

Effect of Intellectual Capital Management on Revenue Generation of Listed Commercial Banks in Nigeria

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Abstract

The paper is aimed at determining the effect of Intellectual Capital Management on revenue generation of listed deposit money banks in Nigeria. The specific objectives of the research were to ascertain the effect of human capital efficiency on revenue growth, to examine the effect of structural capital efficiency on revenue growth and to determine the effect of intellectual capital management on revenue growth. Descriptive research design was adopted for the study considering the total population of all the twenty-one listed deposit money banks in Nigeria. Data were gathered via secondary source from Six (6) public annual reports of the listed deposit money banks and analyzed using percentages and ratios. Multiple regressions was employed in data analysis and testing the hypotheses; in determining if there is a significant effect of human capital efficiency, structural capital efficiency and Intellectual Capital management on revenue growth of listed deposit money banks in Nigeria. The study revealed that Human Capital Efficiency (HCE) has a positive and significant effect on revenue growth, Structural Capital Efficiency (SCE) has a positive but no significant effect on revenue growth and concluded that Intellectual Capital Management has a positive and no significant effect on revenue growth of listed deposit money banks in Nigeria. Based on the findings, the study recommends that management of deposit money banks in Nigeria and the financial service industry should invest in human capital in order to enjoy increase in revenue generation coupled with the need to determine optimally the level of intellectual capital management so that layoff and underutilization would be highly discouraged and for management to strengthen Intellectual capital management in order to enhance improved performance in revenue generation.

Keywords: *Intellectual Capital Management, Human capital efficiency, Relational capital, Revenue growth, Structural capital efficiency*

1.0 Introduction

1.1 Background to the Study

Resources are key drivers for every business success, the need for these adequate resources (in the form of financial, physical and intangible assets) in ensuring the continuous operation of a business function as a going concern can never be overlooked. These resources range from physical assets, financial cum other intangible assets, all needed for the growth of a company. In the millennium, there was a growing prediction that less people will do physical work and more people will do brain work, this is “intellectual capital”, and it doesn’t appear on the company statement of financial performance, but reflects more value for organizations than that of physical assets. Intellectual capital drives organizational wealth more by knowledge and information rather than the process of production. While in the past most economies depended on use of land, natural resources, equipment and capital for the creation of value, currently our information economy depends largely on the application of knowledge in the creation of wealth

and economic growth. In addressing the relevance of intellectual capital management, Apiti, Ugwoke and Chiekezie (2017) noted that in this period of national as well as global financial crisis, the study of the relevance of intangible assets has attracted much attention in the business management literature, because intellectual capital which is an aspect of intangible asset has that exerting influence of adding value to a firm and with its relational ability can facilitate the acquisition of other resources which promote the survival and profitability of a firm. The foundational progress of every organization in today's world rests on these intangible assets that make up the intellectual capital. Gone are the days when firms focus only on their physical capital with little or no attention to their intellectual capitals and still post huge profits, competition in business today has become so intense that managers utilize every resource at their disposal to edge others out of business. To build relevance and increase financial performance banks in Nigeria nowadays engage mostly university graduates (who were outstanding) in their employment policies, thereby giving credence to the fact that intellectual capital significantly affects their performance. This stride has paid in promoting huge transformation within the financial sector of Nigeria in the last few years. Customers of banks now receive quick and improved services from their banks". The boost of educated workforce gives rise to high profitability and productivity. Companies that makes a better disclosure of its intellectual assets, stands tall among her competitors and the greater it provides confidence to her stakeholders. Intellectual capital in combination with physical assets in financial companies sharpens and strengthens competitive edge. No wonder, Bornemann (1999) found that enterprises, which have managed their intellectual capital better, had achieved stronger competitive advantage than the general enterprises. Intellectual Capital imposes a directional or in-directional relational contribution to the performance of companies and should be duly given a reasonable consideration in the business firms as well as reported comprehensively in financial statements. For any organization that wants to take the lead in any sector, judging by performance and all round, should take the management of her Intellectual capital seriously. In the world's economy where there is now a paradigm shift, that firms no longer centre their viability on physical assets only, but also on human assets (i.e. intellectual capital), researchers have come to realize that intellectual capacity which in times past was neglected is now a core driver in the business world due technological advancement and great innovations; hence, the need to manage the intellectual asset of every organization in other to ensure steady growth on revenue generation is of key importance, knowing that firms can't survive without steady generation of revenue.

1.2 Statement of the Problem

The new knowledge economies have highlighted the importance of intellectual capital and the imperative need to manage their associated costs and benefits. Financial institutions, which are rich in human capital and face great 'human capital-walk outs' should be concerned with management of the cost of this unique asset. It has become a common phrase included in the chairman's report that; "Our employee are our greatest asset", yet there have been inadequate attention given to the value and contribution of this "great asset" on the overall performance of the banks. When companies invest in physical capital; they try to select alternatives offering the highest return on their investment. They would also like to invest in human capital offering them the highest return. Banks in Nigeria for instance have problem of having the needed intellectual capital to carry on its work efficiently and effectively. Therefore, they result in pouching from competitor since it will take them time to actualize the process of new staff recruitment and training to meet their human capital needs. Most financial institutions are poised with a dire challenge in the future, which likely seems to be an ever more urgent quest for competitive advantage. Guest, Michie, Conway and Sheehan (2003) noted that it is increasingly argued that the organizations best able to meet this challenge will be those that

can acquire and utilize valuable, scarce and inimitable resources (Barney, 1991). Intellectual capital can fall into this category, which is argued in times past, particularly if they are effectively deployed through appropriate human resource practices and the management of organizational culture (Barney & Wright, 1998). The need for effective management of intellectual capital (human resources) stands as one of the central tasks of management and this presents a challenge for organizations where firms seek to compete in the world markets and search for increased productivity by encouraging the spread of high-performance workplaces. In view of this development, this research sets out to look at the effect of intellectual capital management on revenue generation of listed money deposit banks in Nigeria.

1.3 Objectives of the Study

The broad objective of the study is to examine the effect of intellectual capital management on revenue generation of listed deposit money banks the in Nigeria.

The Specific objectives are:

1. To ascertain the effect of human capital efficiency on revenue growth.
2. To examine the effect of structural capital efficiency on revenue growth.
3. To determine the effect of intellectual capital management on revenue growth.

1.4 Research Questions

- (i) To what extent does human capital efficiency affects revenue growth?
- (ii) How structural capital efficiency does affect revenue growth?
- (iii) What effect has intellectual capital management on revenue growth?

1.5 Statement of Hypotheses

- Ho1: Human Capital Efficiency has no significant effect on revenue growth.
Ho2: Structural Capital Efficiency has no significant effect on revenue growth.
Ho3: Intellectual Capital Management has no significant effect on revenue growth.

