
HUMAN CAPITAL DEVELOPMENT AND ORGANIZATIONAL INNOVATION IN NIGERIAN BANKS

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ABSTRACT: *The study investigated the relationship between human capital development and organizational innovation in Nigerian banks. The objectives of the study was to ascertain the extent to which human capital development impacts on organizational innovation measures such as product, process and market innovation. A cross-sectional survey was conducted on 217 top and middle level management staff of 17 identified banks in Rivers, Bayelsa and Delta state, using purposive sampling. Descriptive data were generated from the questionnaire and the Spearman's Rank Order Correlation Coefficient was deployed to test the hypotheses, aided by the Statistical Package for Social Sciences version 22. Results indicated a positive and significant relationship between human capital development and organizational innovation. Thus, findings revealed that higher levels of human capital development are associated with increase in organizational innovation. Based on the findings, it was concluded that Nigerian banks will harvest innovation benefits if they develop their human capital. This study therefore recommends that organizations should invest in human capital development programs.*

KEYWORDS: human capital development, organizational innovation, product innovation, process innovation and market innovation.

INTRODUCTION

Organisations take innovation very seriously (Sanderson & Uzumeri, 1997) because it stimulates competitive advantage. Moreover, firms that continually innovate often perform highly (Golipour, Jandaghi, Mirzaei & Arbatan, 2011). Organizational innovation include the creation and improvement of products, as well as the capability of organization to rapidly embrace newer technologies and product improvement strategies (Chaney and Devinney, 1992; Banbury and Mitchell, 1995). In the competitive markets, agile organisations innovate in terms products to match the consumers' tastes. Through innovation, organisations also introduce latest technologies for better processes and methods (Chaney & Devinney, 1992; Banbury & Mitchell, 1995). Moreover, Walker and Avellaneda (2009) submit that multiple benefits are harvested by stakeholders and organisations when new products, services, methods and technologies are adopted. Specifically, Golipour et al (2011) assert that organizational innovation promotes adaptation among firms and adds value to the firm in changing business contexts.

Researchers have established some predictors of organisational innovation. Some of these studies include: organisational trust and organisational innovation (Golipour, et al, 2011), knowledge sharing

and innovation (Lin, 2007), employee autonomy and organisational innovation (Shalley& Gilson, 2004). Curiously, despite the numerous studies on the drivers of innovation, the association between human capital development and innovation has been under researched. Human capital development is the combination of knowledge, skills, aptitude, capacities and abilities that empowers firms to accomplish results using minimal energy and time (Schultz, 1961). Scholars have consistently noted (e.g. Agarwala, 2003; Lumpkin & Dess, 2005) that human capital development is a catalyst for innovation, employee satisfaction, competitiveness and superior performance (Barney, 1995). Few studies on human capital and organisational innovation are predominantly empirical (Tamara & Bojan, 2017; Hosnavi & Ramezan, 2011; Mohammed, Sauda & Salmia, 2017). Most studies in developing countries such as Nigeria manifest this gap. Thus, this study strives to bridge this gap by investigating the relationship between human capital development and organizational innovation, using a mixed analytical approach.

Statement of the Problem

According to Ubeku, (1987) organisations need to continually innovate since the business context keeps changing. The banking sector grapples with the innovation challenge since the skills and competencies of workers must be continually updated to match the requirements of the changing environment. Thus, old employees are retrained and new ones with cognate skills are recruited very often. The innovation challenge has become a preoccupation in banks, thereby making them to improve the skills and knowledge of their workforce (Olusegun & Adengba, 2013). Banks that fail to innovate soon fizzle out of competition. According to Ali, Ullah & Khan (2012), remark that developed nations are more innovative than developing countries like Nigeria. Aubert (2004) opine that the dearth of innovative employees is traceable to the ratings of universities, whereby the developing countries have only 3% of the world's top 100 universities. This means that most graduates of developing nations who get employed might need further training to enhance their innovative capabilities.

