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Intellectual Capital and Organizational Innovation: Evidence from Commercial Banks in Akwa Ibom State, Nigeria

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ABSTRACT

The study examined intellectual capital and organizational innovation in commercial banks Alkwa Ibom State, Nigeria. Intellectual capital was measured using human and social capital, the proxies of organizational innovation were product and process innovation. The researcher adopted explanatory design while primary data was collected through the administration of a structured questionnaire. The selected population of the study were 202 employees from eight chosen banks in Alkwa Ibom State. Copies of the questionnaire were administered to sample size of 134 employees comprising managers and supervisors of eight selected banks. Convenience sampling method was applied. Spearman Rank Correlation with the aid of Statistical Package for Social Science (SPSS) were used to test the hypotheses. The results of the analyses indicated that proxies of intellectual capital have positive significant relationship with the measures of organizational innovation. The researcher concluded that human capital contributed to product innovation in the banks. Thus, it was recommended that Banks should promote human capital by training and developing their employees to be more competent in their work necessary to drive product innovation.\

Keywords:

Intellectual capital, human capital, product innovation, organizational innovation

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Introduction

Organizations operate within a frugality where knowledge and set of activities such as employees, interpersonal relationships, and structures are essential in order to create value in organizations and contribute to economic prosperity (Ousama et al., 2012). The capacity



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building of an organization is developed through intellectual capital to support the attractiveness, training, and empowerment that generate positive mental image (Guthrie & Dumay, 2015). Knowledge and intellectual capital are the main factors for competitive advantage and increasing financial and non-financial organizational performance (Bontis, 2002; Brown, 2009). Organizations may adapt to the latest developments in work environment with the aid of qualified human resources that provide a culture of creativity and innovation. Moreover, Sangiorgi and Sibioni (2017) conceived intellectual capital as information, knowledge, and experience that exist in an organization which creates wealth and value. In affirmation, Ousama et al. (2012) explained intellectual capital as resources entrenched in the culture, systems, and processes in an organization. Indeed, intellectual capital entails visible assets, resources, of an organization which transformed into new products, services, and processes necessary in creating high job performance. Intellectual capital is also the human capital which comes from a combination of employee's competence, attitude, and creativity. Ramezan (2011) noted that the availability of intellectual capital or competent workforce in companies may create innovation, competitiveness, employee satisfaction, new product development, and enhance shareholder benefits. Intellectual capital could be achieved through human and social capital (Chandraji, 2014). Intellectual capital assists in developing the business environment and to achieve strategic objectives.

Organizations that embrace innovation tend to use their resources effectively to gain competitive advantage. Firms with innovation strategy perform highly by contributing to gross domestic product and producing products that correspond with consumers tastes (Schilling, 2005). Organizational innovation symbolizes new ideas or methods of changing the organization to be more responsive to changes in the internal and the external environment (Katz, 2014). Besides, Wang and Ahmed (2004) noted that innovation is the improvement in products, service, and introduction of new products which enter new markets. Organizational innovation is the advancement of production level that creates new technology, product, service, and administrative system. Banking has been transformed by technology innovation and the customers are more satisfied than before through electronic banking thereby generating more sales revenue for banks in Nigeria and other nations (Oira & Kibati, 2016). Bank customers are free to do their transactions and enjoy banking services with their smart phones even without having an account with the bank (Okoye et al., 2019). However, hiring human capital in commercial banks has received less attention because of tribal affiliations, religion, and political intervention. Human capital and technology innovation have become a center of global change and its adoption in the banking system could tremendously change the narrative to improve service delivery (Agbolade, 2011). This paper is structured to examine the relationship between intellectual capital and organizational innovation in commercial banks operating in Akwa Ibom State, Nigeria.

Two hypotheses were formulated for this study.

H₀₁: There is no significant relationship between human capital and product innovation in commercial banks Akwa Ibom State, Nigeria.

H₀₂: There is no significant relationship between social capital and process innovation in commercial banks Akwa Ibom State, Nigeria.

Literature Review

Intellectual Capital (IC)

Intellectual capital (IC) denotes a rational material which is utilized to create richness in terms of knowledge, intelligent possession, and experience (Chandraci, 2014). Similarly, Stewart (1997) claimed that intellectual capital is a source of competitive edge to management and the totality of what the workers know. Intellectual capital refers to as the resource that comes from the knowledge, experience, and transferable competencies of employees in the organization (Lee, 2010). From a strategic perspective, Edvinsson and Malone (2017) defined intellectual capital as intensive knowledge or creative relationships that have the potential to generate value and development. Moreover, intellectual capital entails the usefulness of book value in work behaviour of employee needed in creating company value and profitability. It also goes further than the narrow concept of human capital to include organizational systems, procedures, and the reputation of the organization among its clients. Intellectual capital helps financial institutions to acquire knowledge and measure the core competence which could be converted into profits (Sullivan, 2017). Indeed, the accommodation of intellectual capital provides innovation in implementing new ideas and products through information technology like database, software, and computers. Chandraci (2014) recognized two main indicators of intellectual capital as human capital and social capital respectively.