2.0 Review of Related Literature

2.1 Conceptual Framework

2.1.1 Concept of Intellectual Capital

The famous economist of US, Galbraith (1969) first proposed the concept of Intellectual Capital. And his thought about Intellectual Capital was not just a kind of static intangible asset in itself, but also a kind of dynamic capital without fixed capital form, and it is the process effectively utilizing knowledge, and a kind of measure to realize the target. There is no generally accepted definition of intellectual capital. However, many have offered views that provide a general concept. Galbraith (1996) sees intellectual capital as a form of knowledge, intellect, brain activity which uses knowledge as a source of value creation. Brooking (1996) "Intellectual capital is the term given to the combined intangible assets which enable the company to function." Roberts (1999) Intellectual Capital is more than simply the sum of the human, structural and relational resources of the firm, it is about how to let the knowledge of a firm work for it and have it create value. Bontis, Chua and Richardson (2000) sees intellectual capital 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.

2.1.2 Categories of Intellectual Capital

Intellectual capital is the combination of the human, organizational and relational resources of an organization.

(i) **Human Capital:** Meritum (2005) defines Human Capital as the knowledge that employees take with them when they leave the firm. It includes the knowledge, skills, experiences and abilities of people. Some of this knowledge is unique to the individual, some may be generic. Examples are innovation capacity, creativity, know-how and previous experience, teamwork capacity, employee flexibility, tolerance for ambiguity, motivation, satisfaction, learning capacity, loyalty, formal training and education. Kamal, Mat, Rahim, Husin and Ismail (2012) defined Human Capital “as employee’s competence in creating both tangible and intangible assets by contributing in the continuous generation of knowledge and ideas”. Pulic (2000) looked at human capital to be the knowledge held by employees are the primary source of value creation so therefore employees’ expenses should be seen as investments rather than costs. Also, Choo and Bontis (2002) define Human capital as the combined knowledge, skill, innovativeness and ability of the company’s individual employees to meet the task at hand. 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 which includes the collective knowledge, competency, experience, skills and talents of people within an organization.

(ii) **Structural Capital** is defined as the knowledge that stays within the firm at the end of the working day. It comprises the organizational routines, procedures, systems, cultures, databases, etc. Examples are organizational flexibility, a documentation service, the existence of a knowledge centre, the general use of Information Technologies, organizational learning capacity, etc. Some of them may be legally protected and become Intellectual Property Rights, legally owned by the firm under separate title. (Meritum, 2005).

Bontis et al. (2000) Is the hardware, software, databases, organizational structure, patents, trademarks and everything that supports employees’ productivity. Structural capital is the supportive infrastructure that enables human capital to function.

Saint (1996) in his own submission also stated that the structural capital of a firm consists of four elements:

Systems - the way in which an organization’s processes (information, communication, decision making) and outputs (products/services and capital) proceed.

Structure - the arrangement of responsibilities and accountabilities that defines the position of and relationship between members of an organization.

Strategy - the goals of the organization and the ways it seeks to achieve them.

Culture - the sum of individual opinions, shared mindsets, values, and norms within the organization.

(iii) **Relational Capital** is the knowledge embedded in relationships with customers, suppliers, industry associations or any other stakeholder that influence the organization’s life. Customer capital encompasses the external intangible assets of an organisation. (Uadiale & Uwuigbe, 2011). Relational capital, defines an organization’s vital, external relationships. Knight (1999) further expanded on the components of external capital to include:

(a) **Customer capital**-the loyalty of valuable customers created by understanding their needs and meeting them consistently

(b) **Supplier capital** - the mutual trust, commitment, and creativity of key suppliers.

(c) **Alliance capital** - reliable and beneficial partners.

(d) **Community capital** - an organization’s capabilities and reputation in its surrounding community.

(e) **Regulatory capital** - knowledge of laws and regulations as well as lobbying skills and contacts.

(f) **Competitor capital** - critical understanding and intelligence about competitors.

Intellectual capital has become the one indispensable asset of organizations. Managing its human, relational, and structural components is of the essence of modern business. (Serrat, 2011)

From the above definitions and category of Intellectual Capital, it is certain to note that intellectual capital is a core asset which when given full recognition and reporting in financial statements contributes highly in improving financial performance, revenue generation and transformation of the organization as a whole. Therefore, quantitatively intellectual capital is the total of human Capital, structural capital and relational capital.

2.1.3 Phases of Intellectual Capital Development

Edvinsson (1997) the following major phases can be regarded as a pattern for the development of intellectual capital to include Missionary, Measurement, Leadership, Technology, Capitalizing, and Futurizing.

Missionary- The first phase around missionary work focuses on the insights and logic behind intellectual capital. It covers, among others, the area of the metaphor of the tree, as well as the need for a supplementary mapping system.

Measurement- The second phase around measurement focuses on the development of the data, as well as the language. At Skandia this included development of the IC Controller functions and alignment with the accounting system.

Leadership- The third phase focuses on the leadership acting upon the new insights from the data. This is also called the navigation dimension to highlight the need for navigation into the future and to nurture renewal and development rather than just management of the past.

Technology- Technology focuses on the development of technology tools for the packaging of knowledge as well as communication technologies for rapid knowledge sharing. What could be seen in Skandia were also the evolutionary steps from Admin Technology (AT) with mainframes, to IT with PCs, to Communication Technologies (CT) with Intranets to Entertainment Technologies (ET) with customer amusement technologies, e.g. CD-ROMS.

Capitalizing- The capitalizing phase focuses on packaged organizational technology for recycling, as well as intellectual properties.

Futurizing- The futurizing phase focuses on the continuous renewal and development and the nurturing of the innovation capital. This is illustrated, among other things, by the establishment of the first of Skandia's future centers. The above phases are the steps that have been covered during the last five years at Skandia, on a pioneering basis. The logic is sequential, but the implementation is parallel.

2.1.4 Intellectual Capital Management

Gogan, Cristina, Rennung and Sirbu (2015) made references to some authors as to their definition of what Intellectual Capital Management entails, amongst those definitions include: Gogan and Duran (2014) "Intellectual Capital Management is a cyclic and continuous process that is coordinating the activities to identify, evaluate, and initiate action plan and report intangible assets in order to achieve sustainable competitive advantage". Viedma (2004) defined Intellectual Capital Management consists of the strategic planning and implementation activities related to intangibles, and its explicit goal is the improvement of the companies' value creation capacities. Marr, Gupta, Pike and Roos (2003) Intellectual Capital Management is a series of actions that occur within the organization aimed at creating and extracting value. Meritum (2002) Intellectual Capital Management including three phases: the identification of strategic intellectual assets and activities related to them, measuring them, and monitoring their development. Kujansivu (2008) Intellectual Capital Management include the identification, measurement, valuation, acquisition, and reporting of intellectual capital. From the above definitions, they all reflect a positive relationship between intellectual capital and competitive

Advantage. On a contrary view, looking at Intellectual capital management on the basis of knowledge management, Ding and Li (2010) defines Intellectual Capital management can be defined as the management of the expansion, enhancement and value evaluation of knowledge management, taking the knowledge management as the core, taking the enhancement of enterprise value as the intention under the condition adapting with the development strategy of the enterprise.

Serrat (2011) Intellectual capital management is the active management of intellectual capital resources with multiplicative effects. The schemes that can be applied singly or across the three types relate to

- (i) Value creation - the strategic generation of knowledge and its conversion into valuable forms.
- (ii) Value extraction - the strategic conversion of created value into useful forms.
- (iii) Value reporting - the accurate reflection of the value of intellectual capital - once the what, why, how, when, and where of qualitative and quantitative measurement, as well as its responsibility centre, have been decided - for both analysis and decision making by senior management and externally by clients, audiences, and partners. Managing intellectual capital effectively rests on balancing value creation, extraction, and reporting to meet the goal of the organization.

