Impact of Intellectual Capital on Operational Performance of Deposit Money Banks in Nigeria

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Abstract

The researchers investigated the impact of intellectual capital on operational performance of deposit money banks in Nigeria. The researchers adopted the resource-based view theory (RBV) and cross sectional research design. The sample size was two hundred (200) employees of the DMBs selected for the study. The instrument of data collection was questionnaire. The Cronbach Alpha statistical tool was used to determine the reliability of the instrument which gave a value of 0.793 (79%) for human capital; 0812 (81.2%) for structural capital; 0.772 (77.2%) for social/relational capital and 0.752 (75.2%) for operational performance. The data were analysed using frequency and percentages for the bio-data and the hypotheses were analysed using ordinary least square regression (multiple regression analysis). The findings of the study revealed that intellectual capital dimensions (human, structural and relational capitals) have positive and significant impact on the operational performance of DMBs in Nigeria. It was recommended that human, structured and relational capitals should not be implemented individually but collectively for optimal efficiency.

Keywords: Human Capital, Intellectual Capital, Operational Performance, Social Capital, Structural Capital

Introduction

In business environment formally, emphasis was made more on land, labour and capital as economic assets due to their physical nature, but because of the dynamics in the business world emphasis is shifting from traditional capital to intellectual capital, hence, intellectual capital is gaining prominence and has become important business resource that organisations can leverage on to gain competitive advantage in a competitive business environment. Iswati & Anshori (2007) observed that human being has become the central attention in this century hence intellectual capital research now is not only paramount, but also timely. According to Gbenga & Anyim (2021), attentions are

gradually shifting from tangible to an intangible economy where every activity of an organisation or firm ceased to be business as usual. In a knowledge economy, tangible assets like financial and physical are no longer the most critical ingredients of organisation resource, but are intangible (intellectual asset) and, thus, rare, valuable, imperfectly imitable and non-substitutable.

In 2001, the Organisation for Economic Cooperation and Development (OECD), observed that currently, human capital, which is an integral part of intellectual capital, has been recognised as one of the key determinants of growth in business enterprise. Also, because of attention of knowledge economy, intangible or intellectual capital has been recognised as the prominent resources of any organisation. There is no doubt about the belief that higher performance of human capital (employees) enhances firm performance by meeting with the deadlines of the product orders and thus, minimises the average delivery lead time of the product orders. This assertion can lead to increase in market share of such organisation who believe worth of intellectual capital.

As the operational dynamics of organisations or firms changes year in year out, organisations that do not want to be cut on the web equally change their operational dynamics and firms in the financial sector (banks) are taking a lead in this regard because of the fiduciary nature of their business. A proper mix of intellectual capital (human capital, structural capital and social capital) definitely will lead to product/service innovation, creative operation and competence/ competitive signal which directly impact on firm's performance through employee performance and satisfaction, especially in the financial industry where there is much competition. Knowledge has to be present in corporate operations since intellectual capital management affects organisational performance and boosts competitive advantages (Amin & Aslam, 2017). Knowledge can no longer be contained to academic, traditional, and cultural circles. By proper management intellectual capital (IC) components, organisations will design and execute their strategies (Clarke *et al* cited in Camfield, Giacomello & Sellitto, 2018). Intellectual capital has several components, but for this study, emphasis will be on human, structural and social/relation capitals.

Stressing the significance of intellectual capital means giving prominence to employees' importance, taking into account their characteristics, capabilities and competencies in order to solve problems and make decisions in an organisation thus improving performance. In order to innovate, develop products and services aiming to better assist clients/customers and gain market share, a company's organisational structure is crucial. This structure includes processes and managerial and productive procedures, managerial instruments, information systems and the company's administrative philosophy. In terms of social/relational capital for competitive performance, one may underline the significance of the company's excellent relationships with clients/customers and suppliers in order to support them (Jordao & Almeida, 2017). Therefore, it can be emphasised that intellectual capital has become more and more imperative in today's companies' performance; hence the need to empirically investigate the impact of intellectual capital on operational performance of deposit money banks in Nigeria.

Objectives of the Study

Based on the components of intellectual capital considered in this study, the researchers stated the following objectives to guide the study.

1. Ascertain whether human capital impacts on operational performance of deposit money banks in Nigeria.
2. Determine whether structural capital impacts on operational performance of deposit money banks in Nigeria.
3. Examine whether social/relational capital impacts on operational performance of deposit money banks in Nigeria.