Furthermore, Dauda and Akiingbade (2011) submit that Nigerian banks merely view innovation as an investment in advanced technology imported from developed countries, but not the result of the employee creativity. Also, Dauda (1998) aver that Nigerian banks do not muster the benefits of strategic innovations because they lack the requisite human capital practices. Although banks may not have much barriers to the supply of financial products on a planetary scale because of the closely knitted global financial architecture (Nigel, Penalver & Nicholas, 2008), the need to innovate is still paramount to banks. Thus, unless banks continuously innovate, they will experience stunted growth and low competitiveness (Tidd, 1997).

Conceptual Framework

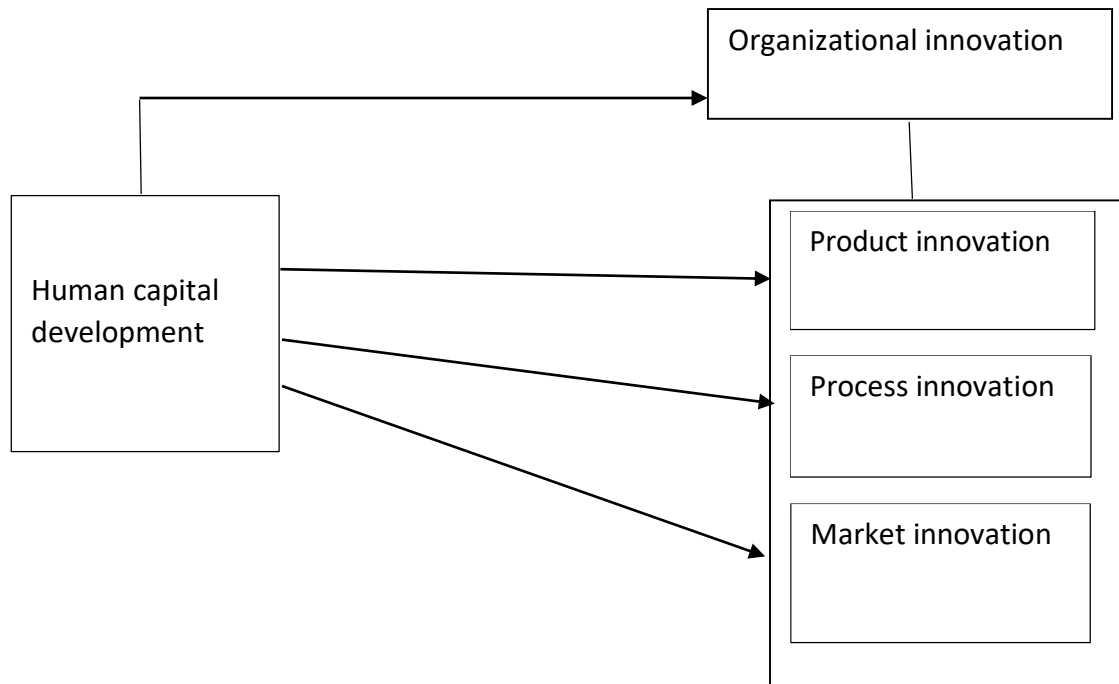


Figure 1: conceptual framework

Source: Conceptualized by the researcher, 2018

Objectives of the study

The objectives of this study are as follows:

1. Identify the association between human capital development and product innovation.
2. Evaluate the relationship between human capital development and process innovation
3. Ascertain the relationship between human capital development and market innovation.

Research questions

1. How does human capital development relate with product innovation?
2. What is the relationship between human capital development and process innovation?
3. What is the relationship between human capital development and market innovation?

LITERATURE REVIEW

Concept of Human Capital Development

In same breath, Schultz (1961) submits that human capital development is the combination of knowledge, skills, aptitude, capacities and abilities that empowers firms to accomplish results using minimal energy and time, while Thomas et al (2013) aver that it is the development of employee potentials and skills for better, their performance. Bontis et al (1999) see it as the amalgamation of

humancapabilities such as intelligence, skills and expertise over time which that distinguishes one firm from others. So, firms which see the need to cultivate human capital will thrive but its demerit is that it leaves the establishment whenever it feels like as opposed to structural capital. Snell and Dean (1992) disclose that firms should strive to coach their workers to instill zeal in them as Lucas (1990) mentions that businesses that do all they can to make sure that their staff are learned are usually at the top of affairs. Therefore, Becker (1993) upholds that knowledgeable workers attract profit to their firm through their competencies.