Intellectual Capital Management is leveraging human capital & structural capital together. It is multiplying the interaction between Human Capital & Structural Capital. (Edvinsson, 1997:372)

2.1.5 Intellectual Capital Development Steps

Stewart (1997) clearly laid down eight steps for managers who are interested in developing intellectual capital for their own organizations and this includes:

1. Make knowledge management a requirement for evaluation purposes for each employee in your organization - assign personal targets to intellectual capital development. For example, companies can have each employee aim to learn something that the organization currently does not know;
2. Formally define the role of knowledge in your business and in your industry -find and secure the greatest resources of intellectual capital;
3. Assess your competitors' and suppliers' strategies and knowledge assets - find and secure the greatest resources of relational capital;
4. Determine the extent of intellectual capital resources available to you from government and industry associations;
5. Classify your intellectual portfolio by producing a "knowledge map" of your organization - determine in which people and systems knowledge resides;
6. Evaluate the relative worth of the intellectual capital - use monetary values if at all possible, or company - developed indices or metrics;
7. Identify gaps you must fill or holes you should plug based on weaknesses relative to competitors, customers and suppliers; and
8. Assemble your new knowledge portfolio in an intellectual capital addendum to your annual report and continuously assess the development of your intellectual capital.

2.1.6 Intellectual Capital Management: Model

It's clear that managers who want to grow their company's intellectual capital must be able to expand intelligence, encourage innovation and exercise integrity. Indeed, these are the three

core competencies of intellectual capital (Miller, 1999). If managers manage knowledge effectively, their organization will enhance their intellectual capital. There are two levels of knowledge in intellectual capital: Explicit and tacit knowledge. Tacit knowledge is the experience and intellectual creativity and learning that rests with the human resources of the firm. Explicit knowledge is knowledge that can be codified into information and accessed and disseminated systematically (Dzinkowski, 1999). There have been various models and views set up over the years on how to manage intellectual capital. This view involves the Meritum Approach, the Wissenbilanz approach, Gogan et al view.

(1) The Meritum Model Approach (2005): Describes the usual steps taken by a firm aware of the importance of its intangibles for success that is willing to adapt its management control system to explicitly taking into consideration intangibles. The following statements are based on the analysis of firms that consider the management of intangibles as a strategic issue closely linked to their ability to create value and believe that intellectual capital is a key part of their business process. The identification of intangibles singles out and leverages certain key assets that otherwise would have been overlooked and enhances the firm's awareness about the relevance of these assets in the value creation process. The effective management of intangibles might increase the firm's commitment with its intellectual capital. There has been a debate over the last years about the purposes that firms may have when attempting to measure their intangibles. Some are management-related purposes, some are external purposes, i.e., to provide useful third-party information on the real value of the firm. However, this difference between internal and external use of the information on intangibles tends to blur since outsiders' perceptions of how value is created by the firm increasingly take account of internal management systems (Vickery, 2000). As a result, firms must have both internal and external uses in mind when designing their Intellectual Capital Management systems. The model we propose as a representation of the approach followed by companies when developing their intangible management system can be split into three non-linear and related phases:

- A. Identification of intangibles
- B. Measurement
- C. Action

Phase 1. Identification of intangibles

The starting point must be a definition of the vision of the firm, that is, a statement of the organization's mission and of the related strategic goals. Firms then need to identify those intangibles that are critical to their strategic objectives. Those critical intangibles are the main factors, the key drivers, which contribute most to the value creation process. They embrace the core competencies the company possesses or needs to develop in order to attain its objectives. To obtain that information, the firm has to answer questions such as: where are we? Where do we want to go? What are our challenges? What have we got and what do we need in terms of intangibles? Usually, the answers to these questions emerge as a result of internal discussions or brainstorming sessions. Companies are concerned both about the status of their intangible resources and about the actions that should be undertaken in order to maintain and improve those resources.

Phase 2. Measurement

Once the critical intangibles have been identified and the causal network of relations has been established, the firm needs to define specific indicators that serve as a proxy measure for each intangible. Thus, a set of indicators is defined and developed for each intangible. Companies may wish to check whether or not the indicators fulfil the characteristics below:

An indicator should be comparable (trend analysis among companies), reliable (trustworthy), objective (no bias), truthful (reflects real life situation), verifiable (truthful), feasible (cost effective).

Phase 3. Action

The action phase entails the consolidation of the intangibles management system and its integration within the firm's management routines. It can be conceived as the recognition of a learning process that runs parallel with the previous phases. Both the firm's intellectual capital stock and the effect of the different activities on intangible resources are evaluated in this phase. As a result, strengths and weaknesses should be identified and needs for additional intangible activities will arise.

(2) The Wissensbilanz Approach (Edvinsson & Kivikas, 2007): The Wissensbilanz model which was developed by the Federal Ministry of Economics & Labour in Germany provides a guide in Intellectual Capital Management. The model was addressed to assist small and medium enterprise, also other forms of organisations which fall within the same purview structure of SMEs. This model provides advice to managers on the principles and methods useful for the development of Intellectual Capital Statements. The model provides four (4) stages that will guide managers in achieving outstanding performance:

First Stage: This stage involves the Intellectual Capital Statement in a simplest form. To achieve this stage, there are three (3) steps laid down, which includes;

- (a) Evaluation of the initial situation in relation to intangible assets, the company's strategy and business.
- (b) Recognition of Intellectual Capital which involves the identification of the processes that generate performance and the factors that influence the Intellectual Capital.
- (c) Evaluation of Intellectual Capital and meaning self-assessment method in order to achieve a quick overview of the strengths & weaknesses of Intellectual capital that exist in the organization.

Second Stage: The objective of this stage is to propose relevant indicators that are measurable in the form of numbers or dates by those skilled in the field of Intellectual Capital.

Third Stage: Involves the preliminary report which describes the most relevant information in relation to intellectual capital in a structured form.

Fourth Stage: Entails the presentation of full intellectual capital statement. The final report incorporated correlation analysis and assessments that provide information concerning how it will take until measures taken will lead to organizational performance.

(3) Gogan, et al (2015) Approach: They developed a new model that involves the following stages:

Identify intellectual capital - is a step in that intangible resources are determined and described that may have an impact on organizational competitiveness. They can be identified at the organizational level, department level or at the individual level. As tools for collecting data on intangible assets (human capital - HC, structural capital - SC and relational capital - RC) can be used online questionnaires, focus groups or interviews. This step is executed by a person skilled in the art called internal auditor. This step is aimed at creating value for the company.

Measuring intellectual capital - this phase is started after existing intangible resources within the company, department or individual level have been identified and are considered vital to obtain competitive advantage. Measuring intellectual capital aims at extracting the value created.

Action plan - This step involves finding ways to improve the results obtained in the step of measuring intellectual capital. Starting the action plan is a proposal process and determining the correct option strategy involving the implementation of corrective actions and reduces the risks associated intellectual capital. The effectiveness of this step contributes to achieving the organization's objectives and maximizes the value created.

