



KNOWLEDGE APPLICATION AND ORGANIZATIONAL INNOVATIVENESS OF TERTIARY INSTITUTIONS IN SOUTH-SOUTH NIGERIA

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Abstract

This paper focused on the role of knowledge application on innovativeness of tertiary institutions in south-south, Nigeria. The study adopted the cross-sectional survey design with data collected from 221 senior staff of all government-owned universities in the south-south zone of Nigeria. Three null hypotheses were developed to evaluate the connection between knowledge application and the indicators of organizational innovativeness, and tested with the aid of Spearman's rank order correlation coefficient. Findings revealed a significant association between variables. It was concluded that knowledge application is transformative and where effectively applied, it will enhance the administrative, process and service innovativeness of tertiary institutions. Thereafter it was recommended that the leadership of tertiary institutions should emphasize the development of functional frameworks which allow and encourage creativity within their institutions.

Keywords: Knowledge application, administrative innovativeness, process innovativeness, service innovativeness.

Introduction

As a case within Africa, the growth of tertiary institutions within Nigeria can be considered explosive. Studies indicate that from a time period of just about 15 years, 2000 – 2015, more than 100 tertiary institutions (universities, colleges of health, polytechnics etc.) have been established. However, such growth has not offered more than the proliferation of poor education outfits and inadequate infrastructure. While the concern as Bamiro (2012) and Ajao (2010) observed has focused on meeting the growing population of the nation, the quality and innovativeness of these institutions has been relegated to the background. Hence, a growing concern of various interest groups and stakeholders currently bothers on considerations related to which tertiary institutions within the country are able to apply

knowledge and the extent to which such impacts on their innovativeness (Ojo, Raman, Chong & Chong, 2013; Bamiro, 2012; Nwezeh & Shabi, 2011; Ali, Munir, Johar & Kurniady, 2020; Asiyai, 2013). Innovativeness is considered critical for the functionality and relevance of any organization, no matter its context. This is so because innovativeness distinguishes organizations from their competitors or peers and offers them a position or placement within their various markets or context (Myhren, Witell, Gustafsson & Gabauer, 2018) Innovativeness, according to Donate and Guadamillas (2011) is relative. This is as what may be considered as an innovation in one context may in another context, offer no substantial value of advantage – as such one can consider innovativeness as emergent and premised on the understanding or good knowledge

of one's own context. Donate and Guadamillas (2011) argued that organizational innovativeness is vital for creating and maintaining the reputation and positive image of the organization. This is as innovativeness is argued to enhance the organization's capacity to stand out and make significant contributions towards addressing the service deficiencies and gaps within its market or context.

In view of the above, there appears to be substantial evidence linking knowledge application and organizational innovativeness; however, a dominant portion of these are observed to be based and drawn from developed countries and with scarce reference to the experiences of institutions within developing nations such as Nigeria (Duchek, 2013; Kaya & Patton, 2011). This lack of adequate research on the implications of knowledge application on innovativeness is further made evident due to the growing reports (Ajayi, 2007; Bamiro, 2012; Archibong & Okey, 2006) of Nigerian tertiary institutions which have failed to either identify with the changing dynamics of their societies or to apply the suitable practices and processes in addressing their research and responsibilities; thus, further increasing the gap between their features such as their course content, administrative processes as well as technological tools, and the required or tenable features demanded in dealing with the challenges of the current sphere of academia (Bamiro, 2012; Ajayi, 2007). Thus, this study investigated the relationship between knowledge application and organizational innovativeness of tertiary institutions in South-south Nigeria.

The objectives of the paper are stated as follows:

- i. To investigate the interaction between knowledge application and behavioural- innovativeness of tertiary institutions in Nigeria's south-south region.
- ii. To Explore the link between knowledge application and process-innovativeness of tertiary institutions in Nigeria's south-south region.
- iii. To examine the association between knowledge application and service-innovativeness of tertiary institutions in Nigeria's south-south region.

The following research questions were raised:

What is the connection between knowledge application and behavioural inventiveness of tertiary institutions in Nigeria's South-South region?

What is the correlation between knowledge application and process innovation of tertiary institutions in Nigeria's South-South region?

What is the association between knowledge application and service innovation of tertiary institutions in Nigeria's South-South region?