Concept of Organizational Innovation

According to Wang and Ahmed (2004), innovation is the improvement in products and service, introduction of new products and venturing into new markets. Similarly, Hamel and Mol (2008) opine that organizational innovation is the creation of new product, service, process, technology, structure or administrative system. It is also the deployment of new ideas and methods (Weerawardena, 2003; Villar, 2012). Furthermore, Dougherty and Hardy (1996) view organizational innovation as the strategy utilized by firms to adjust to changes in the business environment. Here it is assumed that it is a platform for adaptation during change. Scholars (e.g. Liu, Chen, and Tsai, 2005) view innovation as highly beneficial to firms. For instance, Coombs and Bierly (2006) submit that it allows for business continuity while Liu, Chen, and Tsai (2005) articulate that it enhances profitability. Previous studies have outlined various measures of organizational innovation namely; product innovation, process innovation, market innovation, technological innovation and administrative innovation (Wang & Ahmed 2004; Ashraf, Kadir, Pihie, & Rashid, 2014). Researchers (Cottam, Ensor & Band, 2001; Kleinknecht, 2003) point that strategy influences innovation. Organisations that value innovation spend a large chunk of resources on innovative activities to achieve their objectives. Moreover, Tidd, Bessant and Pavitt (2005) points out that companies that are innovative in their products / services are significantly ahead of their competitors in terms of market share, profitability, companies' growth, and net income.

Product Innovation

Angelmar (2014) aver that product innovation refers to a product which is new, at least in some respects, for the market into which it is introduced. OECD Oslo Manual (2005) is an introduction to the market a product whose technological characteristics or intended uses differ significantly from those of previously produced products or an existing product whose performance has been significantly enhanced or upgraded. Akova et al., (1998) uphold that for product innovation to be successful, high contact between the firm, its customers and suppliers must be established. According to Meeus and Edquist (2006), product innovation connotes introducing new or better products or types of products into the market. Such products could be new good, be they tangible or intangible. Similarly, Valencia, Valle, and Jimenez (2010) submit that firms innovate in products when they produce and develop new products that create success. Damanpour & Schneider, (2006) define it as "the continuous act of introducing new products or service". Deutinger and Harms (2008) thus state that product innovation can respond to unstable environment and create new opportunities for developing effectiveness.

Process Innovation

Baer and Frese (2003) describe process innovation as “a deliberate and new organizational attempts to change production and service processes”. It is “the implementation of new or significantly improved methods for production or delivery, to include significant changes in techniques, equipment, and/or software” (OECD, 2005). Process innovations tend to decrease unit costs of production or delivery, increase quality, or produce or deliver new or significantly improved products (OECD Oslo Manual, 2005). Process innovation is a new way of producing goods and services. Some innovation processes change the entire order of things, making obsolete the old ways and perhaps sending entire businesses into the refuse dump of history.

The innovation process comprises problem solving, internal diffusion and organizational adaptation. These activities may occur simultaneously for the innovation process to be profitable. According to Rogers (1983) innovation process requires continuous communication and information sharing which creates bonding among organizational members.

Market Innovation

Robert (2011) define market innovation “as the improvement of marketing methods which embraces substantial changes in product design, packaging, placement, promotion, or pricing. Similarly, Daston and Mangles (1997) affirm that market innovation leads to enterprise growth, pointing out that positive perception of customers about innovation speeds up market penetration. Hurley and Hult (1998) highlight that innovation in the firm’s culture is linked to better capacity for adaptation. Hult, *et al.*, (2004) established a positive relationship between market orientation and innovation affirming that market orientation will possibly heighten innovation, reason being that, new practices are been implemented due to market demands. Van Raaij and Stoelhorst (2008) declare that market-oriented establishments understand market situations better than their contenders, making them more skillful in their new activities, thereby attaining higher performance.