Monitoring of intellectual capital - once the action plan has been implemented, the aim is achieved if the targets set by the manager. The purpose of this step is to maintain the value created.

Report - in this step, the measurement intellectual capital results are presented to the manager (total score), creating an overview of the value created for the organization of these intangible assets.

(4) Ding and Li (2010) Approach: Their position was that intellectual management is layer-focused. It was stated that the important content of Intellectual Capital management is a heterogeneous resource, which is described as the knowledge. The knowledge management is seen to be the core of the Intellectual Capital management, and the transfer, the flow, the sharing and the communication with the exterior in the organization all are very important to enhance the Intellectual Capital. They further stated that the *Intellectual Capital management is not only to manage knowledge, but to manage the expansion of knowledge management expansion, i.e. to manage the expansion, value-enhancement and value evaluation of Intellectual Capital.*

Their position puts it that the Intellectual Capital management should include three layers as follows.

(A) The core layer: On this layer, the knowledge management could provide the knowledge platform for the expansion of Intellectual Capital by assimilating exterior knowledge, integrating interior knowledge and creating new knowledge.

(B) The expansion layer: On this layer, the enterprise Intellectual Capital could realize the value enhancement by the expansion, and accordingly drive the value enhancement of the whole enterprise.

(C) The strategy layer: As a subsystem of the enterprise management, the management of enterprise Intellectual Capital must accord with the development strategy of the enterprise and make proper adjustment according to the strategy of the enterprise.

2.1.7 Importance of Intellectual Capital Management

Ding and Li (2010) states that Intellectual Capital management will bring many benefits to an enterprise which includes:

- a. Reducing the time from development to application
- b. Saving costs and investments, or recycling structure capital and organization capital

- c. Producing higher added value because of the improvement of mutual functions
- d. Creating new values by new association and new combination.

Edvinsson (1997) further noted that the benefits Intellectual Capital provides to an organization includes:

1. A steeper learning curve.
2. A shortened lead time to application.
3. Savings in Costs & investments, or the recycling, of structured capital & organizational capital.
4. Higher value added because of improved interactions and
5. New Value creation through new connections and new combinations.

2.1.8 Intellectual Capital Management Measures

Ding and Li (2010) laid down measures to enhance the management of Intellectual Capital stating that If enterprises want to acquire advantages in the market competition, they should not only innovate upon products, marketing channel, market and service, but enhance the R&D ability of market and product, and specially pay attention to the cultivation and management of enterprise Intellectual Capital. The target of Intellectual Capital management is to distinguish, acquire, utilize and circle Intellectual Capitals to enhance the value production ability of the enterprise.

A. Strengthening the management of enterprise knowledge resources

The knowledge resource of the enterprise means the resources which can be utilized repeatedly by the enterprise, are based on the information and technology, and bring wealth growth for the enterprise. It generally includes three aspects, i.e. the intangible assets created and possessed by the enterprise (such as brand, reputation, channel, technical flow, management mode and method, information network), information resource (various information about enterprise management acquired by the information network), intelligence resource (various knowledge which can be utilized by the enterprise and exist in human resources of the enterprise, and ability which can utilize knowledge in a creative way). The main content of knowledge resource management generally include following aspects, i.e. the organization system and operation standards of generating, utilizing and transferring knowledge resources of enterprise, the investment management of knowledge resources such as the training of human resources, the introduction of information and technology, and the establishment of enterprise image, the establishment of the knowledge repository to improve the sharing of knowledge, the improvement of knowledge innovation to integrate creationary knowledge into products, services and production process, the protection of intellectual property, the output assessment, income distribution, confirmation and evaluation of knowledge resources.

B. Strengthening the interior management and the exterior management of enterprise knowledge

As viewed from the range of knowledge management, the knowledge management comes down to the interior management and the exterior management of knowledge. The interior management of knowledge includes the generation, communication, accumulation and application of knowledge in the interior of the enterprise. The interior management of enterprise knowledge should build a loose environment which is propitious to generate, communicate with and validate knowledge for employees, establish an information network in the interior of the enterprise convenient for employees to communicate with knowledge, constitute various encouragement polices for the knowledge communication among employees, utilize various knowledge database and patent database to store and accumulate

knowledge, loosen the control of knowledge application and encourage employees to carve out their own careers in the interior of the enterprise and promote the application of knowledge. The intention of the exterior management of knowledge is to effectively manage knowledge by the communication and the cooperation among enterprise, and accumulate more knowledge for the enterprise and acquire more benefits. The exterior management of knowledge should make the enterprise to effectively communicate and share knowledge with other enterprises, and effectively cooperate with other special exterior suppliers of knowledge, and share knowledge, develop and cultivate the market with the competitors together.

C. Strengthening the management of explicit knowledge and implicit knowledge

As viewed from the management form of knowledge, knowledge can be divided into explicit knowledge and implicit knowledge. Explicit knowledge mainly means the knowledge existing by the forms such as patents, scientific invention and special technology. And the implicit knowledge means employees' creationary knowledge and ideas, and it only exists in employees' heads, which cannot be observed and understood definitely by others. At present, many technologies and methods can be used to manage explicit knowledge, for example, the explicit knowledge such as patent and special technologies which can be stored in the database, and checked and used by the computer network to share them with others.

Implicit knowledge exists in employees' heads, which cannot be observed definitely, and each enterprise has some "knowledge self-seekers" who would not easily share their knowledge with others to maintain their special status in the enterprise. Therefore, enterprises must effectively adjust the management mechanism of the enterprise, and form the management mechanism which can encourage employees to cooperate in innovation and share knowledge.

D. Enhancing the whole quality of enterprise talent resources by educational training

In the time of knowledge economy, the competition of talents is more drastic, and one important task of human resource management is to attract and hold excellent talents. However, strong flow willing is contrary with that, and employees in the enterprise always more pay attention to their individual growths, not the requirement of the organization. Based on that, enterprises should first pay attention to the investment of human capitals for employees, perfect the talent cultivation mechanism, and offer learning opportunities for employees to accept further education and continually enhance their skills, and make them to possess the ability to obtain employment for life. Employees' requirements for the growth of knowledge, individual and career will exceed the implementation of the organizational target. When employees feel that they are only the "senior employees" of the organization, their absolute loyalty will hardly form.

Therefore, enterprises should not only offer the salary according with employees' contribution, and make them to share the wealth created by them, but also fully know employees' individual requirements and wills about their occupation development, and offer the ascending road for employees.

E. Establishing reasonable distribution and encouragement

The distribution mechanism is the key to innovate upon the mechanism of the enterprise, and the original drive to develop the enterprise. Each breakthrough of the distribution mechanism all can encourage employees' working enthusiasm and creativity. In the time of knowledge economy, the production of the society would consume knowledge largely, and people who can accumulate more knowledge and continually create new knowledge will acquire wealth. In this instance, the distribution of social wealth will take knowledge as the axis, and the salary is mainly decided by individual knowledge and skills, more pay for more knowledge.

