email : editor@aarf.asia , editoraarf@gmail.com

EFFECT OF INTELLECTUAL CAPITAL ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN NIGERIA

EKECHUKWU CHIJIOKE
Banking and Finance Department,
Faculty of Management Sciences
Enugu State University of Science and Technology, Enugu, Nigeria

UGWU TIMOTHY CHIDUBEM
Department Accountancy
Faculty of Management Sciences
Enugu State University of Science and Technology, Enugu, Nigeria

MBAH PAULINUS CHIGOZIE
Business Administration Department
Faculty of Management Sciences
Enugu State University of Science and Technology, Enugu, Nigeria

Abstract

The purpose of the study is to investigate the effect of intellectual capital on financial performance of commercial banks in Nigeria. The data were gathered from a sample of (2) two Nigerian commercial banks' annual reports and accounts for (10) ten years (2007-2017). The research work makes use of value added intellectual coefficient (VAIC) method. Human capital efficiency) (HC), structural capital efficiency (SC) and Relational Capital efficiency (RC) are used as intellectual capital components efficiencies, while Return on Capital Employed (ROA) was used as a measure of financial performances using multiple regression technique, E-view 9.0 software package. The result shows positive influence of intellectual capital on financial performance. This result is consistent with existing literature which points out positive effect of intellectual capital on firm performance. A firm's human capital is an important source of sustained competitive advantage. Conclusively it was recommended that the firms should emback on policy that will improve their employees' skill such as training and development and good welfare package. Embracing rigorous selection procedure and matching the right people with the right jobs. Academic qualifications and work experience should be considered during selection in order to obtain the maximum benefit of intellectual capital in increasing the financial performance of commercial banks in Nigeria.

Keywords: *Intellectual Capital, Financial Performance*

1.1 Introduction

The global economy has for the past few decades witnessed gradual transition from industrial based environment, with a focus on physical assets such as factories' plants, machines and equipment, to a high technology information and innovation based environments, which focuses on experience, talent, creativity, skills, dedication and experience of people in the organization (the intellectual capital) (Ekwe,2006).

The knowledge, ability, skills, experience and attitude of workers assume greater significance in contemporary performance hitherto the earlier emphasis on physical assets like plants, machinery, materials, equipment etc. which made up the bulk of the organization's assets and value. Intellectual capital (IC) can be described as the knowledge based equity of organizations and has for the last decade attracted significant amount of practical interest (Campisi, and Costa 2008, Petty and Guthrie 2000).

The search for the most appropriate method of measuring intellectual capital made pulic in 1998 to develop the most popular method that measures the efficiency of value added by corporate intellectual ability (Value Added Intellectual Coefficient – VAIC). The VAIC method measures the efficiency of three types of inputs: Capital employed (physical and financial), human capital and structural capital (Firer and Williams 2003; Montequin, Fenandez, Cabal and Gutierrez, 2006, Pulic 1998, 2000a, 2000b, Puntilo 2009).

The valuation of companies has progressively, been developing changes over the last 20 years, by putting great interest on proportion of intangible assets like knowledge, competence, brands and systems (Mayo, 2001). He further stated that these assets are known as the intellectual capital of the organization. And unless business invest in people to reverse trend of discounting the value of non-human capital, both technology and management system will fail as the situation become more complex and require more people who can think for themselves and adopt information. (Gordon 2001).

Accountants and economists are struggling to find a way for a business to measure the intangible assets of human-capital development. To find their added value to the business especially, now that the world, economics are undergoing transformation and changing from manual to knowledge intensive activities (Makki, Lodhi and Rohra 2009). Which is basically intellectual capital.

The rules of business are being rewritten the traditional era enterprise models are no longer adequate to meet the dynamic condition of a changing world market and the information needed by investors to make strategic decision (Okwy and Christopher 2010, Abeysekera 2007, Garcia-Ayuso 2003). This shows that there is need to examine the impact of IC resources on the company performance. This knowledge based economy compelled many companies and countries to plan strategies for repositioning in emerging knowledge economy if they desire to remain competitive.

