

INTELLECTUAL CAPITAL AND PERFORMANCE IN ORGANIZATIONS: AN EXPLORATION OF ISSUES

Gbenga Williams and Anyim John Kelechi

¹*Department of Business Administration, Faculty of Management Sciences,
Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus*

²*Heritage Bank Plc, Umuahia Okpara Square Branch, Abia State*

Abstract

This paper examined Intellectual Capital and Performance in Organizations: An Exploration of Issues. The paper analyzed intellectual capital, human capital, structural capital, social/relational/customer capital, employee performance, intellectual capital and employee performance; and offers suggestions to managers and policy makers.

Key Words: Intellectual Capital, Human Capital, Structural Capital, Social/Relational Capital, Employee Performance

Background of the study

Several Authors like (Wiktorsson, 2014; Ferdows, 2014; Patton, 2007; Ogbu, 2012; Adiele, 2002) have shown that higher productivity among manufacturing firms is a sure means of boosting economic growth, enhancing firm growth and increasing standard of living of the people through large supplies of both consumer and capital goods at a lower costs and prices. In the traditional view years ago, emphasis was made more on land, labour and capital as economic assets due to its physical nature. Today, Intellectual capital has also become an important business resource that organizations can leverage on to gain competitive advantage. Iswati and Anshori (2007) observe that human being has become the central attention in this century hence intellectual capital research now is not only paramount but also timely.

Economic development and competitive authority of an organisation and country are derived from knowledge (Fatres&Beygi, 2009). Accordingly, organizations depend more on knowledge and information. Seetharaman, Bin Zaini and Saravanan (2002) observe that a shift has occurred from an industrial to a knowledge-based economy where every activities of a manufacturing firms ceased to be business as usual. The most critical ingredients of firm resource endowment are not tangible such as financial or physical assets, but are intangible and, thus, rare, valuable, imperfectly imitable and non-substitutable.

The Organisation for Economic Cooperation and Development (OECD, 2001) observe that human capital, which is an integral part of intellectual capital, has been recognized as one of the key determinants of growth today in any business enterprise. In the new economic system, which is popularly known as the knowledge economy, intangible or intellectual assets have eventually been recognized as the prominent resources. There is no doubt about the fact that higher performance of employee enhances firm performance by meeting the given deadlines of the product orders and thus minimizes the average delivery lead time of the product orders. This may eventually lead to increase in market share of such manufacturing firms.

As the tide is changing year in year out, organizations including manufacturing bottling firms keeps improving on their status quo by introducing different varieties of products and also

venturing into pet bottleproducts which has also receive a wide acceptance from the members of the public. As stated byLoto (2012), a producing company is divided into sub-processes in different ways; yet, thefollowing five are identified as main processes, each with a logic, objectives, theory and key figures of its own. It is important to examine each of them individually, yet, as a part of thewhole, in order to be able to measure and understand them. These processes are real process, income distribution process, monetary process, and market value process. In Nigeria, organizations/manufacturing bottling firms generate and update production process schedules, which are plans that state when certain controllable activities (processing of jobs by resources) should take place.

For instance, firms of course must schedule production, which means developing timing forworkers, equipment, purchases and maintenance and also the meeting of the demands ofcustomers for a long run efficiency and effectiveness. However, in real situations the production activity is imperfect as production schedules become inaccurate or unfeasible due to disturbances of demand uncertainties and frequent consumer demand for varieties. This causes the deviationof the actual production from that scheduled and the consequent complexity of finished goodsinventory levels and capacity utilization. Such complexity if not properly managed could resultin customer dissatisfaction (Huaccho, 2003). In the word of Patton (2007), the productivity of a firm lies more on its intellectual capital and system capabilities than on its physical assets. Bontis (2001) argue that leveraging knowledge assets is the key to a firm's prosperity.

The manufacturing firms are not an exemption to this as they have engaged in different means and process of production as the tide changes. The concept of intellectual capital has been identified as a key resource and driver of organizational performance and value creation. With the gradual shift of global business world into the knowledge economy, it is becoming increasingly important and obvious to business organizations that to survive in business in this complex and dynamic world, adequate attention must be paid to the intellectual capital base of the firm.

Following from the above, the Manufacturing sector in Nigeria has seen the need to keep winning and also to have a large customer data base. This has motivated the companies to take some drastic action with respect to enhancing its intellectual capital base. Ekwe (2012) observe that banks in Nigeria nowadays engage mostly university graduates, who possess a minimum of second class honors degree (upper division) in their employment policies. This same act has been extended to the manufacturing industry in the country as there is need to meet the demand of the customers out there through timeliness in operations and cost minimizing production technique.

Review of Related Literature

Conceptual Review

Intellectual Capital

The concept of intellectual capital (IC) is grounded in several developments which are closely related to the characteristics of the knowledge economy. The term "Intellectual Capital" is used as a synonym for intangible or knowledge assets. Intellectual capital from the viewpoint oforganizational resources, related to creating wealth investment in knowledge, moral assets, and experience (Stewart, 1997). Intellectual capital is defined as a group of knowledge assets and is considered among the features of that organization and significantly leads to improvement of competitive situation of organization through increase of added value for key stakeholders of organization (Marr, 2005).

Even after more than a decade, the term intellectual capital has numerous interpretations and definitions. This divergence can be explained by the fact that the field is still in its "embryonic-stage" (Bontis, 2002); Andriessen (2004) add to this that each author just wants "to convey a specific message that he thinks is important". However, despite the differences, there is also a great deal of agreement about the nature of intellectual capital. Stam (2005) present the core-elements of agreement as;

I - Intellectual capital is about intangibles.