2.1.9 Intellectual Capital Management and Revenue Generation

Ekwe (2013) shows that there is a positive and significant relationship between the growth in revenue and Intellectual Capital of banks in Nigeria. Bontis (2001) asserts that leveraging knowledge assets is the key to a firm's prosperity. OECD (2001) concludes that intellectual capital is one of the key determinant of growth in businesses. Patton (2007) stated that the productivity and revenue growth of a firm lie more on the firm's intellectual capital management and system capabilities than on its physical assets. Based on these studies, therefore, it may be argued that a firm with higher intellectual capital management is expected to experience higher productivity and thereby higher revenue generation.

2.2 Theoretical Framework

Many researchers have been conducted in the area of Intellectual capital however; there is still the existence of a wide gap between theory and practice. The shift towards value-addition based measurements of intellectual Capital (HC, SC & RC) management has gradually begun to close the gap between theory and practice.

2.2.1 Value Added Intellectual Coefficient Theorem (VAIC) was developed by Pulic (1997) and it's found to be appropriate for the study of Intellectual Capital Management and revenue generation. It meets the basic requirements of contemporary economy indicating the real value and performance of a company; this is because value added has been reputed as the preferred measure of the wealth created by activities of a company.

As VAIC is composed of the tangible resources efficiency (capital employed efficiency) and Intellectual Capital efficiency (human capital efficiency and structural capital efficiency), Pulic (1997) sees intellectual capital as the sum total of all expenditures incurred on the employees during the period, that is, the salaries and allowances. The theoretical positive effect of VAIC and Revenue Generation (GR) of banks is supported by several previous studies such as Pulic (1998) in Austria; Pulic (2002) in Croatia; Goh (2005) in Malaysia; Mavridis (2004) in Japan; Mavridis and Kyrmizoglou (2005) in Greece; Kamath (2007) in India; Ekwe (2013) in Nigeria. Also, Pulic and Bornemann (1999) and similar study conducted on Croatian banks by Pulic (2001); Mavridis (2004) used the same model to study the performance of Japanese banks. Other researches that have utilised VAICTM includes; Bharathi (2010) conducted study on the intellectual capital performance of Banking Sector in Pakistan. Mohammed and Ismail (2009) using VAICTM to test the intellectual capital efficiency and firm's performance in Malaysian financial sectors, they found out that there is a significant and positive relationship between intellectual capital and company's performance. Pulic (1997) VAIC model has received wide usage in the area of intellectual capital due to the inadequacies of the other valuation methods and measurement models. VAICTM provides a standardised and consistent basis of measure that can be used for easily comparison both within sector, industry or internationally. Also, like other traditional measures of corporate performance, it is easy and straightforward for both internal and external users of the financial statement.

2.2.2 Agency Theory

Agency theory emphasise that performance-related payment can motivate employees to achieve organizational goals. Hassabelnaby, Said and Wier (2005) they believe that there is a relationship between the conception of agency theory and a company's choice of performance indicators. Given its related costs and risks, a performance indicator, no matter financial or non-financial performance indicators, should be included in the performance management system as long as the indicator can add incremental information about employees' effort in work (Hassabelnaby, Said & Wier, 2005; Basse & Tapang, 2012). Since human resource staff

and management accountants may have different ideas about the costs and risks of certain performance indicators and different ideas about what incremental information is, these two groups may have different perception about the explanations agency theory provides of performance management. Moers (2006) questions the validity of the assumption in agency theory that principals are honest and easy to suffer from agent's self-interest intention which may finally results to harm the interest of the principal. Moers (2006) argues that this assumption has lent so much discretion to principles in reality that performance management systems established by principals tends to become diverse and subjective. It may be hard to achieve fairness within such performance management systems and some problems, such as undue tolerance of poor performance may thus arise (Moers, 2006). It may be interesting to see how human resource staff and management accountants add diversity and subjectivity do performance management and whether they are aware of their contribution. It will be meaningful to check whether the problems predicted by Moers (2006) do happen in practice.

2.3 Empirical Review

Apiti, Ugwoke and Chiekezie (2017) conducted the study to examine the intellectual capital management and organizational performance in Nigeria. The study adopted ex-post facto design and the research made use of purely secondary data from annual reports of the four (4) selected beverage companies. Pearson moment correlation coefficient was used to determine the relationship between intellectual capital and organizational reported financial performance, and linear regression was used to determine the impact of intellectual capital on organizational reported financial performance. The findings of the study show that there is a significant relationship between intellectual capital and firm's financial performance and that proper management of intellectual capital has an impact on firms reported financial performance.

Uadiale and Uwuigbe (2011) carried out a study on intellectual capital and business performance: Evidence from Nigeria. The study is explanatory, using a sample of thirty-two audited financial statements of quoted companies in Nigeria, analyses were carried out with the aid of the Statistical Package for Social Sciences, (SPSS Version 17.0) and a Pearson correlation analysis was performed on the dependent and independent variables in order to determine the degree of relationship between them. The results showed that intellectual capital has a positive and significant relationship with the performance of business organizations in Nigeria and based on the findings, the study recommended that corporate entities in Nigeria should invest in Human, Structural and Customer Capital in order to increase their performance.

Ekwe (2013) conducted a study the relationship between Intellectual Capitals and Growth in Revenue of deposit money banks in Nigeria. The study adopted the ex-post facto research design. It was systematically conducted using longitudinal time series data generated and computed from the annual reports and accounts of the selected banks in Nigeria spanning from year 2000 to 2011. Multiple regression analysis method was adopted for the test of all the hypotheses. The SPSS statistical software (version 17.0) was used for the data analysis. The results showed that there was a positive and significant relationship between components of VAIC and the growth in revenue of the banks in Nigeria. From the findings, it was established that indeed there is a positive and significant relationship between intellectual capital and growth in revenue of banks in Nigeria.

Sumedrea (2013) carried out a study on Intellectual Capital and Firm Performance: A Dynamic Relationship in Crisis time. The VAIC model was used in analyzing the structure of the intellectual capital and its influence on the economic performances. Regression was employed

in analyzing the hypotheses and the result obtained was that, in crisis time, the development of companies is influenced by the human and structural capital, while profitability is additionally linked to the financial capital.

Danjuma and Ajike (2016) conducted a study on the impact of Human Capital Efficiency on Corporate Performance of industrial goods companies listed in the Nigerian Stock Exchange Market. The study was empirical and employed the VAIC methodology; multiple Linear regression models were used for analyzing the relationship between the variables of interest for a period of 6 years (2009-2014); Employees' growth (EG), Earnings per Share (EPS), Return on Assets (ROA), Human Capital Efficiency (HCE), lagged Human Capital Efficiency and Size of the firms. The finding revealed that there is positive significant relationship between Human Capital Efficiency on ROA and EPS, and an insignificant negative relationship between Human Capital Efficiency on Size, lagged Human Capital Efficiency and Number of Employee Growth and it contributes to the existing Human Capital theories by revealing the HCE of Industrial goods companies and its impact on Corporate Performance.