Business performance is an important and necessary concept that considers the way and manner in which financial resources available to an organization are judiciously used to achieve the overall corporate objective of an organization. It is therefore vital that organization's performance be measured on a regular basis in order to ensure sustainability in knowledge economy. Intellectual capital is considered crucial for sustainability and competitiveness of companies regardless of the industrial affiliation (Makki, Lodhi and Rohra 2009). This competitive edge is gained through enhancing value creation efficiency from IC components (Ahangar 2011, Salman, Yahaya and Olarewaju 2012).

In spite of research in this area HRA is not widely accepted in practice due to some reasons. These include questions as to whether it is proper to measure employees, whether employee can be an asset to be included in the financial statements.

1.2 Statement of the Problem

The difference observed between market value and book value of Nigeria commercial banks has attracted the researcher's attention towards investigating the value missing from the financial statements. Intellectual Capital (IC) is therefore perceived to be the hidden value that escapes financial statements and the one that leads organizations to obtain a competitive advantage. Although a firm's market and book values have rarely been the same, but remarkable attention has been drawn because the gap is increasing over the past decades. It is perceived that the growing gap between market value and financial performance is no longer only captured by the production value of material good, but by the creation and utilization of intangibles such as intellectual capital as the source of economic value.

Commercial banks require reliable and adequate measure of financial performance which objectively includes the intrinsic components of intellectual capital and shows its true effect on company value. The missing information of intellectual capital in financial statement attracts attention of the researcher on the problem of reliability and adequacy of traditional accounting methods used by firms in the present information age. Intellectual capital can be the proxy for corporate knowledge. The task of measuring the performance of intellectual capital in organization becomes a major step to investigating the reasons for low or high performance of workers. Hence the measurement of corporate performance needs to include the firm's total resources (physical and intellectual).

Financial performance is the main objective of every business entity ROA is used as the proxy for financial performance. The financial performance is the monetary measurement of result of firms operations. The intellectual capital inefficiency decreases financial performance. Considering the above it is necessary to investigate the effect of intellectual capital on financial performance of commercial banks in Nigeria.

1.3 Objectives of the Study

The main objective of the study is to determine the effect of intellectual capital on financial performance of Commercial banks in Nigeria. To achieve this, the study strives to investigate the following specific objectives.