An intangible is something which is "hidden or not-material", which is "difficult to understand" and which "cannot be known by the senses", although "it is known to be real" (Longman Dictionary). Intellectual capital present intangibles as an object so that they can be recognized and understood (Mouritsen, Bukh, Larsen, & Johansen, 2002),

- Intellectual capital is the source of competitive advantage.

As described above, intellectual capital is a further specification of the resource-based view of the firm. The starting point of this intangible-based view of the firm is that intangibles are the main source of value creation and competitive advantage (Stam, 2007).

- Intellectual capital gives structure to organizational resources.

Recognizing the importance of intangibles is one thing, but translating it into a theory is another. Intellectual capital is the movement that gives content to the challenge expressed by Drucker(1993) that we need a theory that puts knowledge (intangibles) into the centre of the wealth creating process. Intellectual capital makes it possible to communicate, interpret and control intangibles,

- Intellectual capital is about human and non-human resources.

Intellectual capital represents a holistic view of the firm. It is not only about the people (like Human Resource Accounting), but also about the non-human intangible resources, like organizational processes, structures, systems. Intellectual capital goes "beyond the brain" (Andriessen, 2004).

- Intellectual capital is about interaction between resources.

Intellectual capital consists of different sub classes of intangibles (human capital, structural capital, relational capital). Value creation, however, is the product of interaction between the different classes of intangibles (Sanchez, Chaminade, & Olea, 2000). The word intellectual capital should not be taken too literally. Intellectual capital is a metaphor; a comparison between two seemingly unrelated subjects - because it describes the importance of all the intangible resources by comparing the ability to use the human mind (intellectual) with financial wealth (capital).

It is therefore not only about the people, their knowledge and skills, but also about organizational processes and relationships with the customers. The word capital refers to financial wealth. However, the essence of the phrase intellectual capital refers almost to the opposite. Intellectual capital goes beyond the traditional accounting principles. It is no longer relevant whether resources can be expressed in monetary terms or not. It is also no longer relevant whether an asset is owned by the organization or not. What matters is whether the resource is available or not. Does the company have access to it in order to realize its strategic goals? That is the main qualifying characteristic of intellectual capital.

The literal meaning of both words refers to the importance of the "head". If we look at the use of the word capital in the language it distinguishes the important from the ordinary (e.g. capital city, capital punishment, capital letters, capital importance). In this sense intellectual capital refers to intangibles that are of strategic value to the company, strategic in the sense that they contribute ' to the creation of organizational value and the achievement of organizational goals:

intellectual capital refers to strategic intangible resources. Considering this review, we would define intellectual capital as all intangible resources that are available to an organization, that give a relative advantage, and that in combination are able to produce future benefits. Although each author uses its own denotations, the different subsets make similar distinctions. More and more, these three sub classes are referred to as human capital, structural capital, and relational capital (Bontis, 2002; Community of European Commission 'CEC', 2006).

Human capital: this first class represents anything related to the people within the • "organization, the employees, their tacit knowledge, skills, experience and attitudes. There are many definitions of human capital in the literature. The term human capital refers to the knowledge, seniority, mobility rate, skills, and experiences of the entire organisation's staff and management. Arbab and Abbasi (2010) define human capital as a set of tacit knowledge and explicit knowledge of employees which is considered value for the organization. On the other hand, human capital is defined as a combination of knowledge, skills, initiative and ability of employees for duties (Bontis, 2000).

However, one of the most useful and widely used definitions is that by the OECD (2001), which affirm that human capital is the "knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economy well-being. Hence, the education, experience and abilities of an individual have an economic value for the individual, foreemployers and for the economy as a whole. It refers to the knowledge that employees possess as well as their ability to generate it, which is useful for the firm, and includes individual values and attitudes, aptitudes, and know-how (Subramaniam & Youndt, 2005). Human capital reflects the overall skill, expertise, and knowledge level of an organization's employees. Nevertheless, although human brain can be considered as the main source of knowledge creation, an organization can accumulate, codify, and store individual knowledge in databases, proceedings, and organizational structures. Depending on the nature of this collective and structured knowledge, we could talk about organizational capital, which is referred to institutionalized knowledge and organizational mechanisms to integrate and transfer knowledge throughout the organization, and technological capital that refers to organizational technological knowledge. Yi -Chan, and Yen-Chan, (2010) present indicators to measure human capital dimension as: Skills of employees, personnel creativity and intelligence, standing and credibility of staff compared to other organizations- expertise of the staff in certain job tasks and the amount of knowledge and new ideas among employees.

Human capital and its evaluation indices:-Human capital represents the individual tacit knowledge embedded in the mind of the employees. Human capital is important as the foundational source of innovation, strategic renewal of a company and the company can thus realize and create value in the knowledge-based economy. Human capital can be defined as a combination of employee's competence, attitude and creativity. Employees' competence is the hard part of Intellectual Capital. It includes employee's knowledge, skills, talents, and knack, of which knowledge and skill are uppermost. Knowledge, which consists of technical knowledge and academic knowledge, is obtained mainly through school education and is thus theoretical. Skills, the employee's capability of accomplishing practical assignments, are obtained primarily through practice, especially the tacit skills that cannot be literally expressed, even though it can also be developed through school education.