Concept of Intellectual Capital

According to like Roos (2017); Agostini, Nosella & Filippini (2017), intellectual capital (IC) can be seen as an intangible asset represented by knowledge, brands, patents and trademarks. The difference between the stable market value and the accounting value may be used to assess the value of IC, which is a value that is hidden from view in financial displays. A set of capital, assets or resources that tend to offer real value to a company and enable its continuity and improved organisational performance are included in IC. An essential intangible asset, intellectual capital is characterised by a knowledge-driven and technology-heavy economy. The application of intellectual capital on the competitiveness and performance of firms is becoming a growing subject of discussion in the business world.

The movement from tangible assets to intellectual capital as the dominant driver of their value is driven by knowledge-based economic theory where knowledge drives the business and not physical assets. Although, the importance of intellectual capital and its management application to the organisation is not really a new phenomenon, however, reflecting on the growing importance of intellectual resources scholarly attention has arisen on the various aspects of intellectual capital measurements and its impact on the growth of organisations since the mid 1990s. The three most common intellectual capital components are human, structural and social/relation capitals.

First, human capital is a human resource which generally refers to knowledge, transition, education, skills, attitudes, motivation, leadership and habits of the employees or people, hence, human capital is considered as important component of any organisation or economy. In the study of Khalique & Bontis, in Hesniati & Erlen, (2021), human resource is critically needed to develop innovation and creativity as a challenge for employees in an organisation or business to achieve a competitive and comparative advantage . Also, in 2018, Khalique, Bontis, Bin-Shaari, Yaacob & Ngah explained that the impact of a positive influence of human capital on organisational performance can help entrepreneurs or company managers to better understand the importance of capitalising these intangible assets in order to create competitiveness in market advantage, this is due to the ability of individual is different, so that the organisation or company can encourage employees to share ideas, knowledge and innovation in order to improve performance in the organisation or business.

Second, structural capital is a framework within an organisation that can include all company system procedures such as policies that can be better defined, databases, networks or connections as well as the company's organisational structure that help in shaping a good way of working. and efficient so that they get the trust of customers. According to Khalique, Bontis, Bin-Shaari, Yaacob & Ngah (2018), structural capital has meaningful positive effect on organisational performance and this is because the existence of the best infrastructure and management system can provide employees with access to relevant information and gain opportunities to improve skills or education so that they can support innovation and procedures in the organisation which improve organisational productivity and performance.

Third, social/relational capital involves the knowledge embedded in the relationships among stakeholders that impacts an organisation's existence and functionality, thus performance. It includes relationships for building, maintaining and renewing resources, structures and processes of the organisation. Khalique & Patricia (in Hesniati & Erlen (2021) said that social capital is a value held in an organisation or company to form a team and good cooperation between employees and the company so that it can have a positive impact on the company, this can be done by instilling a sense of honesty, values, care, cooperation and discipline to create a sense of oneness in an organisational culture and social ethics.

Khalique & DePablos (2015) found a significant and positive relationship of social capital on organisational performance. Social capital is considered to have a positive impact on the organisation. This is because social capital can help in developing professional networks such as trust and mutual respect that can achieve competitive advantage in a knowledge base, collabouration between employees and companies and creating good relationships with suppliers or other business partners in order to develop solutions for challenges.

Concept of Operational Performance

Operational performance, according to Sharma & Modgil (2019) refers to how effectively a product or service is created using a variety of components that are changed into finished products of high quality that will be supplied within the designated time frame. Additionally, operational performance is used to gauge the efficacy and efficiency of the process network as well as how well it serves both internal and external clients. By creating high-quality products and services, improving designs, running operations smoothly, reducing the risk of failure and strengthening operating skills and knowledge within the organisation to build on existing capabilities, operational performance aims to reduce production and service waste, which manifests as costs and increase revenue (Slack & Brandon-Jones, 2018).

There are many different metrics that can be used to gauge operational effectiveness, including, but not limited to cost, quality and delivery, say Kafetzopoulos & Psomas (2015). Costs incurred in the production of a good are called production costs. While quality, as defined by Slack & Brandon-Jones (2018) is producing error-free goods

or services in accordance with the company's criteria, speed and accuracy in delivering items in accordance with the producer's and the customer's agreement, are also important.

Intellectual Capital and Operational Performance

Human capital, in the words of Torre, Tommasetti & Maione (2020), is a collection of knowledge that people have and individual skills within an organisation that determine the performance of the organisation. The organisation needs people who have the expertise, education, skills and competence to make judgements accurately or effectively under time pressure (Wang, Cai, Liang, Wang & Xiang, 2018). Businesses with human capital over the average threshold will unquestionably perform predictably (Torre *et al* 2020), hence we hypothesised that:

HO_1 Human capital has no significant impact on operational performance of deposit money banks in Nigeria.