Human Capital

Human capital signifies the core asset of an organization and the stored value of knowledge and skills of members of the organization (Yang & Lin, 2009). In complementing this assumption, Kaya et al. (2010) noted that human capital is the strength of intellectual capital as well as the source of innovation and improvement. Ordinarily, the skills and knowledge of human capital are not the property of an organization but it may be hired by other companies (Kaya et al., 2010). For example, a textbook written by lecturer A at university of Abuja is not the property of the university. The book is a personal or intellectual property of the lecturer. He has the legal power to determine the price of his book as contained in Sale of Goods Act. Furthermore, human capital refers to individuals that are multiplied with knowledge and provide solutions to problems. From all indications, not all employees are human capital. The human capital is organizational source of survival and reputation. Effective institutions search for workers who are human capital and do away with persons with low skills or mentality. Hiring workers who have low knowledge or skills create room for gossip, nuisance, poor performance, low production, and petition. Employees with deficiencies do not have the potentials to compete with others, they engaged in deviant behaviour which affects the product innovation. The skills and technical know-how of the

employees distinguishes a firm from others. Erickson and Rothberg(2009) proclaimed that human capital contains features like job personality traits, experience, job-related knowledge, qualifications or job-related licenses, and skills.

Organizations invest in human capital to earn sustainability, growth, and benefit from deep-seated innovations. Chahal and Bakshi (2016) demonstrated that human capital creates routes for employees to undergo continuous training, improve their skills, and share knowledge to acquire new ideas. Although, financial institutions that appreciate the need to cultivate human capital may prosper. Irrespective of these roles, the danger in human capital is that workers who are human capital engage in cherry picking where they leave their current employment and join a new firm. It is important for firms to motivate workers to innovate. Thus, Becker (1993) insisted that brilliant employees attract profit to their firm through their competencies. In fact, productivity, resilience, innovation, survival, and accomplishment are proceeds of human capital in all organizations (Meca & Martinez, 2007).

Social Capital

Social capital entails human relationship, social network, trust, and norms of reciprocity which inspire individual and corporate resources (Crossley, 2008). Indeed, Welbourne (2008) pronounced social capital as a process of creating cooperation or bonds with other organizations to achieve favourable outcomes. Social capital connotes social networks that have inclusive relations to enhance community cohesion (Szreter, 2002). In spite of the complexities in having a common idea on this variable, social capital signifies solidarity, friendship, and goodwill that exist among people which drive helpfulness behaviours. The central proposition regarding social capital is the interpersonal relationship that borders on who you know and not what you know. Ordinarily, working together for collective progress appears to be clumsy for some persons. Most employees want to share, help one another, and receive loyalty or reward. This opportunity may not be possible if there is no form of social capital arising from collaboration and reciprocity. Mayo (2016) insisted that social capital provides initiatives that promote information sharing, and coordinated actions. Social capital helps workers to borrow money from their friends. Social capital is very necessary for human existence and institutions survival. However, Kasha and Afsari (2014) noted that social capital has some negative inclinations like fostering behaviours affecting economic performance and creating divisions among workforce. Association of persons could also lead to damaging of health.

Kogut and Zander (1992) contended that communication through social capital, enhances the acquisition of new technological knowledge, which generate service, process, and customer innovation. Moreover, Peters and Brush (1996) asserted that when companies are unable to collect information about the market, social capital empowers them to receive information from external contacts namely competitors, suppliers, distributors, and customers.

Organizational Innovation

Organizational innovation refers to new ideas or techniques that lead to change, adaptation, and make the organization to be more responsive to development within the internal and external environment (Katz, 2014). In addition, Sullivan (2017) stipulated that organizational innovation is the quality of the networks and systems available within the organization that permit interaction between employees, through internal means of communication. For example, computers, databases, software, and e-mail. Innovation is necessary for positive change of the organization at the managerial or productive level. Christensen (2017) stated that organizational innovation is a set of activities that the organization accepts such as: enticing, sustaining, and developing the creative persons to achieve both goals and the competitive advantage of the organization. In view of the conversations regarding organizational innovation, it means introduction of new practices that sustain prosperity, drives economic growth, and improving productivity. Kramer et al. (2011) contended that organizational innovation provides better quality products and services at lower prices. Similarly, Stewart (2015) disclosed that organizational innovation contributes in building intellectual capital and achieving organizational creativity, by giving people greater authority in making decisions and solve problems. Innovation strategy enables workers to exchange experiences and expertise in the production and transfer of knowledge, through searching for the modern technology and applications necessary to achieve efficiency. Indeed, the use of computers or software in banks help to achieve time management and promote organizational performance.