Literature Review

Theoretical Foundation

The knowledge-based theory is used as the conceptual basis for this research. Adler and Heckscher (2006) described the knowledge-based theory as offering a framework within which the acquisition of knowledge and its transformation are regarded as an essential component in firm profitability and competitiveness. The authors also noted that organizations that are able to identify and harness knowledge which is inimitable and transform such into features that match and enhance the processes and functions of the organization, have a higher tendency for improved performance and innovativeness. The knowledge-based theory according to Malik and Malik (2008) anchors the success and improved functionality of the organization generally on its ability to learn and invest in knowledge which is scarce. These positions provide a strong base and premise which supports the imperatives of knowledge application in the advancement of innovativeness of institutions (Nieves, Quintana & Osorio, 2014; Quintane, Casselman, Reiche & Nylund, 2011).

Knowledge application

Knowledge application describes the extent to which the institution applies its experiences and its generated facts or knowledge about its context. Utilization of information enables business entities to generate income through informed decision-making and respond more successfully to ecological transformations (Cohen & Levinthal, 1990). In other words, effective decision-making is driven by the utilization of knowledge which is integral to organization's

success and profitability. Guo and Wang (2014) argued that while learning equips the organization, without effective application, evidence is not reflected of what has been learnt. Knowledge application demonstrates capacity and competence in the face of change and competition; thus, it facilitates the utility of the institution's arsenal in a practical way. Knowledge application, according to Kallio and Bergenholtz (2011) is the process through which knowledge is directly applied to task performance or problem solving. Knowledge may be possessed and applied by individuals or by whole teams. Institutions benefit not from the existence of knowledge but from its proper application (Guo & Wang, 2014). Institutions that are able to apply their knowledge effectively often stand to improve on their features and functionality, especially when such is considerate of the unique factors that shape and define the institutions own operational context (Cohen & Levinthal, 1990). Knowledge application as observed by Kallio and Bergenholtz (2011) may adopt several forms and techniques, such as through partnerships and collaboration, or through policies – nonetheless, it details a process and action that connects the institution to its environment.

Innovativeness

Innovativeness describes the institution's capacity for creativity and imagination in its service offerings. Shoham *et al* (2012) in their study distinguished between innovativeness and innovation, noting that innovativeness describes the capacity for innovation – in other words, innovativeness is a significant antecedent of innovation. In their opinion, creativity and imagination are necessary for predicting outcomes of service innovation especially that which is concerned with uniquely addressing satisfaction gaps within the market. According to Yildiz, Basturk and Boz (2014), innovativeness indicates a disposition which is flexible, adaptive and highly knowledgeable of the market. This agrees with Abiola (2013) view that to innovate, one must know and understand the areas or gaps within which such innovations apply or within which they will be more appreciated. Shoham, Vigoda-Gadot, Ruvio & Schwabsky, 2012; Perry-Smith &

Mannucci, 2017; Pouwels & Koster, 2017) differentiated between the administrative, process and service innovativeness. These three are considered not as levels but facets of innovativeness – especially as applies to the behaviour of tertiary institutions.

Administrative innovativeness: The functional processes and routines of the institution either constrain or drive the creativity of the institution. Shoham *et al* (2012) argued that where administrative actions and procedures are accommodating and receptive of change and transformation. Administrative innovative however captures the behaviour and structural features of the institution in line with relationships, communication and leadership (Nwosisi, 2020).

Process innovativeness: Processes link various stages and lead to the eventual outcome in terms of behaviour. Institutional processes can either be delimiting in terms of high reliance on protocols or routines, or it could support creativity and thus achieve flexibility (Ekweli, 2020). Abiola (2013) asserted that for institutions to survive, their processes must not only be efficient but must also be innovative and thus enable their effectiveness within particular contexts.

Service innovativeness: The innovativeness of services is reflected in the capacity of the service to yield new experiences for clients and satisfy them in ways other services are unable to. Service innovativeness translates to how well service content and features are creative and able to address existing satisfaction concerns of the institution's clients (Shoham *et al*, 2012; Mahmoud, Hinson & Anim, 2018; Bettencourt, Brown, Sirianni, 2013).