Ekwe (2013) carried out a study on the Effect of Intellectual Capitals on Employee Productivity of Banks in Developing Economies: The Nigeria Experience. The study used the Value Added Intellectual Coefficient (VAIC) model to investigate the effect of the Intellectual Capital indices (i.e. Human Capital Efficiency, Structural Capital Efficiency and the Capital Employed Efficiency) on the Employee Productivity of banks in Nigeria. Data were collected from the annual reports of six banks spanning from 2000 to 2011 and analyzed using longitudinal time series data. The multiple regression analysis method was adopted for the test of the hypothesis. The SPSS statistical software version 17.0 was used for the data analysis. The result that there was a positive and significant relationship between components of VAIC and employee productivity of the banks in Nigeria. From the findings, it was established that indeed intellectual capital has positive and significant effect on Employee Productivity of banks in Nigeria.

Ailemen, Taiwo, Oladeji and Oyero (2016) undertook a research on An Evaluation of Investment in Human Capital Development on the Performance of Microfinance Banks (Mfb). The study adopted a purposive sample and Sixteen (16) Micro finance banks out of the thirty four (34) existing in Ogun state was investigated and random sampling technique was used to select respondents in each Micro Finance Banks. Primary source of data via questionnaires were used for data analysis. The statistical technique adopted was descriptive and inferential. The findings revealed that a total of 313 of the sample representing (98.4% of the sample) agreed that the efficiency and effectiveness of management is a major determinant of the performance of Micro Finance Banks in Nigeria and that human capital development has positive impact on overall performance of Microfinance banks.

Ferreira and Martinez (2011) carried out a study on Intellectual Capital: Perceptions of Productivity and Investment. Data was obtained from 440 employees at 13 Portuguese companies. Both ANOVA and Regression Analysis were conducted in order to understand the impact three Intellectual Capital Scale components have on perceptions of investment and organizational productivity. The results revealed that companies with higher scores of Structural Capital have a lower perception of investment in human resources and research, as well as a higher perception of investment in marketing and sales. Moreover, employees of companies with higher Structural Capital scores also have higher perceptions of productivity. On the other hand, organizations with higher investment in Customer Capital tend to be associated with a lower perception of organizational productivity.

Ismaila (2011) carried out a study aimed at assessing the impact of human capital investment on the performance of Nigeria banks. The study adopted the historical and descriptive research design. Secondary source of data was used for data collection which covers banks quoted on the Nigerian stock exchange as at 2005, using a sample size of 6 banks obtained; 2 from the old generation and 4 from the new generation bank. Regression was used to test for variables (the impact of human capital investment on performance) while, VAIC human capital efficiency coefficient was used to test the efficiency of human capital in Nigerian banks. The result revealed that there is significant relationship between market price per share (MPS) and human capital investment; there is a significant relationship between book value per share and human capital; while there is no significant relationship between earning per share (EPS) and human capital; also that human capital investment has positive impact on the efficiency of banks' employees. The study recommends among others, that banks should increase human capital investment in order to increase their MPS and BVS.

Ali (2015) carried out the study to examine the effect of Intellectual capital component on the financial performance of deposit money banks in Nigeria. The study was conducted using the descriptive research design. Secondary source of data was employed using a purposive sampling technique to select a sample of eight banks from the total population of banks listed on the Nigerian stock exchange for eight year period, 2006 – 2013. Correlation and Multi-linear regression technique were used for data analysis. The result revealed that intellectual capital component (HCE, SCE & CEE) have positive and significant effect on the financial performance of deposit money banks in Nigeria.

Firer and Stainbank (2003) undertook a research on testing the relationship between intellectual capital and a Company's performance: evidence from South Africa. The research design is inferential. Correlation and multiple regression analyses were used to test the hypotheses. The findings reveals that the relationships between the performance of a company's intellectual capital and profitability, productivity and market valuation are informative but varied. The empirical findings suggest that the performance of a company's intellectual capital can explain profitability and productivity, but not market valuation.

Karam and Sushila (2011) carried out the study on Financial Reporting of Intellectual Capital and Company's Performances in Indian Information Technology Industry. The research instrument adopted was empirical and descriptive. Sixty companies listed on NSE were taken for a period of 1999-00 to 2008-09. Regression model was employed and VAICTM model was used for data analysis in evaluating intellectual capital and their relationship with productivity, profitability, and market valuation of the companies. The result reveals that profitability of the company can be explained by the intellectual capital and that however, there is no significant association of intellectual capital with productivity and market capitalization of the companies for the selected time period of year 1999-00 to 2008-09.

Ekwe (2014) carried out the study on Intellectual Capitals and Financial performance indices of deposit money Banks in Nigeria: A Comparative Assessment. 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 and the SPSS statistical software version 17.0 was used for the data analysis. From the analyses, the result revealed that there were significant deviations in both the financial performance indicators and in the intellectual capital variables among the six banks studied,

also that banks with high intellectual capital records 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.

Onyekwelu, Okoh and Iyidiobi (2017) carried out a study on Effect of Intellectual Capital on Financial Performance of Banks in Nigeria. The study adopted ex-post facto research design and made use of the Value Added Intellectual Coefficient (VAIC) to ascertain the extent that intellectual capital indices affect financial performance of three Nigeria. Data were collected from the published annual financial statements of the three banks and analyzed using regression tool. The result of the study indicates that IC has a positive and significant effect on banks' financial performances of the banks but some are not significant and further indicated that the banks with high IC also show high financial performance. Recommendation of the study is for banks in Nigeria invest vigorously in development of their human capital as a key driver of firm's performance.

2.4 Summary of Literature Review

The review of relevant literature on empirical studies was based on the either the human capital component of Intellectual Capital or the total intellectual capital component (through employing the VAIC model) and most of the study revealed a positive significant relationship of Intellectual Capital on performance (either financial or corporate performance). In the empirical study reviewed it is of note that previous study carried out by most of the researcher's based their dependent variable on Performance and their Independent variable on Intellectual Capital. But little or no empirical research have been carried out on the Management aspect of Intellectual Capital in Nigeria, this this research study tends to fill by undertaking an empirical study on the effect of Intellectual Capital Management on revenue generation of listed money deposit banks in Nigeria.

3.0 Methodology

3.1 Research Design

This study adopted ex-post facto design. This was adopted because the event has already occurred and there was no way for any manipulation of the variables. The aim of the study was to evaluate the effect of Intellectual Capital Management on revenue generation of listed commercial banks in Nigeria.

3.2 Area of the Study

The area of this study covers all the banking sector in Nigeria. These banking firms are quoted in Nigerian Stock Exchange (NSE) Market, the study intends to ex-ray their published annual reports over times in line with of Intellectual Capital Management on revenue generation.

3.3 Population of the Study

The target population for this study composed all twenty-one (21) listed deposit money banks that had submitted audited financial statements to Nigerian Stock Exchange (NSE).

3.4 Sampling and Sampling techniques

A sample size of 5 was obtained from the calculation of sample size from sample calculator as developed by Best Survey System (1982) retrieved from www.surveysystem.com/sscalc.htm. The population size is 21, the confidence level is at 95% while the confidence interval is between 10-50 percent that is, to say between 50-10 and 50+10 percent of the population will behave the same way. The annual report of these firms will be used ranging from 2011 to 2016

which is a period of Six (6) years respectively. The banks randomly selected for this research includes First Bank of Nigeria, First City Monument Bank, Diamond, GTB and Access Bank.