Second, Torre *et al* (2020) defined structural capital as the infrastructure of the organisation, including databases, process manuals, procedures and enterprise systems, with the goal of enhancing and generating value for the business. The existence of processes, procedures and manual systems is also a way for businesses to share and retain the skills and information that have been periodically acquired so that the competitive advantage earned can endure for a long time (Wang *et al* 2018). Additionally, businesses that engage in structural capital may enhance their working practices to boost product quality and find more effective and efficient solutions to challenges, hence we hypothesised that

HO_2: Structural capital has no significant impact on operational performance of deposit money banks in Nigeria.

Third, according to Sivalogathasan & Wu (2015), social capital, which includes relationships and attitudes, governs how people interact in organisations. According to Agyapong, Agyapong & Poku (2017), social capital improves employees' capacity to share information and concepts with one another. Consequently, social capital is crucial for enhancing a company's operational effectiveness (Agyapong *et al* 2019), hence we hypothesised that:

HO_3: Social/relational capital has no significant impact on operational performance of deposit money banks in Nigeria

Theoretical Framework

This study is based on the resource-based view theory (RBV). Contemporarily, RBV is a dominant approach used to analyse the sustainable competitive advantage of an organisation. In 2013, Mulyono stated that what RBV is trying to say is that within same sectors, some organisations are successful, while some fail. RBV is based on the idea that because resources are few, organisations typically compete for resources and skills. In

their study, Peteraf & Barney (2003) found that the RBV theory emphasises the importance of corporate resources in defining an organisation's advantages, competitive performance and competitive edge. In order to assess the source of competitive advantage, this viewpoint takes two presumptions.

First, this approach presupposes that enterprises within an industry (or strategy) could be diverse in the range of resources they have under their control. Second, it is anticipated that resource heterogeneity can endure over time because not all of the resources employed by the firm to accomplish corporate strategy can be exchanged on the open market and some are hard to amass and replicate. The main thrust of resource-based view company is heterogeneous and this heterogeneity includes the development of skills and the ability to access and control resources (Chun, 2016).

Empirical Review

In 2018, Absah, Muchtar & Qamariah conducted study in the city of Medan on the impact of intellectual capital on the success of MSME (micro, small and medium enterprises). The aim of the study was to examine the impact of intellectual capital on business performance as well as the partial effects of human capital, technological capital, customer capital and social capital. Seventy six (76) MSME in the fashion industry that had been in business for more than two years, specifically along Universitas Sumatera Utara, made up the study's sample. The results showed that intellectual capital significantly and favourably impacted corporate performance. The combination of human, technological and social capital can significantly and positively impact business success, while the impact of consumer capital is minimal.

Ambarsari & Kowanda conducted study on the impact of intellectual capital on banks' financial performance in Indonesia in 2019. The study's goals were to examine the relationship between Return on Asset, Value Added Human Capital (VAHU), Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) and financial performance in banks. In order to test the study's hypotheses, secondary data from annual financial statements of banking companies from 2013 to 2017 were used. OLS multiple linear regression analysis was then used. The results showed that STVA partially had no significant impact on Return on Assets (ROA), while VAHU and VACA were partially significant to ROA. Aggregately, VAHU, VACA and STVA have a significant effect on ROA.

In 2019, Isola & Akanni researched into the impact of each of the components of IC on the performance of firms. The researchers employed static panel data technique and the Value-Added Intellectual Capital (VAICTM) approach of Pulic (2002) as a metric. Results indicated that VAICTM had a favourable impact on organisations' performance. But each of its elements pointed to distinct outcomes. Although, there is a favourable association between the structural and human capital components, there is a bad relationship with the capital utilised component. Although, this study showed a positive association between companies' performance and intellectual capital, the coefficients' non-significance showed that the majority of Nigerian firms placed a lot of focus on their tangible assets. Also, in 2020, using Islamic Banks in GCC as a case in point, Ousama,

Hammami & Abdulkarim investigated the relationship between intellectual capital (IC) and financial performance. The main objective of the study was to empirically determine the impact of intellectual capital (IC) on the financial performance of banks in the Gulf Cooperation Council (GCC) countries. The researchers measured IC by the value-added intellectual coefficient model. A regression analysis was used to anaylse the data. The samples were Islamic Banks operating in the GCC countries from 2011 -2013. Data were sourced from the annual financial reports of Islamic Banks selected for the study. The findings revealed that IC has a positive impact on the financial performance of Islamic Banks. Even though the average IC is lower than that reported in other studies, the positive effect on financial performance is obvious. The findings also showed that human capital (HC) is higher than capital employed (CE) and structural capital (SC). In addition, the study revealed that Social Capital has an insignificant impact on the financial performance of the Islamic banks when compared to CE and HC.