Knowledge Application and Innovativeness

Duchek (2013) stated that knowledge is what facilitates the institution's capacity for functionality. When institutions learn and can develop required service offerings, they sustain their relevance through the recognition and validation of their actions and behaviour by the public. Effective institutions are such that contribute meaningfully, by which one implies that their services match existing needs and provide solutions to certain problems or challenges. Knowledge application as such offers

a deliberate and practical approach towards problem-solving that begins first with the identification of what knowledge is useful or relevant, and then the application of such in addressing the needs and concerns of the institution (Abiola, 2013; Onu, Eskay, Obiyo, Igbo & Ezeanwu 2012; Alegre, Sengupta,

Lapiedra, 2013). This suggests possible effects on the innovative behaviour of institutions. Figure 1 below advances an operational framework on the possible association between knowledge application and the indicators of organizational innovativeness.

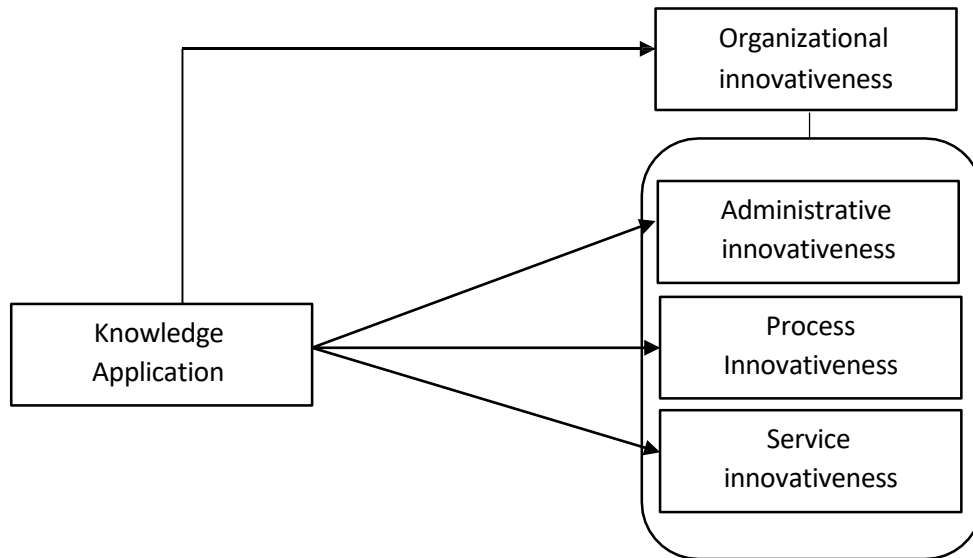


Figure 1.1: Operational framework of Knowledge application and organizational innovativeness. Source: Conceptualized by researcher with measures of organizational innovativeness adapted from Shoham *et al* (2012).

It is important to note that by application, identifies with the several steps inherent in the use and involvement of knowledge in the institution's actions and functions – ranging from the use of technology in the processes of the organization the empowerment of competent staff in their roles. Knowledge application as such is integrative and supports the institutions expression of itself in most effective, efficient and productive manner (Fichman, Dos Santos & Ze, 2014). This is because it connects the various levels of the institution, permeates its various units, groups and systems, and also impacts on its service content. In view of the foregoing, it is important to note that while previous studies (Kaya & Patton, 2011) appear to agree on the possible consequences of knowledge application, there is however poor empirical support linking knowledge application and the innovativeness of tertiary institutions in the South-south of Nigeria. Thus, each hypothesis is listed below:

- H01:** There is no significant association between knowledge application and administrative innovativeness of tertiary institutions in South-South Nigeria
- H02:** There is not a substantial connection between knowledge application and process innovation in South-South Nigerian tertiary institutions.
- H03:** There is no significant link between knowledge application and service innovativeness of tertiary institutions in South-South Nigeria

Methodology

This study was designed as a cross-sectional survey. The accessible population for this study comprised 1012 senior staff of all government-owned degree-awarding tertiary institutions in the South-south region of Nigeria (Akwa-Ibom State, Rivers State, Cross Rivers State, Edo State, Delta State, Bayelsa State). The Krejcie and Morgan 1970 sampling size calculation graph was used to calculate the specimen of respondents. Based on

the noted accessible population of 1012 senior staff, a sample size of 285 was adopted in line with the sample size distributions in the table. Sampling for the study was carried out using the stratified sampling technique in which each institution was assessed as a stratum and the sample size (285) is proportionately distributed across the sub-population for each institution. This paper adopted the questionnaire as its primary tool for data collection. The instrumentation of knowledge application was

adapted from operational definitions of the concept offered in previous studies (Guo & Wang, 2014; Flor & Oltra, 2013) while the instrumentation for organizational innovativeness was adapted from Shoham *et al* (2012). Indicators for both variables were scaled on a 5-item instrument with all indicators stated in the positive and ranked on the Likert scale totally disapprove, disagree, indifferent, concur, and completely concur.