1. To investigate the extent Human Capital effects Return on Assets of commercial banks in Nigeria.

2. To determine the level of effect of Structural Capital (SC) on Return on Assets of commercial banks in Nigeria.

3. To assess the effect of Relational Capital (RC) on Return on Assets of commercial banks in Nigeria.

1.4 Research Questions

1. To what extent does Human Capital (HC) affect Return on Asset of commercial banks in Nigeria.

2. What level of effect does Structural Capital (SC) has on Return on Asset of commercial banks in Nigeria.

3. What is the effect of Relational Capital (RC) on Return on Assets of commercial banks in Nigeria?

1.5 Statement of Hypotheses

1. The Human Capital (HC) has no significant effect on Return on Assets of commercial banks in Nigeria.

2. The structural Capital (SC) has no significant effect on the Return on Assets of commercial banks in Nigeria.

3. The Relational Capital (RC) has no positive effect on Return on Assets of commercial banks in Nigeria.

Review of Related Literature

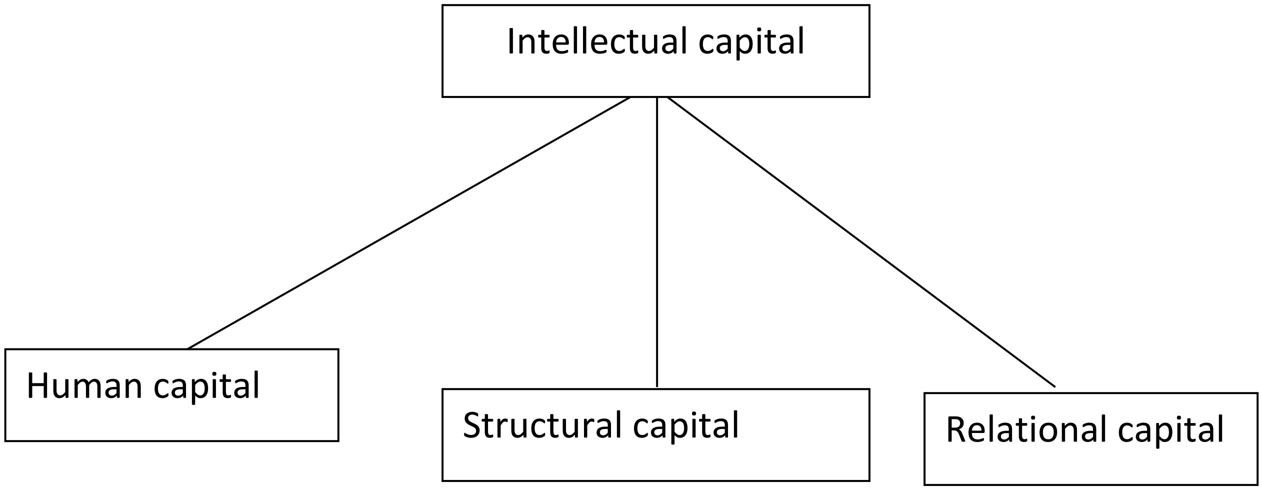
2.1.1 Conceptual Framework

Intellectual capital is most useful in improving the financial performance when organizational members assess their core competencies. These are areas where they can achieve "the best in-the-world" status. The intellectual capital of an organization represents the wealth of ideas and ability to innovate which will determine the future of the organization. Many definitions have been propounded by different scholars and researchers. According to Thomas Stweart 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 as the sum of everything everybody in your company knows that gives your company a competitive edge in the market place" He further emphasized that for knowledge to be tagged IC the knowledge must be capable of being used to create wealth.

Firm's market value exceeding its book value has been defined as intellectual capital (Edvinsson and Malone, 1997). Intellectual capital is recognized as a major corporate asset capable of generating sustainable competitive advantages and superior financial performance (Barney, 1991).

Stewart (1997) defines intellectual capital as the intellectual material that has been formalized, captured and leveraged to create wealth by producing a higher valued asset. Bontis (2007) among others states that intellectual capital is defined as encompassing; Human capital, structural capital and relational capital. He further sub divided Human capital into – Learning and education, experience and expertise, innovation and creation. The structural capital is sub-categorized into systems and programs, Research and development, Intellectual proprietary rights while Relational capital comprises of strategic alliances, licensing, and agreement, Relation with partners, suppliers and customer, knowledge about partners, suppliers and customers.

Human Capital (HC): This is stated as the skills, ability, knowledge and experience that the employees take with them when they leave the company (Roos and Roos 1997).
Some of this skill is unique to the individual while some may be generic (Ting and Lean 2009). Examples are creativity, experience, team work capability, Innovation capability, learning capability, formal training and education, vocational qualification, flexibility and know-how (Ramat *et al* 2012).
The new source of wealth is not material, but is information and knowledge (Edvinson and Malone 1997).



Overview on the IC and its connectivity from the theory proposed by the meritum project.
All the above mentioned three categories, human capital, structural capital and relational are necessary to create value for a company. If one of the categories is absent, the chance of success is minimal. The human capital refers to the knowledge and skills of the employees, structural capital refer to the knowledge kept behind in the firm at the end of the day and relational capital all the resources that are externally linked to the organization.

Other Challenges of Human Resource accounting in Nigeria

1. No specific and clear cut guidelines for finding cost and value of human resources of an organization.

2. The life of human resources is uncertain and therefore valuing them under uncertainty seems unrealistic.

3. Tax laws do not recognize human resources as assets. This has reduced the concept to a theoretical concept. If the international accounting standard board makes it mandatory to disclose the values of human assets, then tax authority will take into concern Human Resource Accounting.

4. No law, standards or guidelines backing and enforcing the application of Human Resource accounting.

2.11 Structural Capital (SC)

Structural capital is owned by the firm and remains with it even when the worker leaves the organization (Anuonye 2016). This is defined as the knowledge that stays within the company

(Bontis 1998). It includes organizational processes, routines procedures, system, norms, cultures and databases. For example, the use of information technology device and organizational learning capability, management philosophy, corporation culture, management processes, networking system, patent, trade mark and copy right. Strong structural capital possesses supportive environment to its employee, thus increasing productivity theory of profit and decreasing total cost of product (Bozbura 2004) structural capital is calculated as the difference between value Added and human capital.

2.13 Relational Capital

It is the loyalty and preference of customers over a brand in use of other products and services. Relational capital is the relationship which an organization has with external groups and persons over time. It includes trade relationship with past, present and potential customers, suppliers, partners and the public at large. High relational capital is obtained when there is a high degree of salesmanship and marketability of sales team and open access to customers (Soumet 2007).