When decisionmakers are innovative it assists the organizations to have income generating policies and provide effective solutions that may arise from the absurdity between the organization's actual and desired performance (Christensen, 2017). This discrepancy may influence the management of the organization to implement a new approach by empowering the employees to delegate authorities in order to have harmony at the workplace (Stewart, 2015). Innovation does not only embrace various kinds of activities but necessitates continuous improvement during the application process. This includes learning activities, which are indispensable to the effective working within the technology system. Ordinarily, Tidd et al. (2005) predicted that corporations that are innovative in their products or services are meaningfully ahead of their competitors in terms of growth, resilience, profitability, and market share. However, Drucker (1985) assumed that where companies are reluctant to embrace innovation, they may succeed in preparing for employee dullness, untimely closure, and death of the organization. Numerous literatures have listed the measures of organizational innovation to include: product innovation, market innovation, administrative innovation, process innovation, and technological innovation (Damanpour, 1991; Wang & Ahmed 2004; Ashraf et al., 2014). Meanwhile, the researcher concentrated on two indicators of innovation which Wang and Ahmed (2004) illustrated as product innovation and process innovation respectively.

Product Innovation

Damanpour and Gopalakrishnan (2001) stated that product innovation denotes a change in the end product or service provided by the organization. In getting the tenets of product innovation, Angelmar (2014) insisted that product innovation refers to a new product which technological characteristics vary from the previous products or an existing product that the performance is upgraded. Product innovation is the expansion and unveiling of a new product or service that directly affects the market where they are exchanged (Jimenez & Vall, 2011). Consequently, product innovation signifies improvements or discovering additional features on existing products in a market. Product innovation arises when organizations take consumers feedback to develop improved versions of existing products that satisfy the consumers. Companies and banks could flourish in product innovation by fostering a [work environment](#) that encourages learning, sharing of opinions, creativity, and a healthy relationship with leaders (Ashraf et al., 2014). Product innovation has a market attention and principally customer motivation. Product innovation requires organizations to integrate customer needs, design, and manufacture the product, hence successful products command significant price rewards. Trott (2008) emphasized that product innovation responds to unstable environment and create new opportunities for developing effectiveness. It also increases market share and hastens competitive advantage, profitability and performance. Angelmar (2014) declared that product innovation reduces the time spent on a project, like new computer software that helps to facilitate work and achieve efficiency. Product innovation aids to reduce risks through automated teller machine (ATM card), credit card, and online payment which have safety features like the pin and chip technology used to secure customers' accounts. However, technical problems and design faults rising from quick innovation could diminish profitability. Song and Parry (2010) contended that product innovation creates market challenges in the implementation and distribution of new products.

Process Innovation

Process innovation symbolizes the methods, techniques, used by organizations to produce products or services (Damanpour & Gopalakrishnan, 2001). Process innovation occurs when there is execution of improved production or delivery method such as changes in software, techniques, and equipment (Tan & Nasurdin, 2010; Tidd et al., 2005). To buttress this assumption, Bi et al. (2006) noted that process innovation is the new elements namely task specifications, information flow, and input material that are introduced into the organizations operations to create quality product or service. Indeed, process innovation refers to implementation of plans necessary in making effective decisions on cost of production. This includes logistics, employee assessment, project management, and customer services. Process innovation needs companies to use strategies and technologies to improve the efficiency of product development and business. The process of innovation happens when a company tries to provide solution to an organizational problem by using a different approach from the standard one which makes the process more beneficial to the employees (Jimenez & Vall, 2011). For example, a company with many workers, various stores of commodities and services, may want to engage in process innovation to improve the delivery

of payroll checks by using automated software. Another type of process innovation that could enhance a business is through the simple method of store ordering to reorganize things inside the warehouse. Sisaye and Birnberg (2010) claimed that process innovation helps to lessen the unit costs of production or delivery, increases quality produce and attract customer. Rogers (1983) pronounced that innovation process requires continuous communication and information distribution which creates closeness among workers in the organization.