3.5 Method of Data Collection

Considering the nature of the research which relied on financial information which are secondary in nature. Data were gathered mainly from secondary sources, which is the most suitable for this work. Since the work is based on the effect of Intellectual Management on revenue generation of listed deposit money banks in Nigeria. Secondary data are already existing data or information extracted from the selected area or population of study. For the purpose of this work, the annual report as published of the selected money deposit banks will be of great assistance to the researcher.

3.6 Method of Data Analysis

There is need for deductive and inferential statistical tools to be employed in order to get a justified and critical analysis of the research. Inferential statistics will be used to test the hypothesis while multiple regression will be employed to analyse the data. Multiple regression analysis shows the degree of relationship between the independent variable (ICM) and one or more dependent variables (Revenue generation). F-test will be employed to determine whether to accept or reject the null hypotheses formulated.

3.7 Model Specification

Based on the hypotheses of this study, the following models were derived to conduct the multiple regression analysis.

$$RG = \beta_0 + \beta_1 HCE + E_i \dots\dots\dots 1$$

$$RG = \beta_0 + \beta_1 SCE + E_i \dots\dots\dots 2$$

$$RG = \beta_0 + \beta_1 ICM + E_i \dots\dots\dots 3$$

Where:

RG = Growth in Revenue

HCE = Human Capital Efficiency

SCE = Structural Capital Efficiency

ICM = Intellectual Capital Management

β_1 = Regression coefficient of variable ICM

β_0 = Constant

I. Description of the Dependent Variable

Due to the relative importance of intellectual capital Management in organizational productivity, the Revenue Generation (GR) is the dependent variable adopted in this paper.

Growth in Revenue: Growth in Revenue measures the changes in firm's current year's sales over the previous year's sales. Increase in revenue signals the firm's growth prospect (Najibullah, 2005; Ekwe, 2013). It is calculated as:

$$RG = (\text{a particular year's revenue} - \text{the preceding year's revenue}) / \text{the preceding year's revenue} \times 100/1$$

II. Description of the Independent Variables

(a) **Intellectual Capital Management:** Edvinsson (1997:372) is by multiplying the interaction between the human capital and structural capital. (i.e. $ICM = HCE \times SCE$)

Where;

(b) Human Capital Efficiency (HCE) – which is the indicator of value added efficiency of human capital. Pulic (1998) states that “Total salary and wage costs are an indicators of a firm’s human capital (HC)” which is agreement with the conclusion with that of Edvinsson (1997).

$HCE = VA/HC$ (where; VA = Value Added & HC= Human Capital).

(c) Structural Capital Efficiency (SCE) – which is the indicator of value added efficiency of structural capital. The two sub-components of VAIC form the independent variables in this study. $SCE = SC/VA$ (i.e. SC is Structural Capital & VA is Value Added)

Therefore; SC = structural capital of the company represented as (VA-HC)
(Value Added – Human Capital)

Pulic (1998) states the higher the VAIC coefficient, the better the efficiency of VA by a firm’s total resources.

Steps involved in the determination of HCE and SCE includes:

STEP 1: Determine a firm’s total VA.

VA= value added, which represents the gross global value added created by the firm

The value of a company for the purpose of our study is given below:

According to Uadiale and Uwuigbe (2011); $[VA = I + D + T + R]$

Where: I = Interest expense, D = Dividends, T = Corporate taxes, R = Retained profits

STEP 2: Determine the Human Capital Efficiency (HCE)

$HCE = VA/HC$

Where: VA = Value added as defined above in step 1; HC = Human Capital

STEP 3: Determine the Structural Capital Efficiency (SCE)

$SCE = SC/VA$

Where: SC = structural capital of the company represented as (VA-HC)

(Value Added – Human Capital)

4.0 Data Presentation, Analysis and Discussion of Findings

This chapter contains the presentation, analysis and interpretation of the data collected for this research work. It highlights both the mathematical and statistical techniques adopted in testing the research hypotheses of the study which sought to examine the effect of intellectual capital management on revenue generation of listed deposit money banks (DMBs) the in Nigeria.

4.1 Presentation of Data

In this section, we present the data compiled from the annual report and accounts of the firms under study.

Table 4.1 Cross-Sectional Panel Data

FIRM	YEARS	RG	ICM (A x B)	HCE (A)	SCE (B)
FBN	2011	0.2	1.543	2.542	0.607
	2012	0.25	1.66	2.661	0.624
	2013	21	1382.28	1396.24	0.999
	2014	7.04	36.24	37.37	0.97
	2015	16.9	3.253	4.253	0.765
	2016	15.5	3.802	4.801	0.792

ACCESS					
BANK	2011	21.7	2.599	3.6	0.722
	2012	81.36	1.938	2.937	0.66
	2013	4.13	3.416	4.42	0.773
	2014	22.96	4.209	5.21	0.808
	2015	38	5.209	6.208	0.839
	2016	13	3.55	4.551	0.78
DIAMOND					
DIAMOND	2011	-4.02	-1.631	-0.631	2.584
	2012	33.62	-0.0209	0.791	-0.264
	2013	28.09	5.832	6.829	0.854
	2014	13.65	6.387	7.384	0.865
	2015	3.09	1.123	2.123	0.529
	2016	-4.87	0.069	1.684	0.041
FCMB					
FCMB	2011	18.6	1.029	2.03	0.507
	2012	58.6	2.623	3.623	0.724
	2013	-94.14	-0.632	0.367	-1.721
	2014	4.8	-0.37	0.63	-0.588
	2015	-37	-0.746	0.252	-2.961
	2016	10.7	-0.535	0.464	-1.154
GTB					
GTB	2011	22.08	5.014	6.012	0.834
	2012	19.2	6.154	7.156	0.86
	2013	7.86	7.407	8.407	0.881
	2014	12.36	7.535	8.533	0.883
	2015	7.98	7.654	8.658	0.884
	2016	36.1	10.677	10.677	0.906

Source: Researcher's Compilation, 2018

Table 4.2: Regression results on the effect of HCE on Revenue Growth

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.012	.037		.323	.749
HCE	.019	.004	.640	4.409	.000

a. Dependent Variable: RG

R	=	.640
R-Square	=	.410
Adjusted R-Square	=	.389
F – Statistic	=	19.439 (.000)
Durbin Watson Statistic	=	.1.723

Source: Researcher's Estimation, 2018

Table 4.3: Regression results on the effect of SCE on Revenue Growth

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.103	.070		1.466	.154
SCE	.076	.086	.165	.888	.382

a. Dependent Variable: RG

R	= .165
R-Square	= .027
Adjusted R-Square	= -.007
F – Statistic	= .788 (.382)
Durbin Watson Statistic	= .933

Source: Researcher's Estimation, 2018

Table 4.4: Regression results on the effect of ICM on return on Revenue Growth

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.085	.064		1.324	.196
ICM	.102	.081	.232	1.263	.217

a. Dependent Variable: RG

R	= .232
R-Square	= .054
Adjusted R-Square	= .020
F – Statistic	= 1.596 (.217)
Durbin Watson Statistic	= .976

Source: Researcher's Estimation, 2018

4.2 Data Analysis

Table 4.1 showed the major variables of intellectual capital management and revenue growth for a period of six (6) years obtained from five (5) banks annual reports from 2011 to 2016.