2.14 Return on Assets (ROA)

A higher return on assets means that the company is using its Assets efficiently and effectively. An increase in the ROA is an indication of improved profitability and improved performance of a company (Flamholtz 1999).

The return on assets (ROA) is calculated by dividing the net income of a company by its total assets or profit before interest and tax divided by the total assets. The profit before interest and tax is best suited because taxes are not controllable by management and firms' opportunities for availing tax incentives differ. (Pandey 2010).

2.2 Theoretical Framework

Intellectual capital theoretical framework models and definitions have been formulated through which the present day of Intellectual capital measurement is derived.

The value Added intellectual coefficient (VAIC) methodology developed by Ante Pulic in 1998 formed the underlying theoretical framework for intellectual capital variable in this study.

2.3 Empirical Review

Maditinos et al (2011) examined IC and financial performance of public listed companies in Greece. The study reveals that IC components are not significantly correlated with companies' financial performance. Appuhami (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.

Ting and Lean (2009) examined IC value added efficiency on financial performance of Malaysia companies and found that IC value efficiency is associated with profitability of sampled companies. Roos et al (1977) and Bontis et al (2000) believe that intellectual capital is recognized as a set of intangible assets such as resources, competences and capabilities which increase not only firm performance but also lead for organizational value creation Gralbraith (1996) sees intellectual capital as a form of knowledge intellect, brain activity which uses knowledge as a source of value creation. Intellectual Capital is recognized as an aggregation of all knowledge and competences of employees that can bring competitive advantages for the organizations (Stewart 1997). It has been argued that employee knowledge capabilities, creativity and innovation, organizational structure or relational issues can be recognized as intellectual capital due to its conversion of employee implicit knowledge into explicit knowledge of the organization Shaikh (2004).

Generally three components of IC have been identified comprising human, structural and customer capital (Edvinsson 2000, Bontis 1998, Bontis et al 2000).

Previous studies Barney 1991, Bassi and Van Buren 1999, Bontis et al 2000, Pulic 2000, Appuhami 2007) confirm a very strong and positive relationship between intellectual capital and business performance.

Reed (2000) tests the association between intellectual and companies' performance in the banking industry, the result suggest that intellectual capital is a strong factor of a company's performance. Goh (2005) conclude that physical capital is crucial for financial institutions operations but it is eventually the intellectual capital that determines the quality of services provided to the customers. Nielson et al (2006) propose that human resources capital is the core of intellectual components; they include skilled staff, knowledge and management philosophy which the company's performance has been affected.

Riahi-Belkaoui (2003) examines the relationship between intellectual capital and the performance of multi-national companies in the United States of America. The result of the study supports the notion that intellectual capital is positively associated with financial performances.

Low (2000) identifies the importance of non-financial intangibles (intellectual capital) and examined their role in a company's performance. The findings suggest that improvement in critical intangible resources result in increased market value Chen et al (2005) find the intellectual capital and physical capital have a positive impact on market return as well as on current and future financial performance in the database of Taiwanese firms.

Despite all the positive derivations by scholars firer and Stainbank (2003) discover a negative relationship between intellectual capital and business performances in the South African economy and came to the conclusion that intellectual capital has no positive relationship on business performance nor a positive influence on analysts and investors.

Chu et al (2011) in Uadiale and Uwuigbe (2011) examine the impact of intellectual capital on business performance in Hong Kong. They find that there was no relationship between intellectual capital (value added intellectual capital and the components of business performance market to book value, return on asset and asset turnover).

Firer and Williams (2003) found no relationship between IC components efficiency and financial performance of South Africa companies. Likewise the study of Kujansivu and Lonnqvist (2007) do not find clear evidence of the relationship between IC and company performance of Finland companies.

The impact of IC on company's performance has various studies with mixed and inconsistencies of results found in different countries this makes the study necessary.

Huselid (1995) examined the relationship between Human Resources (HR) practices and firm performance. He surveyed senior HR executives in a sample of 968 publicly traded corporations in the US regarding the percentage of employees who were covered by a set of HR practices generally considered representative of a high performance work system. He found that there is a positive influence between HR and organization performance.