Human capital development and organizational innovation

Annelies, Joris, and Patrick (2014) studied the influence of human capital endowments (formal training and employee slack time) on innovation outcomes output of in East African firms. For a sample of 2,078, logistic regression results indicated that human capital influences innovation. Also, Abowd *et al.*, (2002) found that human capital ensures corporate efficiency and it combines with the right technologies, business models and firm’s practices.

In same vein, Scholars (Vinding 2006; Schneider *et al.*, 2010) did a cross country analysis in Finland, Denmark, and Germany to test the influence of employee education on innovation and deduced a relationship between the variables. Schneider *et al.*, (2010) argue that well trained employees are responsible for innovative output with firms. In addition, Mahemba and Bruijn (2003) also found that training is very significant for the innovative performance of firms in developing countries. However, Robson *et al.* (2009) found no link between training and innovation in Ghanaian firms.

Relationship between Human Capital Development and Product Innovation.

Some scholars (e.g. Grimpe & Sofka, 2009; Liu & Buck, 2007) have mentioned that higher levels of human capital catalyze innovation in advanced countries. Also, Vinding (2006) studied Finish and

Danish firms and concluded that education and training of employees in Finish and Danish firms improve product innovation. Similarly, Schneider et al., (2010) found a sympathetic link between product innovation and the level of training given to employees in German firms. Earlier, Schneider et al., (2010) mentioned that employees who are better trained will be more innovative than others. This position is held by Mahemba and Bruijn (2003) who say that training is necessary for vital for incremental innovation. Chaminade and Vang (2006) posit that low level of investment in technology in developing countries is traceable to poor development of human capital. Furthermore, Van Uden, Knobens, and Vermeulen, (2014) submit that managers should not restrict human capital development to formal schooling alone, but should also embrace provision of slack time and staff training.

Relationship between Human Capital Development and Process Innovation

Audretsch and Feldman (1996) report that human capital development is an antecedent of process innovation. Barro (2001) say that human capital development aids process innovation through the use of superior technologies from developed climes which embrace learning via schools. Hayton, (2005) posits that cognitive resources as variants of human capital, coupled with experience and values, determine how leaders understand and interpret changing contexts in order to correct errors.

Relationship between Human Capital Development and Market Innovation

The acquired knowledge and memory of a firms aid their innovative capabilities, which amounts to market innovation (Roper et al., 2008). Also, Lenihan, and McGuirk (2014) suggested that the skill and knowledge are acquired through human capital development which spark off market innovation. Moreover, Arvanitis and Stucki (2012) also corroborated that formal education is a vital ingredient of human capital development which helps member to recognize opportunities and innovate in the marketplace. Thus the presence of human capital development at both the managerial and individual employee levels sparks innovation processes, as well as the possibility of improving the firm's innovation capabilities. Yet realistic evidence (Caloghirou et al., 2004; Goedhuys, 2007) is not yet conclusive about human capital development and innovation. It is thus on this view that we hypothesize that:

- HO₁:** There is no significant relationship between human capital development and product innovation.
- HO₂:** There is no significant relationship between human capital development and process innovation.
- HO₃:** There is no significant relationship between human capital development and market innovation.

METHODOLOGY

This study adopted a quasi-experimental design because the study elements were not controlled by the researcher. Also, the cross sectional survey method was adopted because it allows data collection through the use of standardized questionnaire at a single point in time (Baridam, 2001). This study has its target population of top and middle level managers in 17 selected banks in Rivers, Bayelsa and Delta States that have been in operation for over 15 years. Respondents are 217 managers

(regional and branch) and middle level staff from the head offices of the banks in these states. The data was collected from the human resource/administrative units in each bank, after several personal visitations and phone calls. Sampling was done purposively as the banks were not chosen based on probabilities. However, respondents to the questionnaire were randomly selected. Sample size was computed by utilizing the Taro Yamen's formula (Baridam, 2001) at 95% confidence interval. The Taro Yamen's formula is:

$$n = \frac{N}{1+N(e)^2}$$

Where

n = sample size

e = level of significance

N = population size

$$n = \frac{475}{1+475(0.05)^2}$$

$$n = \frac{475}{1+475(0.0025)}$$

$$n = \frac{475}{1+1.1875}$$

$$n = \frac{475}{2.1875}$$

$$n = 217$$

Based on the calculation above the sample size for this study is 217 top and middle level management staff of the target banks.