Structural Capital and Performance in Organizations

Structural capital is an important strategic resource which encompasses non-human assets, such as information system, routine, procedures and databases (Cabrita and Bontis, 2018). They posit that structural capital holds an organization together due to its capability in developing

tools to retain, package and share knowledge throughout the value chain. To Joshi, et al (2010), structural capital is seen as developed knowledge via an organization, and is inseparable from the firm. It can involve organizational structures, procedures, routine, systems, hardware, databases and organizational cultures. Other elements exist, such as invention, processes, copyright, patents, technologies and system which can be classified under structural capital. Because of its diverse components, structural capital can be classified further into organization, process and innovation capital. Organizational capital includes the organization philosophy and systems for leveraging the organization's capability. Process capital includes the techniques, procedures, and programmes that implement and enhance the delivery of goods and services. Innovation capital includes intellectual property such as patents, trademarks and copyrights, and intangible assets. Although structural capital is able to improve employee capability, it should be considered as a separate feature from personnel on levels on individuals. As Sveiby (2017:10) noted structural capital falls into patents, concepts, models and computer and administrative systems. To Stewart and Ruckschel (2018), structural capital could build a platform which enables employees to move towards innovation performance continuously within an organization. He also argued that, an appropriate structural capital would create a supportive environment for quick information dissemination, collective knowledge development, shortened lead times and more creative individuals. Although there is ample evidence to support a positive impact of intellectual capital (including structural capital) on corporate market values (Chen, Cheng and Hwang, 2015; Choi, Kwon and Lobo, 2018) and financial performance (Bontis, et al, 2017; Chen et al, 2010; Wand and Chang 2015; Youndt, Subyamaniam and Snell, 2014), not all point towards a positive relationship; some indicate negative relationships as well. For example, in a study that explored the link between innovation, IT and performance, the researchers found a nonlinear association between innovation capital and business performance (Huang and Lin, 2005). Similarly, Firer and Williams (2013) discovered an inverse relationship between human capital and VAIC (value added intellectual coefficient or also known as the value creation efficiency analysis) measures in the South African Market. On the other hand, some studies fail to discover any link between components of intellectual capital (including structural capital) and performances (Chen et al, 2015; Fernandes, Mills and Fleury, 2005).

Moreover, a proper integration of organizations physical resources and IC (including structural capital) can determine both the survival and the performance sustainability of an entity on a long-term basis, which managed to fulfill the expectations of its stakeholders; shareholders, creditors, suppliers, customers, communities, manpower including the whole human race present and future and the global community. IC consisting of human, structural, social and relational capital plays an important part in ensuring the success of organizations during the current century (Roos, Pike and Fernstrom, 2012). Asiaei (2014) also found that there is a positive association between structural capital and organizational performance.

Social/Relational/Customer capital: this third class represents the relationship with customers, suppliers and other external stakeholders. The value of customer capital is mainly determined by the extent to which an organization is able to maintain confidence in its reputation. It refers to the organization's establishment, maintenance, and development of public relations matters, including the degree of customer, supplier, and strategic partner satisfaction, as well as the merger of value and customer loyalty. It enhances the quality of group work and richness of information exchange among team members (Subramaniam&Youndt, 2005). Social capital arises from relationships processes that a firm maintains with external agents that surround it (Hsu & Fang, 2009).

As Acedo, Barroso and Galan (2006) highlighted, relational capital or capabilities are an emerging theme in the fields of strategic management and industrial marketing. Social capital gathers those intangible assets that a firm obtains when it maintains successful relationships with agents of its environment as customers, suppliers, or allies; hence, it refers to the establishment, maintenance, and development of relations, including aspects such as the degree of customer, supplier, and strategic partner satisfaction, as well as the merger of value and customer loyalty.

• **Social capital and its evaluation indices.** Social capital, an essential part of Intellectual Capital, is the value embedded in the marketing channels and relationships that an enterprise develops by conducting business. Compared with human capital and structural capital, it more directly affects the realization of company's value and is increasingly becoming the critical factor. Claes Fornell, a professor at Michigan University, found that the satisfaction of customers could maintain the business relationship, decrease the elasticity of product price and improve company's prestige (Fornell, 1992). In this study, customer capital is classified into basic marketing capability, market intensity and customer's loyalty. The basic marketing capability is the ground work for a company to manage its human capital.

To increase market intensity and customer's loyalty, a company should first enhance its basic marketing capability, such as the serving capability, and the capability of collecting and utilizing customers' data. Market intensity, the ultimate expression of customer capital, refers to the current state of market building and its potential. Customer's loyalty is playing a more and more important role in today's heated competition. A company without loyal customers will have to present to various sales promotions to allure new customers who are sometimes unprofitable to the company. Accordingly, the company should make great efforts to improve the quality of product service pertaining to the current and future needs of customers, and to enhance customer's action and thereupon customer's loyalty.

The three variables cannot function in isolation as each is part of a whole that is dependent with each other. Lynn (1999.) described how human capital resembles a root, absorbing all then structural capital (organizational capital) is like a trunk, providing nutrient transit, and social capital is like the leaves, conveying environmental elements. These elements interact to create more than the sum of their parts (Subramaniam&Youndt, 2005). While human capital provides organizations with a platform for diverse ideas and thoughts, social capital encourages collaboration both within and across organizations (Subramaniam&Youndt, 2005),

Employee performance

Existing literature presented employee performance as a complex and multidimensional construct that can be defined and assessed in varying ways in the manufacturing firms. For all that, employee performance can be defined in terms of quantifiable outcomes of work behaviours and in terms of behavioural dimensions (e.g., work related communication, decision making, attention to detail) that are less quantifiable. It can be defined solely in terms of task performance related to the activities that support the technical core of the organization and are formal part of the relevant job description but can also be defined as contextual performance related to the activities that support the social and psychological environment of the organization and its employees.