Kurniawan & Muharam conducted a study in Indonesia in 2021 on the impact of intellectual capital on state-owned companies (SOEs). There were 87 observations in the sample. To ascertain the moderating role of firm size in moderating the impact of intellectual capital on profitability, the research was conducted using the OLS, multiple regression analysis approach. The findings demonstrated that all VAIC components had a significant positive impact on profitability when measured by the Value-Added Intellectual Coefficient (VAIC) variable and its derivatives. Additionally, the impact of intellectual capital (VAIC) on profitability could be tempered by a company's size.

Researchers like Hesniati & Erlen assessed the impact of intellectual capital on organisational performance in the city of Batam in 2021. Evaluating the impact of intellectual capital on organisational performance was the study's principal objective. Structural capital, social capital, consumer capital, human capital, spiritual capital and technology capital were the parts of intellectual capital. There were 54 directors of rural banks in the sample. According to the study's findings, the organisational performance of rural banks in Batam City was significantly influenced by structural capital, customer capital, human capital and technology capital. There was no discernible correlation between social or spiritual capitals and company performance.

In the capital state of Taraba, Alkali, Danladi & Hamza in 2022, investigated how different components of intellectual capital (IC) affected deposit money banks' operational performance (OP). Three components of intellectual capital were used; namely: Human Capital (HC), Structural Capital (SC) and Relational Capital (RC) and their influence on the operational performance of DMBs in Jalingo. A cross-sectional survey approach was adopted. Thirteen deposit money banks were covered and the sample size was three hundred and ninety-nine (399). Three hundred and fifty-seven respondents returned their questionnaire. Utilising PLS-SEM, the data were examined. The study's findings demonstrated that the three IC components—HC, SC, and RC—significantly affected the operating efficiency of DMBs in Jalingo, while Human capital is the one that has the most significant effect on the operational effectiveness of DMBs in Jalingo.

From Bangladesh in 2022, Hossain, Salam, Reza & Hasan researched into the impact of intellectual capital on profitability, market value and productivity of the listed banks. The researchers examined the impact of intellectual capital and its components like human capital, structural capital and capital employed on the profitability, market value and productivity of thirty publicly traded banks quoted on the floor of Dhaka Stock Exchange. The sample size was one hundred and fourty-six observations from 2016 to 2020. Data were sourced from the annual financial statements/reports of selected banks, as well as from the website of the Dhaka Stock Exchange. Data were analysed using panel analysis regression models. Intellectual capital was measured by the value-added intellectual coefficient (VAIC). The findings showed that banks with higher intellectual capital generated higher profits, but lowered productivity. However, intellectual capital did not help to increase market value.

Methodology

This study adopted the cross-sectional research design. The population covered all the employees of the deposit money banks (DMBs) with international authorisation in Nigeria. The sample space is ten (10) DMBs (UBA, FCMB, Access bank, First bank, Zenith bank, Union bank, Ecobank, GTB, Stanbic bank, and Fidelity bank) purposive selected based on their functionality or having operational offices in Edo state. The sample size is two hundred (200) employees of the DMBs selected for the study. Twenty (20) from each DMB were randomly selected. The choice of random sampling was to remove biasness in selection.

The instrument of data collection was questionnaire. The instrument consisted of five sections. Section A covered the bio-data of the employees (gender and age) while the other sections covered items on human capital, structural capital social / relational capital and operational performance. The questionnaire was designed on a 4-point scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The instrument was adapted from Khalique & De Pablos (2015) and Camfield, Giacommello & Sellitto's (2018) studies of IC and organisational performance. Data were analysed using frequency and percentages for bio-data while the hypotheses were analysed using multiple regression.

Operational Performance (Op) = f(Human Capita(HC)Structural Capital (SC),Social Capital
(SC))……(i)

Stating equation (i) in econometric form:

OP=F(HC, SC,
SoC)……...(ii)

$OP_t = \alpha_0 + \alpha_1 HC_t + \alpha_2 SC_t + \alpha_3 SoC_t + u_t$…….(iii)

Where α_1 to $\alpha_3 > 0$

Results and Discussion

A total of two hundred (200) copies of questionnaire were administered and one hundred and eighty-two (182) copies were retrieved back after careful monitoring and supervision.