Using a sample of 32 audited financial statements of quoted companies in Nigeria, Uadiale and Uwuegbe (2011) examine the impact of intellectual capital components on business performance measured with Return on Equity (ROE) and Return on Assets (ROA). Their results show that intellectual capital has a positive and significant relationship with the performance of business organization in Nigeria.

Clarke, Seng and Whiting (2010) using pulic's VAIC examine the effect of intellectual capital on firm's performance in Australian listed companies between 2004 and 2008. The results suggest that there is a direct relationship between IC and the performance of Australian publicly listed firms, particularly with capital employed efficiency and to lesser extent, human capital efficiency. They further found a positive relationship between human and structural capital components in the prior and current years' performance of the firms. Their findings also suggest the possibility of moderating relationship between IC components and physical and financial capital which impact on a firm's performance using the VAIC model, Javornik, Tekarcic and Marc (2012) studied more than 1200 solvenian companies between 1995 and 2008 and found a high degree of correspondence between the improvement in the rank of company's IC investment efficiency and the improvement in rank of its financial performance in the peer group.

Onyekwelu, Oko and Iyidiobi (2007) investigated the effect of intellectual capital on financial performance of Banks in Nigeria using VAIC model of measurement of intellectual capitals. The result showed positive and significant effect of intellectual capital on Banks financial performance.

Rehman, Rehman and Zahid (2011) examine intellectual capital and its impact on corporate performance in 12 modaraba companies in Pakistan using the VAIC components of human capital. Capital employed and structural capital. The empirical result showed that the most important components of intellectual capital performance are Human Capital Efficiency which helps to boost financial performance of firms.

In a study to explore the relationship between intellectual capital and business performance in Iraqi Industries, Ahmed and Mushraf (2011) investigate whether intellectual capital has a direct effect on business performance. They affirm that intellectual capital is becoming the pre-eminent resource for creating economic wealth. Tangible assets such as property, plants, and equipment continue to be important factors in the production of goods and services though however, their relative importance has decreased over time as the assets become more capital intensive.. Intellectual based assets have increased in terms of their importance and relevance in the financial performance of firms globally.

Methodology

The research is on the effect of intellectual capital on financial performance (ROA) of commercial banks in Nigeria with the aim of determining the contributions of intellectual capital on organizational financial performance. The research adopted the ex-post factor research design. This is appropriate because *ex-post facto* determines the cause-effect relationship among

variables or the effect of one variable on another. The research will make use of secondary data from annual reports and accounts of commercial banks in Nigeria for the period 2007 to 2017.
The research makes use of value Added Intellectual Coefficient (VAIC) method.
The geographical area covered by the study in the whole country Nigeria. The commercial banks that are quoted on the Nigerian stock exchange as at the time of the research 2007 to 2017.
The study will make use of secondary data from annual financial statements covering 2007-2017 of Commercial banks in Nigeria, Journals of accounting and other related disciplines, textbooks and Internet websites.
In this study the population is made up of the twenty two (22) commercial banks in Nigeria as at 2017. Out of which two (2) commercial banks viz First bank Plc and Zennith bank Plc were selected based on accessibility of their annual reports and accounts in the Nigerian Stock Exchange. The period under review was also a factor in choosing the two commercial banks for the sample because they have complete data.

Data Presentation and Analysis

Table 4.1 Logged data Obtained from the sampled banks

Years	HC	SC	RC	ROA
2007	10454012	32886312	60133	0.18
2008	10420320	36691833	25322	0.22
2009	12826763	49390331	44942	0.31
2010	12820792	58605175	27634	0.36
2011	14415149	64349308	100517	0.39
2012	15488384	68167817	67124	0.39
2013	17230447	90839242	40400	0.27
2014	23919971	104033841	81674	0.22
2015	27645906	88863416	207194	0.25
2016	28817068	89613468	140204	0.18
2017	28231487	89238442	173699	0.09
2007	4549046	16067088	96234	0.23
2008	4513645	21899377	54016	0.1
2009	4840650	25713228	138453	0.16
2010	5470571	27877478	146115	0.23
2011	7317750	33503086	187069	0.26
2012	7921507	34856040	77926	0.25
2013	7117637	41672771	50774	0.27
2014	8242215	30481783	139909	0.2
2015	9219080	30793515	40154	0.14
2016	491650	26985531	11406	0.09
2017	564015	27737893	11207	0.09

Source: Annual Account and Reports of First Bank and Zenith Bank Plc

The data presented on table 4.1 were used for the analysis. The data were first stabilized by taking the logarithmic transformation of the original data (Table 4.1). The logged data were observed not to be stationary and were made stationary by differencing each series. These operations were done basically to avoid spurious regression result.