Employee performance in the manufacturing sector is interchangeably used as Knowledge productivity. This is because the manufacturing sector heavily depends on the technical Knowhow of the employees to remain relevant in the business environment. Employee performance in this context refers to the competence of individuals and groups to

gradually improve and radically innovate operating procedures, products and services in order to help organizations improve their knowledge productivity.

Siam (2007) propose the knowledge productivity enhancer which includes acquiring subjectmatter expertise, learning to identify and solve problems, cultivating reflective skills, securing communication skills, acquiring skills for self regulation of motivation, promoting peace and stability, and causing creative turmoil in order to stimulate innovation. Drucker (1993) argued that making knowledge productive is the responsibility of management and requires a systematic and organized application of knowledge to knowledge in the production based sector.

Employee Performance is the results of a person's activities in terms of performing the assigned duties at any given time, meeting the predictive criteria or key benchmarks in the presented framework. This framework acts as a means for judging the efficiency of the group members, institutes and organizations (Emamgholi, 2011). The emphasis is on improvement, learning and development in order to achieve the overall business strategy and to create a high performance workforce (Dooley, 2000).

In the view of Kemboi, Geoffrey and Keter (2014), the performance of an employee has become critically important and of value in achieving organizational goals and organizational performance results. Employee performance is defined as a process for establishing a shared workforce understanding about what is to be achieved at an organization level. It is about aligning the organizational objectives with the employees' agreed measures, skills, competency requirements, development plans and the delivery of results.

In manufacturing and service settings, employee performance rates can be defined in terms of changes in the unit of output per unit of input over time, where the unit of output is often a quantifiable number or cost of items produced and the unit of input is often a measurable quantity such as the number or cost of labour hours (Wassenhove, 2001). Some scholars adopt a macro-economic perspective to interpret knowledge productivity (employee performance) as a result (Machlup, 1972), while others apply a managerial perspective to interpret knowledge productivity as a human ability to perform a task meeting the anticipated outcome (Drucker, 1999).

The variable parameters for employee performance in this knowledge base firms are continuous improvement process, continuous improvement technology, continual service improvement, exploiting existing knowledge to develop processes, exploiting existing knowledge to develop, technology, exploiting existing knowledge to develop service, promote innovation to provide -----, competition, and radical changes in service delivery.

In this paper, employee performance are described using three indicators of knowledge base productivity that are critical in knowledge-intensive organizations. These are: creative operations by leveraging on the firm's knowledge resources, enhanced product innovation as a result of utilizing knowledge and ability; and signals of competence to external constituencies by knowledge leveraging.

Intellectual Capital and Employee Performance

In the view of Patton (2007), the productivity of a firm lies more on its intellectual capital and system capabilities than on its physical assets. Bontis (2001) argues that leveraging knowledge assets is the key to a firm's prosperity. Intellectual capital has received considerable attention from academics. The economist Galbraith (1969) was the first to propose the intellectual capital concept, and described intellectual capital as behaviour that requires the exercise of the brain. Intellectual capital was not understood as static intellect, but rather as demanding

dynamic intellect-creating activities. It is assumed that competitive advantage depends on how efficiently the firm builds, shares, leverages, and uses its knowledge. Specifically, a systematic interpretation of intellectual capital is adopted by identifying three main components: human capital, structural capital, and social capital, all of which have been frequently cited in the literature.