Table 1: Bio-Data Result

Variable		Frequency	Percentage (%)
Gender:			
	Female	111	61.0
	Male	71	39.0
Age:			
	Less than 25	22	12.09
	25-34	77	42.31
	35-44	42	23.08
	Above 44	40	22.52
Educational Qualification:			
	SSCE	34	18.68
	OND	55	30.22
	HND/First Degree	73	40.11
	Master/MBA	20	10.99

The result of table 1 revealed that out of the one hundred and eighty-two (182) respondents (employees) who returned their questionnaire in the survey, one hundred and eleven (11) representing 61.0% wee female while seventy one (71) representing 39.0% were male. This indicated that there were more female respondents (bank staff) in the survey than male respondents. The result on age revealed that employees who were less 25 years of age at the time of the survey were twenty-two (22) representing 12.09%, those within the age bracket of 25-34 had seventy-two (72) representing 42.31%, 35-44 years of age had fourty two (42) representing 23.08%, and above 44 years of age had fourty (40) representing 22.52% This indicated that most of the employees surveyed were within the age bracket of 25-34 years of age.

For educational qualification, the result revealed that those with SSCE had thirty-four (34) representing 18.68%, those with OND had fifty-five (55) representing 30.22%, and those with HND/First degree had seventy three (73) representing 40.11% and those with Master /MBA had twenty (20) representing 10.99%. This meant that they are more HND/First Degree holders in the survey.

Table 2: Regression Output (DV= OP)

		Standardised Coefficients		
Model		**Beta**	**T**	**P value**
1	(Constant)		6.244	.000
	HC	.697	6.046	.000
	SC	.236	6.235	.000
	SoC	.190	4.080	.024

R Square = .721 (72.1%),
Adjusted R Square = .717 (71.7%)
F (stats) = 136.999, F (Prob) = .000:
Durbin-Watson = 1.874

The result in table 2 revealed that all the components of intellectual capital (Human capital (HC), Structural capital (SC) and social/relation capital (SoC) which are the independent variables when aggregated combined together have significant effect on the dependent variable (operational performance (OP). This is indicated by the *F-prob* of 0.0000 which is less than 0.05. Also, the statistic of the R square revealed that the independent variables (HC.SC and SoC) to 72.1 percent explained the variation in the dependent variable (OP). This was endorsed by the adjusted R square of 71.7 percent. The statistic of DW which is 1.874 approximately indicated that the model has no autocorrelation. The standardised beta coefficients revealed that HC, Sc and SoC have positive and significant impact on OP of Deposit money banks (DMBs) in Nigeria. A unit increase in HC, SC and SoC will increase OP by 69.7%, 23.6% and 19.0 % respectively and all were significant.

This study has proven that intangible capital or assets are fundamental to the success of organisation. The findings of the study revealed that IC (HC,SC and SoC) have positive and significant impact on the operational performance of DMBs in Nigeria. This is in affirmation with the studies of Absah, Muchtar & Qamariah (2018) who found that Human capital, technological capital and social capital partially have positive and significant effect on business performance. Isola & Akanni (2019) found that VAICTM affects enterprises' performance favourably while customer capital has a negligible impact on companies' success; but each of its elements pointed to distinct outcomes. Although, there is a favourable association between the structural and human capital components, there is a bad relationship with the capital utilised component. However, their result reflected a positive relationship between performance and intellectual capital of firms. In the same vein, this study supports the findings of Alkali, Danladi & Hamza's study from 2022, which found that the three IC components—HC, SC and RC—significantly impacted the operational effectiveness of DMBs, with human capital having the greatest impact.

Furthermore, the finding of the study is in partial support with the study of Ousama, Hammami & Abdulkarim (2020) who found that human capital (HC) is higher than capital employed (CE) and structural capital (SC). In addition, the findings revealed that Social Capital has an insignificant impact on the financial performance of the Islamic banks when compared to CE, SC and HC. In same vein, the findings of this study is in partial support of Hesniati & Erlen (2021) who revealed that there was a significant relationship between structural capital, customer capital, human capital and technology capital on organisational performance of rural banks. Social and spiritual capital showed no significant relationship to organisational performance.

Conclusion and Recommendations

The results of this study provided empirical evidence of the impact of intellectual capital components; Human Capital, Structural and Social/Relation Capital on the operational performance of deposit money banks (DMBs). These results provide additional empirical evidence for researchers on the importance of intellectual capital on the operational performance of DMBs in particular with the context of DMBs in Nigeria. Thus, these results contribute to the development of theories on intellectual capital in DMBs. Based

on the findings of the study, the researcher recommended the followings. DMBs are advised to give human capital more attention according to the value of its implementation and also HC, SC and SoC should not be implemented individually, but collectively for optimal efficiency.

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