Theoretical Framework

Penrose (2009) was the first to develop resource-based theory, which means the effective management of organizations' resources, change strategy, and productive opportunities. Resource-based theory (RBT) states that a firm must be coordinated to use vital resources to achieve goals and sustain competitive advantage. This theory contains important framework that predicts the fundamentals of a company's performance and survival. The resources in RBT, include information, skills, assets, business processes, the firm's attributes, and knowledge controlled by either a company or bank to boost efficiency and effectiveness (Barney, 1991). Resource-based theory concentrated on the inside of the company resources and capabilities to improve the performance of the organization. Similarly, organization resources could be internal and external resources. Internal resources encompass brand management, low-cost processes, logistics, research and development (R&D) capabilities (Kozlenkova et al., 2014). Besides, external resources are technology change, market forces, the behaviour of suppliers, and customer demand (Lewis et al., 2010). The relationship between intellectual capital and organizational innovation falls within the domain of the resource-based theory. Moreover, this theory advocates that information, processes, assets, skills, and knowledge are key to firms' innovation. An organization could be competitive when the resources meet certain conditions namely value, uniqueness, inimitability, and non-substitutability (Barney 1991). Apparently, if banks utilize the resources it helps to grab opportunities and neutralizes threats (Ahmed & Othman, 2017). Resource base theory contributes to development of software and construction of petrol engines that are superior organizational innovation capabilities. Henry (2008) emphasized that the intention of banks to acquire customer knowledge could lead to synergy and provision of appropriate products and services.

Methodology

Research Design: Research design refers to a systematic framework for collecting and analyzing data. The researcher employed explanatory design which is essential in evaluating observations in order to create a relationship between the variables.

Population of the Study: Population is a set of homogeneous elements that share similar characteristics selected for a study. The target population of this study centered on managers and supervisors in commercial banks, Akwa Ibom State that were in operation for about 12 years. Participants were 202 employees chosen from managers and supervisors of various banks in the state. The data was collected from the human resource data in each

bank. Convenience sampling technique was hired to select the 8 banks. The eight banks were preferred for their nearness and free entry or exist. The sample size was 134 determined at 5% level of significance using the Taro Yamane's formula. The table below shows the number of selected banks.

Table 1

Population Distribution

S/N	Names of Banks	Population
1	Union Bank	15
2	First Bank	28
3	Eco Bank	19
4	Fidelity Bank	38
5	FCMB	32
6	GTBank	30
7	UBA	26
8	Access Bank	14

Total
202

Source: Human Resource Data, 2022.

Methods of Data Collection: The researcher collected data from both primary and secondary sources of data. Questionnaire was the main research instrument for the study including interviews. Secondary source consists of human resource data and journals. The questionnaire was composed on intellectual capital and organizational innovation. Intellectual capital is the independent variable while organizational innovation represents dependent variable. The questionnaire was necessary to collect data useful in answering research questions and hypotheses. Indeed, the questionnaire was structured into three cardinal sections explicitly section A, B, and C. Section A embodies demographic responses, whereas sections B and C contain statements regarding independent and dependent variables. These questions were organized in an ordinal scale using the 5-point Likert's scale of 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Methods of Data Analysis: The statistical tool applied in this study was Spearman's rank correlation coefficient, specifically to determine the level of relationship between independent variable (intellectual capital) and dependent variable (organizational innovation).

Results and Discussion

Analysis of Research Questions

Research question one: What is the relationship between human capital and product innovation in commercial banks Akwa Ibom State, Nigeria?

Table 2

Mean Score of Respondents on Human Capital and Product Innovation

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
The bank employees have continuous training that creates innovative products and services.	134	1	5	4.57	.826
Workers in this bank are educated.	134	1	5	4.62	.680
In this bank employees' skills are raised.	134	1	5	4.32	1.016
This organization has brilliant employees who are creative to attract growth.	134	1	5	4.51	.829
The bank workers are motivated to develop and exchange new ideas.	134	1	5	4.63	.678
Valid N (listwise)	134				

The results in Table 2 proved that the items in human capital have significant relationship with product innovation. Participants confirmed that their banks have brilliant employees who are creative to attract growth. These results contained a grand mean score of 4.5 derived from the five statements.

Research question two: What is the relationship between social capital and process innovation in commercial banks Akwa Ibom State, Nigeria?