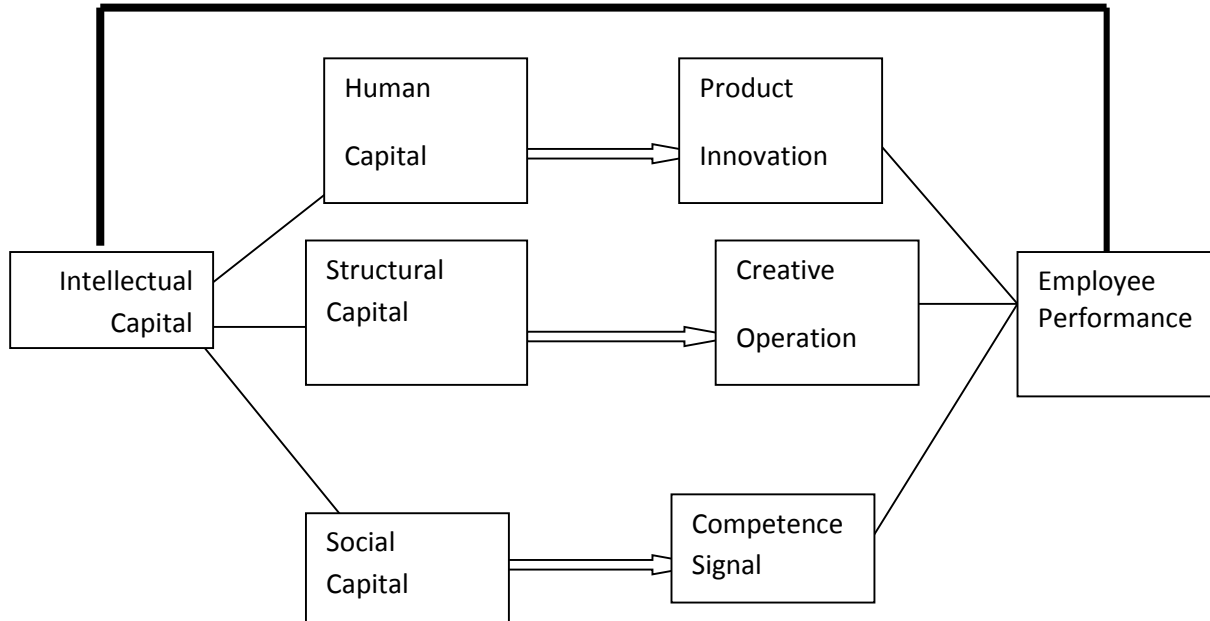


Figure 1: Conceptualized Intellectual Capital and Performance Model, Source: Researcher, (2021).

From the above figure, the components of intellectual capital influence employee performance directly. However, these influences are not always isolated, given that human capital, structural capital (organizational capital), and social capital are often intertwined in organizations. Therefore, their interrelationships also play an important role in shaping these influences. It is known that organizations adopt different approaches for accumulating and utilizing their knowledge, and that these approaches present themselves as different aspects of intellectual capital, i.e., human, structural, and social capital (Davenport & Prusak, 1998; Nahapiet & Ghoshal, 1998). It is also widely accepted that an organization's capability to innovate is closely tied to its intellectual capital (Subramaniam and Youndt, 2005). At the individual level, knowledge generation and transfer is a function of willingness.

From a managerial and economic perspective, productivity is mainly a function of three variables: technology, labor and organization. Any variable, individually taken, adds to or deducts from productivity: up-to-date, modern equipment and systems; professional, skilled human capital; coherent and adequate coordination, efficient work routines, each can be a source of incremental and dramatic change in productivity.

Apart from the relative contribution of each variable, the interplay and the mutual impact of each other fuel changes in productivity both at macro and micro level. Making knowledge workers productive requires changes in basic attitudes, whereas making the manual worker more productive only requires telling the worker how to do the job (Drucker, 1999). In addition, such attitudinal changes are not to be made only on the part of Individual knowledge workers, but also *of the total organization.

Individuals and their associated human capital may encourage the questioning of established norms and originate new ways of thinking, but their unique ideas often need to connect with one another for radical breakthroughs to occur. The extent to which product innovation, creative operation and signal of competence are valuable to the firm depends on contextual factors, including the aspects of products and services that are most valued in the market, the extent of competition, and the rate by which knowledge can be replicated by competitors (Haas & Hansen, 2005). In this sense, like other forms of productivity, employee performance is related to the ultimate value derived from leveraging on the firm's resources for the achievement of the organizational goals.

Theoretical Framework

This work is anchored on the system theory developed by Chester Barnard (1938). The system theory advocates that organization in search for solutions to organizational problems, should look beyond one single rigid solution; rather they should examine all critical variables both in the internal and the external environment of the organisation. This is because they all interact together for the achievement of organisational goals and objectives. The perception of an organisation as a single unit with lot of inter-related parts will assist managers in having a better perspective of their organisation which in turn will help them in providing a better method of analyzing and solving problems. The basic assumptions of this theory are;

- A system is greater than the sum of its part.
- A typical organisation is a system consisting of a set of interrelated parts, with each part forming a sub-system of a whole system.

Empirical Review

Many scholars/ researchers have investigated intellectual capital an employee performance using different approaches. Ekwe (2013) did a research on the effect of Intellectual capitals on Employee Productivity of Banks in Developing Economies: The Nigeria Experience. The study uses 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. The data were collected from the annual reports of six banks and analysis was conducted using longitudinal time series data generated from the annual reports and accounts of the selected banks in Nigeria spanning from year 2000 to 2011. 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 study showed that there was a positive and significant relationship between components of VAIC and employee productivity of the banks in Nigeria (VIAC coefficient = 1.186, R2 c = 0.806, R2 t = 0.49, P < 0.05). From the result stated above, it is thus established that indeed intellectual capital has positive and significant effect on Employee Productivity of banks in Nigeria.

Al-Fadel (2009) studied the Relationship between intellectual capital and value Creation. The study highlighted the role of Intellectual Capital and how it is important to create the organization's value. The study also concluded that Intellectual Capital can't be established by the investment volume, but through the intangible value of the organization since this value is coming from the employees' mind toward innovation and that requires suitable organization climate to provide the main requirements for strong and healthy relations between the management and the workforce

Salman, Mansour and Babatunde. (2012) investigated the impact of intellectual capital on return on assets in Nigerian manufacturing companies. Their results show that a relationship exists between intellectual capital components efficiencies and company performance. Furthermore, human capital influences productivity performance of the sample companies more than structural and physical capital.

Ferreira and Martinez (2011) study focuses on the influence intellectual capital has on employees' perceptions as related to both company investments and productivity levels. The 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. Results show 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.

Ghorbani, Dizgah and Chegini (2013) studied the relationship between Intellectual Capital and Knowledge Productivity and Moderating Role of Organizational Learning in the Branches of State Banks in Rasht, Iran. Correlation method was used in the study and field method was used for data collecting and data collecting tool was questionnaire. In the study, random sampling method was used, 84 completed questionnaires were received from banks. And finally, research hypotheses testing were examined by Pearson correlation test and multiple regressions. The results suggest a positive relationship between intellectual capital and knowledge productivity and positive role of organizational learning between them.