Nature and Sources of Data

Primary Data

Data were collected from primary sources through questionnaire. The questions were structured in an ordinal scale using the 4-point Likert's-type scale of 1 (strongly disagree) to 4 (strongly agree). The researcher also interviewed at least one participant from each bank to harvest the benefits of methodological triangulation.

Operational Measures of Variables

The variables of this study were decomposed and measured based on previously validated scales (Chahal&Bakshi, 2016; Kalay& Lynn, 2016; Wang & Ahmed 2016).

Independent Variable

The independent variable is human capital development. Human capital development was measured by six items e.g, "*in my organization, employees undergo continuous training*", "*In my organization*

employees are highly educated”, “In my organization, employees’ skills are upgrade”(Chahal and Bakshi,2016).

Dependent Variable

The dependent variable in this study is organizational innovation, decomposed into product innovation, process innovation, and market innovation (Wang and Ahmed, 2004). Product innovation was measured using 3 items, *eg, “My organization has introduced more innovative products and services during the past five years”*. Process innovation was measured using 3 items *eg, “My organization constantly improves business processes”*. Market innovation was measured using 3 indicators *eg, “My organization most recent marketing program is new in the market as compared with that of competitors”*. All indicators for the measures of organizational innovation were adapted from(Wang & Ahmed 2016).

Test of Validity

This study adopts the content validity approach. Each item of was extracted from extant works to reflect all the domains of the variables. Moreover, the instrument was given to experts in the field and managers of the organisations under study for possible correction and modification. This process ensured face validity, which is an aspect of content validity.

Reliability:

In this study, the Cronbach’s alpha criterion was used as reliability index. The study abided by Nunally’s (1978) recommendation that a coefficient of 0.7 is reliable, while any value less is unreliable. Thus, reliability values below 0.7 were rejected. The Cronbach’s alpha test was conduct on the statistical package for social sciences (SPSS) version 22 platform.

Reliability table

Table 1.1

Variables		Alpha coefficient	No. of items
		0.866	6
Organizational innovation	Product innovation	0.877	3
	Process innovation	0.914	3
	Market innovation	0.935	3

Data Analysis Technique

This study adopts descriptive statistics such as frequencies, mean scores, and standard deviation for primary data analysis. The hypotheses were tested using Spearman’s Rank Order Correlation Coefficient.

RESULTS AND DISCUSSION

Survey

The field survey was done to enable data flow from the respondents to the researcher. Survey involves the collection of data from the field, cleaning, coding, verification, analysis and presentation of results for decision making (Schoenbach, 2000). Fieldwork lasted for about 6 months. The researcher contacted the managers of the banks in Rivers, Bayelsa and Delta states, who later convinced other target respondents to participate in the study. Two Hundred and Seventeen (217) copies of the questionnaire were distributed to the respondents.

Table 2.1: Result for questionnaire administration

Banks	Sample	No. Retrieved	No. Discarded	No. Utilized
Stanbic IBTC	14	14	0	14
First Bank	16	14	1	13
Wema Bank	12	12	0	12
Unity Bank	13	13	0	13
Zenith Bank	20	17	2	15
FCMB	13	13	0	13
Union Bank	8	8	0	8
Keystone bank	8	8	0	8
Enterprise Bank	7	7	0	7
Skye Bank	13	12	0	12
Fin Bank	11	11	0	11
Eco Bank	9	9	0	9
UBA	13	13	1	12
Sterling Bank	13	13	1	12
Diamond Bank	16	14	0	14
Fidelity Bank	15	15	0	15
GTB Bank	16	16	1	15
Total	217	209	6	203