Test of Hypothesis

Table 4.2 Regression analysis result

Dependent Variable: ROA

Method: Least Squares

Test of Hypothesis

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Dependent Variable: ROA

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.309581	0.740713	-0.417950	0.6809
HC	0.050434	0.004396	11.473505	0.0000
SC	0.002883	0.000384	9.053012	0.0000
RC	0.019956	0.002308	8.644635	0.0001

R-squared	0.836591	Mean dependent var	0.221818
Adjusted R-squared	0.109356	S.D. dependent var	0.090692
S.E. of regression	0.085590	Akaike info criterion	-1.915531
Sum squared reside	0.131862	Schwarz criterion	-1.717160
Log likelihood	25.07084	Hannan-Quinn criter.	-1.868801
F-statistic	98.59479	Durbin-Watson stat	2.091577
Prob(F-statistic)	0.000003		

The result of the multiple regression analysis above shows that the human capital (HC) was significant at 1% level of significance (ie P<0.01). Therefore, the hypothesis that human capital (HC) has no effect on ROA of Nigeria breweries firms is rejected.

Also, the structural capital SC was significant at 1% level of significance (i.e. p<0.01). Therefore, the hypothesis that structural capital SC has no effect on ROA of Nigerian brewery companies is rejected.

Relational capital (RC) was also significant at 1% level of significance (i.e. prob. < 0.01). Therefore, the hypothesis that Relational Capital has no effect on ROA of Nigerian brewery companies is rejected.

Hence, it is ascertained that human capital, structural capital and relational capital has a significant effect on the Return on Assets of Nigerian commercial banks.

Discussion of results

The data was analyzed using multiple regression analysis, and the result is shown on Table 4.2. From the table, it was observed that the coefficient of determination R^2 is 0.836591, which indicate that 83.66% of the total variation of ROA was explained by the variations in the HC, SC and RC while only 16.33% of the variations in ROA were unexplained. The F-statistic (= 98.59479) was observed to be significant at 1% level of significance, which indicates that the regression model is adequate and statistically significant in terms of its overall goodness of fit. Since, the regression model was adequate, the significant variables were then discussed as below.

The multiple regression result shows that human capital HC has a positive significant relationship with ROA of Nigerian brewery companies. This indicates that when the HC of manufacturing companies is increased, the ROA of the companies will also increase, and a decrease in HC will also decrease ROA. Thus, HC has a positive effect on ROA.

The structural capital SC has also a positive significant effect on ROA. This implies that if the structural capital of companies is increased, the ROA of the companies will also increase.

The Relational capital has also a positive significant effect on ROA. This implies that if the capital employed in companies is increased, the ROA of the companies will also increase.

Summary of Findings, Conclusion and Recommendations

Summary of Findings

1. The result show that Human Capital has positive effect on Return on Asset of commercial banks in Nigeria

2. The effect of structural capital is positive and significant on Return on Assets of commercial banks in Nigeria

3. The Relational Capital shows positive effect on Return on asset of commercial banks in Nigeria

Conclusion

It has been established that HRA increases the Return on Asset of the Nigeria commercial banks, thus enhancing more profit, equips management to make effective and efficient decision to move the organization forward. Increase in investment in human resources can also be used to determine the profitability and stability of commercial banks in Nigeria.

Recommendations

1. Firms should ensure relevant training and retraining packages designed for performance improvement of all employees for better fit on the job.

2. Motivational schemes should be created to induce workers to excel in productivity.

3. Human resource should be ascertained and introduced to the statement of financial position as intangible more particularly with the introduction of international financial reporting standards.

4. Relational capital is necessary to sustain loyalty of customers and should be supported.

5. Structural capital is imperative for firms to adopt viable human resource accounting contribution to knowledge.

6. The research work align with many authors whose result is positive contribution of intellectual capital on firms financial performance (ROA).

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