Omnifesi and Bontis (2012) conducted a study on managing intellectual capital in Nigerian telecommunications companies. The purpose of this study is to assess how telecommunications companies in Nigeria leverage intellectual capital as a strategic resource for creating competitive advantage. A previously published research instrument was administered and survey data were collected from 320 managers in 29 telecommunications companies. Hypotheses related to the relationship of human, structural and customer capital and its influence on business performance were tested. Results show that Nigerian telecommunications companies have mostly emphasized the use of customer capital, exemplified by market research and customer relationship management to boost their business performance.

Kazem and Abdallah (2008) studied the Impact of intellectual capital on innovation. The research aimed to highlights the effects of Intellectual Capital dimensions; Human Capital, Structural Capital and Relational Capital on the innovation in the public electric industrial company and to examine these relations. The study concluded that there is no significant effect between Human Capital and innovation at the company and no significant effect between Relational Capital and innovation. However, there is a significant effect between Structural Capital and innovation at the company.

Atteiah (2008) in his study on intellectual capital and knowledge management: Relation and effect" investigates the impact of Intellectual Capital on the Knowledge Management in the governmental banking sector at El-Dywania in Iraq. The studies aim to know if the governmental banks' systems have the Intellectual Capital that allows the organizations to implement the full utilization of its experiences. The study found that the Intellectual Capital is affecting Knowledge Management through the knowledge; both types tacit and explicit,

where the actual present of the tacit knowledge is proportional according to the management support.

Riahi-Belkaoui (2003) examined Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. He identified a positive correlation between 1C and company financial performance using Pearson moment correlation analysis to analyse the hypothesis.

Cabrita and Bontis (2008) conducted a study to investigate the Intellectual Capital performance of 53 Portuguese banks using Structural Equation Model (SEM) and Partial Least Square (PLS) and examined that human capital positively affect the structural capital and relational capital which ultimately strengthen the banks performance.

Yadollah, Farid, and Roya (2015) investigated the relationship between intellectual capital and employee performance. Four hypotheses were developed at the first step. Then a questionnaire with 40 questions was designed and distributed among the employees of the Abhar Educational Organization after Y which 60 questionnaires were collected successfully. Due to the normality of variables and independence of errors of the univariate regression, ANOVA and Tukey test were used for ranking the components of intellectual capital, and two sample t-test was used to investigate the employee performance in SPSS20 software. The results indicated that intellectual capital and its components have positive and significant relationship with employee performance. Moreover, the results obtained from the ranking the components of intellectual capital indicated that structural capital, human capital and relational capital are in the first, second and third places respectively.

Zerenler (2008) studied Intellectual capital and innovation performance: Empirical evidence in the Turkish automotive supplier. The study aimed to investigate the influence of Intellectual Capital of Turkish automotive supplier industry upon their innovation performance. The study examined three elements of Intellectual Capital; Human Capital, Structural Capital and Relational Capital and the researcher looked to detect the relationship between IntellectualCapital elements and innovation performance. The results indicated that the higher the growthrate of an industry, the stronger were the positive relationships between three types of Intellectual Capital and innovation performance.

Huang and Wu (2010) did a study on Intellectual capital and knowledge productivity: The Taiwan biotech industry. The study examined and tests the effects of Human Capital, Structural Capital and Relational Capital on knowledge productivity and the interactive effects between intellectual Capital and knowledge productivity. The study proves that Intellectual Capital is a phenomenon of interactions. All dimensions of Intellectual Capital positively and significantly influence knowledge productivity. The study proves there are interactive effects between the components of Intellectual Capital and provides evidence of the critical role that Intellectual Capital plays in explaining knowledge productivity.

Gob (2005) did a study on the impact of intellectual capital on Malaysian domestic and foreign bank using Value Added Intellectual Coefficient) to measure the impact of 1C i.e. (Human Capital Efficiency, Structural Capital Efficiency and Capital Employed Efficiency). He argued that Human Capital Efficiency (HCE) in terms of value creation is more influenced both in domestic and foreign banks. He further explained that investment employed in human capital is more returnable than structural and physical capital.

Joshi, Cahill and Sidhu (2010) conducted a study to measure the 1C performance through VAIC™ model. They argued that Human Capital Efficiency (HCE) has positive and significant

relation to increase the efficiency of Australian Owned banks rather than Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) which means more investment on human capital will increase the more efficiency of banks. Another study was conducted to measure the empirical relation between IC and financial performance of top 25 pharmaceutical firms using VAIC™ and concluded that (HCE) is more important than (SEC) and (CEE) to enhance the profitability and productivity of pharmaceutical industry.

A study was conducted by Mavridis (2004) to explore the IC performance by employing the VAIC™ model of Japanese banking sector for the year 2000-2001 and concluded that there is significant performance difference between Japanese and some other European banks. He further concluded that there is negative relation with Value Added (VA) and Human Capital (HC) which means misuse of human efficiency.