Source: Survey results, 2018

The results presented in table 4.1 describe the distribution and retrieval patterns of the questionnaire. Out of 217 questionnaire copies distributed, 209 (96%) copies were successfully retrieved from the target participants. The loss of 4% was as a result of the unplanned or unforeseen cases of transfer, ill-health and the tight schedule of some of the target participants and as such their inability to complete their questionnaire copies within the specified time window. Data from the retrieved copies of the instrument were cleaned errors. Six (6) of the copies had errors such as blank or missing

sections and were discarded. Thus, 203 (94%) were used for the analysis. Hence, this study has a 94% response rate, which is acceptable.

Univariate Results

The data distributions shown in this section are geared towards assessing the extent to which the variables are manifested in the framework of the banks being investigated. Interpretations for distributions are therefore based on the assessment of central tendencies and the extent of dispersion for the distributions. Based on the scale adopted, the cut-off mean ($\bar{x}$) = 3. Thus, $\bar{x} > 3$ indicates prevalence of the item, whereas $\bar{x} < 3$ means participants disagree and on the prevalence of the item.

Human capital development: The predictor variable for this study is human capital. The assessment of the items of the human capital as presented in table 4.6 below:

Table 2.2 Distribution for human capital

	N	Mean	Std. Deviation
In my organization, employees undergo continuous training.	203	4.0690	.93086
In my organization employees are highly educated.	203	4.0394	.92191
In my organization, employees' skills are upgraded.	203	4.0640	.89045
In my organization, employees are creative and bright.	203	4.1330	.85425
In my organization, employees come up with new ideas	203	4.1281	.95095
In my organization Employees are motivated to share new ideas.	203	4.0985	.97501
Valid N (listwise)	203		

Source: Survey results, 2018.

The result indicates that the items of human capital development are well affirmed by the participants of the study. This is proven by values of means of the items greater than average ($\bar{x} > 3$).

Organizational innovation: The analysis indicates the extent to which the organisations initiate new processes and are creative in their products and service delivery.

Table 2.3 Distribution for indicators of product innovation.

	N	Mean	Std. Deviation
My organization has introduced more innovative products and services during the past five years.	203	4.0887	.87993
My organization is often first-to market new product and services	203	4.1281	.94048

My organization's new products and services are often perceived as original by customers.	203	4.1084	.88333
Valid N (listwise)	203		

Source: Survey results, 2018

Table 4.3 is the output for product innovation which suggests that majority of the workers perceives their banks embrace creativity and initiate new approaches to service. This can be deduced from the mean value that is above the adopted threshold of 3, indicating moderate preponderance of the variable within the banks.

Table 2.4: Distribution for indicators of process innovation

	N	Mean	Std. Deviation
My organization constantly improves business processes.	203	4.1478	.94807
My organization has developed many new management approaches during the past five years.	203	4.0443	1.00149
my organization improvise on new methods when we cannot solve a problem using conventional methods,	203	4.0985	.99511
Valid N (listwise)	203		

Source: Survey results, 2018

Table 4.4 corroborate that participants agree that innovation is a key feature of the organisations. The mean values ($x > 3$) attest to the claim that respondents affirm the prevalence of these indicators.

Table 2.5: Distribution for indicators of market innovation

	N	Mean	Std. Deviation
My organization most recent marketing program is new in the market as compared with that of competitors	203	4.0591	.94735
My organization is often at the cutting edge of technology. In new product and service introductions.	203	4.1084	.94820
My organization's new products and services often take us up against new competitors.	203	4.0936	.90439
Valid N (listwise)	203		

Source: Survey results, 2018.

Descriptive statistics on the indicators shows that market innovation is a prevalent feature of the organisations. Given the high central tendencies and moderate dispersion for the indicators ($x > 3$), it could be deduced that market innovation is a significant aspect and characteristic of the target banks of the study.