Table 3

Mean Score of Respondents on Social Capital and Process Innovation

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
The bank has improved the data about customers to promote business processes.	134	1	5	4.57	.760
There is cooperation between the bank and employees.	134	1	5	4.48	.773
Workers in the organization give attention to customers feedback.	134	1	5	4.46	.881
In this bank, employees enhance their capabilities through interactions.	134	1	5	4.63	.678
Employees offer solutions to their problems by team work and support.	134	1	5	4.57	.854
Valid N (listwise)	134				

Table 3 showed the descriptive output of social capital. This demonstrated that employees practiced social capital which enabled the management to give attention to customers feedback. The results indicated a grand mean score of 4.5 which affirmed employees accepted that their banks have improved the data about customers to promote business processes.

Test of Hypotheses

H₀₁: There is no significant relationship between human capital and product innovation in commercial banks Akwa Ibom State, Nigeria.

H_{A1}: There is significant relationship between human capital and product innovation in commercial banks Akwa Ibom State, Nigeria.

Table 4

Spearman Rank Correlation of Human Capital and Product Innovation

Correlations

		HUMAN CAPITAL	PRODUCT INNOVATION
Spearman's rho	Correlation Coefficient	1.000	.940**
	Sig. (2-tailed)	.	.000
	N	134	134
	PRODUCT	Correlation Coefficient	.940**
			1.000

	INNOVATION	Sig. (2-tailed)	.000	.
		N	134	134

**. Correlation is significant at the 0.01 level (2-tailed).

The evidence from the results displayed that human capital has strong positive significant relationship with product innovation. This proved that $r = .940$ and $p = .000$ which showed that $p < .005$. Therefore, the null hypothesis is rejected and alternative hypothesis accepted.

H₀₁: There is no significant relationship between social capital and process innovation in commercial banks Akwa Ibom State, Nigeria.

H_{A1}: There is significant relationship between social capital and process innovation in commercial banks Akwa Ibom State, Nigeria.

Table 5
Spearman Rank Correlation of Social Capital and Process Innovation
Correlations

		SOCIAL CAPITAL	PROCESS INNOVATION
Spearman's rho	Correlation Coefficient	1.000	.973**
	SOCIAL CAPITAL		
	Sig. (2-tailed)	.	.000
	N	134	134
	Correlation Coefficient	.973**	1.000
	PROCESS INNOVATION		
	Sig. (2-tailed)	.000	.
	N	134	134

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 5 indicated a positive significant relationship between social capital and process innovation. This also implies that there was statistically significant relationship between intellectual capital and organizational innovation where the social capital predicted process innovation. Apparently, $r = .973$ and $p = .000$ which disclosed that $p < .005$. The null hypothesis is rejected.

Discussion of Findings

The findings in hypothesis one displays that there is significant relationship between human capital and product innovation in commercial banks Akwa Ibom State, Nigeria. This advocates that the bank employees have continuous training that creates innovative products and services. This finding is in harmony with Chahal and Bakshi (2016) who demonstrated that human capital creates routes for employees to undergo continuous training, improve their skills, and share knowledge to acquire new ideas. In hypothesis two, the findings reveal positive significant relationship between social capital and process innovation as

proxies of both intellectual capital and organizational innovation. The participants disclose that the banks have improved the data about customers to promote business processes. The finding is consistent with Kogut and Zander (1992) who contended that communication through social capital, enhances the acquisition of new technological knowledge, which generate service, process, and customer innovation. The results also indicate that there is cooperation between the bank and employees. This finding is in agreement with Welbourne (2008) that pronounced social capital as a process of creating cooperation or bonds with other organizations to achieve favourable outcomes. The findings also provide the relevance of intellectual capital within banks in Akwa Ibom State, Nigeria. This output is in accord with the claims of Edvinsson and Malone (2017), where they stipulate that the banking sector in Nigeria has recognized the necessities of intellectual capital by taking effective actions to enhance its intellectual capital base. For example, banks in Nigeria employ mostly university graduates, who possess a minimum of second-class honours degree (upper division) as their minimum requirement.

Conclusions

Developing the organisations intellectual capital could improve the innovation of banks. If banks invest in training and development of their workers, they may harvest innovation benefits. The study upholds that intellectual capital contributes positively towards the organisational innovation of commercial banks in Akwa Ibom State, Nigeria. Hence, human and social capital have significant relationship with the measures of organisational innovation such as product and process innovation.

The recommendations:

- i. Banks should promote human capital by training and developing their employees to be more competent in their work necessary to drive product innovation.
- ii. Banks should invest and maintain social capital through having good relationships with their suppliers, customers, distributors, and strategic business partners, geared towards learning and acquiring knowledge to enhance process innovation.
- iii. Organizations should see hiring and retaining of human capital as a priority to achieve organizational innovation. Incompetent employee cannot give what he does not have.

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