Ahmad and Mushraf (2011) studied the Relationship between Intellectual capital and Business Performance: An empirical study in Iraqi industry. The purpose of this study is to explore the relationships between Intellectual capital and business performance in Iraqi industry. The main objective of this study is to investigate whether intellectual capital has a direct effect on business performance. However, a review of the management literature reveals that the relationship between intellectual capital and business performance is still vague. In the study, the responses and information collected was collected from 191 respondents. A correlation Coefficient "between the four variables of intellectual capital namely (Human capital, Customers capital, Relational capital and Structural capital) and Business performance, The result of this study emphasize there is positive the relationship between intellectual capital (consists of customer capital, human capital, structural capital, relation capital) and businesses performance (consists of innovation, rate of new product development, customer satisfaction, customer retention and operating costs).

Yousef and Abdel (2005) did a study on the Relationship between intellectual capital and valuecreation. The research is a theoretical, critical analytical study for Intellectual Capital and its components, parts, measurement procedures, and the basis followed in its evaluation. It is also a criticizing study to analyze the models used in evaluating Intellectual Capital at business firms. The study provided that Intellectual Capital became occupying 90% from the investment in the business sector while it's controlled and governed by policies, strategies, and rules.

Gruian (2011) explore the influence of intellectual capital on Romania Company's financial performance theoretically and empirically. The study argued the influence of intellectual capital on financial performance at microeconomic level. Based on data collected from the financial statements of companies listed at Bucharest Stock Exchange, present study analyses the correlation between intellectual capital and its components, calculated by using the VAIC method, and financial performance, calculated by using Return on Equity. The sample used in this study is composed of 41 non-financial companies from Romania listed on the Bucharest Stock Exchange (BSE) quoted at 1st, 2nd and 3rd category. Companies belong to the following sectors (CAEN, national classification 2, adapted from the statistic classification used in the European community NACE Rev.2): Mining - 3 companies, Manufacturing - 27 companies, Utilities - 1 company, Construction - 3 companies, Commerce: 2 companies. Transport and it Storage - 3 Companies, Hotels and Restaurants - 2 companies. Several regression models are being used. The results support the proposed hypothesis, proving that there is a significant positive correlation between intellectual capital and financial performance. By extrapolating it can be said that the role of intellectual capital is important in achieving competitive advantages by companies from emerging economies where performance is usually strongly determined by the physical capital employed.

In a study conducted by James, Mark and Karma (2005), they found that the relationship between social capital and knowledge management, both helps organizations to achieve a sustained superior performance within the market. It also suggests that organizations with high levels of social capital have more knowledge-management capabilities than other organizations with, low levels of social capital.

A study conducted by Wang and Chang (2005) show that intellectual capital elements directly affect business performance. It is also found that there is a positive relationship between intellectual capital and business performance and there also exists a cause-effect relationship among four elements of intellectual capital. Human capital affects innovation capital and process capital. Innovation capital affects process capital, which in turn influences customer capital. Finally, customer capital contributes to performance.

Kamukama and Ahiauzu (2011) studied Competitive advantage: Mediator of intellectual capital and performance in Uganda. The paper aimed to examine the mediating effect of competitive advantage in the relationship between IC and financial performance in Uganda's microfinance institutions. The findings indicate that mediating effect of competitive advantage on the relationship between IC and firm performance satisfies the conditions of mediation. The study argues this is true because the uniqueness of intellectual assets that reside in an organization can put it in a better competitive position.

Bontis, Chong-Keow, and Richardson, (2000) conducted a study on Intellectual Capital and Business Performance in Malaysian Industries using 107 Students in Kuala Lumpur and Seremban. They discovered that there is a positive relationship between Performance and Structural Capital, there is also a positive relationship between Structural Capital and Human Capital, only in non-service firms. They concluded that Investment in Intellectual Capital, specifically Structural Capital, can result in greater competitive advantage. Investment in either Human Capital or Relational Capital will cause flow-on effects to performance through Structural Capital.

Bollen, Schnieders, and Vergauwen, (2005) examined the Linkage between Intellectual Capital and Intellectual Property to Company Performance in 41 German Pharmaceuticals companies. The study revealed that there is a positive relationship between all the three Intellectual Capital components and Intellectual Property, also there is a positive relationship between Performance and Intellectual Property. They conclude that Intellectual Capital and each component (Structural Capital, Human Capital and Relational Capital) have at least an indirect impact on performance, through Intellectual Property.

Tovstiga and Tulugurova (2007) studied Intellectual Capital Practices and Performance in 20 Russian SIEs. Using multiple regression analysis, Human Capital is the most important Intellectual Capital component for competitive advantage. External Environment is less important in determining competitiveness. They concluded that Intellectual Capital is the most important factor in determining competitive advantage in Russian SIEs and can overcome external "influences.

A study was conducted by Ngah and Ibrahim (2011) on the Influence of Intellectual Capital on Knowledge Sharing: Small and Medium Enterprises' Perspective. Convenience sampling was used for manufacturing and services industries of SMEs. Data was tested using Structural Equation Modeling (SEM) to investigate the impact of intellectual capital on knowledge sharing. Measurement model and structural model were developed. Findings show that relational capital has a positive impact on knowledge sharing while human capital and

structural capital has negative impact on knowledge sharing. All the intellectual capital dimensions contributed a significant impact on knowledge sharing. It is important for SMEs to invest and focus on knowledge sharing activity as it would create a platform for innovation, thus enhances the performance.