Table 4.2 showed the regression results between Human Capital Efficiency (HCE) and revenue growth. The regression results showed that the estimated coefficient of the regression parameter have a positive sign and thus conform to the a-priori expectation. The implication of this sign is that the dependent variable revenue growth is positively affected by Human Capital Efficiency (HCE). The coefficient of determination R-square of 0.410 implied that 41% of the sample variation in the dependent variable revenue growth is explained or caused by the explanatory variable while 59% is unexplained. This remaining 59% could be caused by other factors or variables not built into the model. The fairly low value of R-square is an indication of a fair relationship between the dependent variable revenue growth and independent variable Human Capital Efficiency (HCE). The value of the adjusted R² is 0.389. This shows that the regression line which captures 38.9 per cent of the total variation in revenue growth is caused by variation in the explanatory variable specified in the model with 61.1 per cent accounting for the stochastic error term. The F-statistic was also used to test the overall significance of the model. The F-value of 19.439 is an indication that the model is statistically significant at 5

percent level of significance at degree of freedom $df_1 = 1$ and $df_2 = 28$. Finally, the test of autocorrelation using DW test shows that the DW value of 1.723 falls within the conclusive region of DW partition curve. Hence, we can clearly say that there exists no degree of autocorrelation.

Table 4.3 showed the regression results between Structural Capital Efficiency (SCE) and revenue growth. The regression results showed that the estimated coefficient of the regression parameter have a positive sign and thus conform to the a-priori expectation. The implication of this sign is that the dependent variable revenue growth is positively affected by Structural Capital Efficiency (SCE). The coefficient of determination R-square of 0.027 implied that 2.7% of the sample variation in the dependent variable revenue growth is explained or caused by the explanatory variable while 97.3% is unexplained. This remaining 97.3% could be caused by other factors or variables not built into the model. The low value of R-square is an indication of a poor relationship between the dependent variable revenue growth and independent variable Structural Capital Efficiency (SCE). The value of the adjusted R^2 is 0.007. This shows that the regression line which captures .7 per cent of the total variation is caused by variation in the explanatory variable specified in the model with 93 per cent accounting for the stochastic error term. The F-statistic was also used to test the overall significant of the model. The F-value of 0.788 is an indication that the model is statistically insignificant at 5 percent level of significant at degree of freedom $df_1 = 1$ and $df_2 = 28$. Finally, the test of autocorrelation using DW test shows that the DW value of 0.933 falls within the inconclusive region of DW partition curve. Hence, we can clearly say that there exists a degree of autocorrelation.

Table 4.4 showed the regression results between Intellectual Capital Management (ICM) and revenue growth. The regression results showed that the estimated coefficient of the regression parameter have a positive sign and thus conform to the a-priori expectation. The implication of this sign is that the dependent variable revenue growth is positively affected by Intellectual Capital Management (ICM). The coefficient of determination R-square of 0.054 implied that 5.4% of the sample variation in the dependent variable revenue growth is explained or caused by the explanatory variable while 94.5% is unexplained. This remaining 94.5% could be caused by other factors or variables not built into the model. The poor value of R-square is an indication of a poor relationship between the dependent variable revenue growth and independent variable Intellectual Capital Management (ICM). The value of the adjusted R^2 is 0.020. This shows that the regression line which captures 2 per cent of the total variation is caused by variation in the explanatory variable specified in the model with 98 per cent accounting for the stochastic error term. The F-statistic was also used to test the overall significant of the model. The F-value of 1.596 is an indication that the model is statistically insignificant at 5 percent level of significant at degree of freedom $df_1 = 1$ and $df_2 = 28$. Finally, the test of autocorrelation using DW test shows that the DW value of 0.976 falls within the inconclusive region of DW partition curve. Hence, we can clearly say that there exists a degree of autocorrelation.

4.3 Test of hypotheses

Hypothesis one

H₀: Human capital efficiency has no significant effect on revenue growth.

With reference to table 4.2, the calculated t-statistics of 4.409 with probability value of 0.000 showed that the null hypothesis is rejected and the alternative accepted. This means that Human capital efficiency has a significant effect on revenue growth.

Hypothesis two

H₀: Structural capital efficiency has no significant effect on revenue growth.

With reference to table 4.3, the calculated t-statistics of 0.888 with probability value of 0.382 showed that the null hypothesis is accepted and the alternative rejected. This means that Structural capital efficiency has no significant effect on revenue growth.

Hypothesis three

H₀: Intellectual Capital Management has no significant effect on revenue growth.

With reference to table 4.4, the calculated t-statistics of 1.263 with probability value of 0.217 showed that the null hypothesis is accepted and the alternative rejected. This means that Intellectual Capital Management has no significant effect on revenue growth.

4.4 Discussion of findings

Based on the analysis and the empirical results the study revealed the following findings;

- (i) Human Capital Efficiency (HCE) has a positive and significant effect on revenue growth of listed deposit money banks in Nigeria.
- (ii) Structural Capital Efficiency (SCE) has a positive but no significant effect on revenue growth of listed deposit money banks in Nigeria.
- (iii) Intellectual Capital Management has a positive and no significant effect on revenue growth, also indicating a poor relationship between Intellectual Capital Management and revenue growth of listed deposit money banks in Nigeria.
- (iv) The study also revealed that there is a fair relationship between HCE and revenue growth while SCE and ICM had a poor relationship.

The estimated coefficients of the regression parameter have a positive sign and thus conform to our a-priori expectation. The implication of this sign is that the dependent variable revenue growth is positively affected by intellectual capital management though there is no significant relationship. This result agrees with the findings of Firer and Stainbank (2003) who concluded that intellectual capital has no positive relationship on business performance, but negates the findings of Apati, Ugwoke and Chikezie (2017) who reports that there is a significant relationship between intellectual capital and firm's financial performance and that proper management of intellectual capital has an impact on firms reported financial performance and Ekwe (2013) who also find a positive and significant relationship between intellectual capital management and growth in revenue.

5.0 Conclusion/Recommendations

5.1 Conclusion

The study examined the effect of Intellectual Capital Management on Revenue Generation of Listed Deposit Money Banks in Nigeria. Thus, the study concludes that Intellectual Capital Management has a positive but no significant relationship on revenue growth of Deposit Money Banks in Nigeria, while Human Capital have a positive and significant relationship on revenue growth of listed Deposit Money Banks in Nigeria as revealed from the analysis and interpretation of findings.

5.2 Recommendations

- 1) Management of deposit money banks in Nigeria and the financial service industry should invest in human capital in order to enjoy increase in revenue generation.

- 2) There is also need for deposit money banks in Nigeria to optimally determine the level of intellectual capital management so that layoff and underutilisation would be highly discouraged.
- 3) Intellectual Capital management should be strengthened by management of deposit money banks in order to enhance improved performance in revenue generation.
- 4) CBN and other regulators should endeavour to strengthen the enforcement of policies and measures that will promote enhanced human capital development within the financial sector in Nigeria, as this will in turn enhance their revenue generation.

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