Bivariate Results

This section contains test results on the null hypotheses which are two-tailed. The Spearman's Rank Order Correlation Coefficient was adopted in the test for correlation between variables. Given type one error allowance of 5%, significance for relationships is therefore based on a probability (P) criterion of $P < 0.05$, while weak or insignificant relationships are affirmed based on the evidence of a $P > 0.05$ level.

Correlations

Table 2.6: Hypotheses for human capital development and measures of organizational innovation

			HCD	PI	PRI	MKI
Spearman's rho	HCD	Correlation Coefficient	1.000	.292**	.253**	.304**
		Sig. (2-tailed)	.	.000	.000	.000
		N	203	203	203	203
	PI	Correlation Coefficient	.292**	1.000	.576**	.721**
		Sig. (2-tailed)	.000	.	.000	.000
		N	203	203	203	203
	PRI	Correlation Coefficient	.253**	.576**	1.000	.643**
		Sig. (2-tailed)	.000	.000	.	.000
		N	203	203	203	203
	MKI	Correlation Coefficient	.304**	.721**	.643**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	203	203	203	203

**. Correlation is significant at the 0.05 level (2-tailed).

The evidence from the test shows that human capital development has strong and significant affinity with product innovation ($\rho = .292$; $P = 0.000$). It also indicates that human capital development also influences process innovation ($\rho = .253$; $P = 0.000$) and that human capital development significantly stimulates market innovation ($\rho = .304$; $P = 0.000$). For this reason, human capital development has a strong and significant relationship with organizational innovation. Thus, activities that champion human capital development will stimulate the three facets of innovation in the banks. Also, result indicates that the association between human capital development and market innovation is more noticeable than the others. It means the banks innovate more in the marketing domain (owing to human capital development) than the other spheres of innovation. As a result, all null hypotheses

on the relationship between human capital development and the measures of organizational innovation are rejected. Alternatively:

- 1) Human capital development has a significant relationship with product innovation
- 2) Human capital development has a significant relationship with process innovation
- 3) Human capital development has a significant relationship with market innovation

DISCUSSION OF THE FINDINGS

The findings of this study show that human capital development significantly impacts on the organizational innovation of banks in the South-South of Nigeria. So, increasing employees' abilities and skills are projected to create future returns through improved efficiency and business performance (Shih, Chiang, & Hsu, 2006). Ostroff and Bowen (2000) found that human capital practices are significantly linked with workers perceptions and expectations which influence work pace and innovative capability. The study outcomes further support Raghuram's (1994) position that staffing and training are core processes that develop critical skills for competitive advantage, via innovation.

As regards human capital development and process innovation, this study found that higher levels of human capital will provoke process innovation. This is in line with the findings of Audretsch and Feldman (1996) who report that human capital development is an antecedent of process innovation. Similarly, Hansen and Serin (1997) also found that learning-by-doing has strong linkages with innovation process in technology based firms.

This study also affirms that there is a link between human capital development and market innovation. This is in line with the findings of Lenihan, and McGuirk (2014) who suggested that skill and knowledge are acquired through human capital development which spark off market innovation. According to Wright et al. (2003), various methods of development increase employees' skills and have a direct effect on their attitude such as motivation, commitment and satisfaction. This study supports a large body of research which consider human capital development as a strategic element of employee performance and overall organisational innovation (Hardre, 2003; Campbell, 1990). It is probable that competitive advantage is an outcome of the capabilities in the human resources themselves, and not to the policies per se. It is also most probable that development practices such as empowerment and training could be a good foundation for building a pool of inimitable resources and capabilities. Individual and team training and development may be employed to add new skills to the existing employee resources and capabilities.

CONCLUSION

The results for this study form the empirical base for its conclusions about the relationship between intellectual capital development and organizational innovation. Based on the findings, the study affirms that intellectual capital development contributes positively towards the innovation of the banks in the South-south of Nigeria. This is because human, social and structural capital development

have appreciable link with organizational innovation measures (product/service innovation, process and market innovation).

RECOMMENDATION

Organizations should invest in human capital development programs by training their staff in line with observed gaps or organizational deficiencies in expertise or knowledge. Such programs should be regularly done to provide support for organizational innovation.

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