Yu, Ng, Wong, Chu, and Chan (2010) did an empirical study on the Impact of Intellectual Capital Performance on Business Performance. The study attempts to shed light on intellectual capital performance of Hong Kong companies and its possible associations with business performance. Audited Accounting data were collected from constituent companies of Hang Seng Index in Hong Kong Stock Exchange between 2005 to 2008. The Variables in the study were analysed using regression analysis to detect their association. No conclusive evidence was found to support the association between Value Added Intellectual coefficient and the four financial indicators. However the components of intellectual capital were found to predict the variance in the business performance.

Delgado (2011) carried out a research on the role of intellectual capital assets on the radicalness of innovation; Direct and indirect effects. The paper proposes a model on the radicalness of innovation from An Intellectual Capital-Based View, based on a sample of 251 Spanish technology-based manufacturing firms. Thus, we examine how human, organisational, technological, relational and social capitals influence incremental and radical innovations in different way. Using multiple regression analyses, results regarding direct effects show a greater positive influence of human capital on radical innovations than on incremental ones, being the "opposite effect in the case of organisational, technological, relational and social capitals. And, taking into accounts the moderating effect of human capital on the relationship between relational capital and radical innovations, results show the importance of human capital when a firm tries to achieve a radical innovation by means of external relationships.

The study of Mura, Lettieri, Spiller and Radaelli (2012) introduce and empirically tests a theoretical model that links intellectual capital dimensions to employees innovative work behaviour and specifically suggests knowledge sharing behaviour among employees as a key mediator. A survey was used to collect data from 135 employees in three healthcare organizations. The results of our Structural Equation Modeling (SEM) analysis indeed support the notion that intellectual capital is conducive to innovative behaviour by means of knowledge sharing among employees. These findings contribute to the understanding of how behavioural factors operate in organizations, highlighting the relevance of a micro foundation of continuous improvement, and also suggesting some preliminary guidelines that managers in healthcare organizational-can apply to promote employee innovative work behaviour.

Kemboi, Geoffrey, and Keter (2014), in their work on Intellectual Capital as an Antecedent to Employee Performance in Commercial Banks in Eldoret Town, Kenya. The purpose of the study was to establish intellectual capital as an antecedent to employee performance among commercial banks in Eldoret town. The study targeted a total of 315 staff from the commercial banks in Eldoret town, Kenya. The study used simple random sampling in which sample size calculation was utilized to calculate a sample size of 210 respondents. The research instrument used was a 5 point Likert scale questionnaire and in data collection, questionnaires were used as instruments. The study used descriptive and inferential analysis techniques to analyze data and a computer package Statistical Package for Social Sciences (SPSS) version 17.0 was used. The study presented the findings in form of tables, multiple regression analysis and correlation. The findings showed that human capital had significantly positive effect on employee performance ($\beta_1 = 0.317, p < 0.05$). The study also indicated that knowledge capital had significant effect on employee performance ($\beta_2 \sim 0.331, p < 0.05$). Similarly, relational intellectual capital ($\beta_3 = 0.111, p < 0.05$) and structural intellectual capital ($\beta_4 = 0.194, p < 0.05$)

had significantly positive effect on employee performance. Therefore, employees should be encouraged to share ideas and learn from each other since this will enhance performance. Management support should be enhanced and resources should be allocated to knowledge management. Also, firms should disseminate and distribute knowledge through the firm levels and have systems which allow easy access to information and procedures that support innovation which lead to improvement in employee performance.

Conclusion

The present paper found each of the three components of intellectual capital to be related to increased employee performance. Prior research findings show that there is a positive relationship between human capital and product innovation. The finding widely accepts that an organization's capability to innovate is closely tied to its human capital.

Moreover, the paper revealed that there is a positive relationship between structural capital and creative operation. This finding revealed the role the structures, systems, processes, values, cultures, patents and operations modus of the companies can help increase creative work among the employees of the organization. The paper thus revealed that production process timeliness, compliance and capacity utilization which is the basis of creative works is positively influenced by the organisation's settings, strategy, culture, technology and processes.

The paper further revealed that social capital has a positive significant influence on signal of competence. It was discovered that social capital also help to positively impact knowledge sharing to both internal and external constituencies of the organisation and depict the organisation's ability of competence signaling. Social Capital (strategic partnership, market intensity, customer relationship, suppliers' relationship and marketing capabilities) has a positive significant influence on the employee's ability to signal competence to external constituencies (during demand uncertainty response, delivery schedule, rush in other and value delivery).

From extant research findings, it is evident that the three components of intellectual capital significantly contribute to improvement and increment of the knowledge centered output of an employee in the business environment. The study also establishes that a well and properly coordinated intellectual capital will not only increase the performance of the employee in the organization of focus but it will also create a competitive edge for such organization.

It was also discovered that Knowledge tied up in relationships among employees, customers, suppliers, alliance partners, and the like tends to lead to process and product innovations, better problem solving and thereby increasing production and service delivery efficiencies as well as customer satisfaction. Codified and documented knowledge with the use of patent helps in institutionalization of knowledge and knowledge sharing for further analysis by knowledge workers to increase the overall performance of the organizations.

Recommendations

Following from the conclusion derived from this paper, the following recommendations are proffered:

- The management of organisations should not only seek to recruit people with technical knowhow but they must also understand that, experienced, skilled and knowledge workers need tools and equipment that match their capabilities.
- Managements of organizations should ensure that external stakeholders of the firms especially the

customers and contractors should be rightly feed with necessary information that will build trust in case of any production issues arising.

- The management of manufacturing firms should continually engage in rethinking and re-auditing of self, employee and the business environment for opportunities available.

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