Table 1: Cronbach alpha coefficient for instruments.

Variables	Items	Cronbach Alpha Coefficient
Knowledge Application	5	0.829
Administrative Innovativeness	5	0.744
Process Innovativeness	5	0.864
Service Innovativeness	5	0.757

Table 1 above presents the coefficients for the result of the reliability test. Instrument assessments reveal reliable coefficients suggesting consistency (where $\alpha > 0.70$) and as such are considered adequate based on the properties adopted in the assessment of the variables (Tay, Woo & Vermunt, 2014).

Data Results

The fieldwork for the study involved the distribution and retrieval of hardcopy assessment instruments to the specified tertiary institutions within the South-south of Nigeria. While 285 copies were distributed, only 221 copies were retrieved from the field. After assessments for errors such as uncompleted or blank sections and double item selection, all retrieved copies were considered as admissible in the analysis.

Table 2: Summary for data distributions for the variables

N	Mean	Std. Deviation	Skewness	Kurtosis
Statistic	Statistic	Statistic	Statistic	Statistic
Application	221 1.8371	.32062	.602	7.962
Administrative	221 2.9756	.62402	-.981	.275
Process	221 2.8434	1.05050	-.095	-1.636
Service	221 2.5457	.45800	-.810	.513
Valid N (listwise)	221			

The univariate analysis as illustrated in Table 1 demonstrates that there is a poor and weak level of knowledge application within the institutions ($x = 1.8371$); however, the summaries support the

evidence of administrative ($x = 2.9756$), process ($x = 2.8434$) and service innovativeness (2.5457) as characterizing the institutions.

Table 3: Test for hypotheses.

Application		Administrative	Process	Service	
	Correlation Coefficient	1.000	.315**	.264**	.504**
Application	Sig. (2-tailed)	.	.000	.000	.000
	N	221	221	221	221
	Correlation Coefficient	-.315**	1.000	.510**	.528**
Administrative	Sig. (2-tailed)	.000	.	.000	.000
	N	221	221	221	221
Spearman's rho	Correlation Coefficient	-.264**	.510**	1.000	.297**
Process	Sig. (2-tailed)	.000	.000	.	.000
	N	221	221	221	221
	Correlation Coefficient	-.504**	.528**	.297**	1.000
Service	Sig. (2-tailed)	.000	.000	.000	.
	N	221	221	221	221

Source: Data Outcome

The tests on the relationship between the variables demonstrate a position that identifies knowledge application as a significant predictor of outcomes of organizational innovativeness. The results show as follows:

- i. Knowledge application significantly at a rho of 0.315 and $P < 0.05$, contributes towards the administrative innovativeness of the institutions. The test results indicate that the association between knowledge application and administrative innovativeness is weak; suggesting that knowledge application has a positive impact on how well the administrative processes of the organization are carried out. Hence the null hypothesis is rejected as the evidence affirms that there is a significant relationship between knowledge application and behavioural innovativeness of tertiary institutions in the South-south region of Nigeria.
- ii. Knowledge application significantly at a

rho of 0.264 and $P < 0.05$, contributes towards the process innovativeness of the institutions. The evidence shows that in relation to the research question, the relationship between the variables is very weak; however, it is also positive, implying that knowledge application is useful and important for establishing the process innovativeness of firms. Hence the null hypothesis is rejected as the evidence affirms that there is a significant relationship between knowledge application and process innovativeness of tertiary institutions in the South-south region of Nigeria.

- iii. Knowledge application significantly at a rho of 0.504 and $P < 0.05$, contributes towards the service innovativeness of the institutions. Evidence on the relationship between the variables show that in answering the research question, the relationship between knowledge application and service innovativeness is moderate

and also has a positive outcome. Hence the null hypothesis is rejected as the evidence affirms that there is a substantial connection between knowledge application and service innovativeness of tertiary institutions in the South-south region of Nigeria.

Results demonstrate the relationship between knowledge application and the measures of organizational innovativeness is significant. The results indicate that knowledge application's relationship with service innovativeness is more significant and stronger compared to its relationship with administrative and process innovativeness. The evidence in this way substantiates the role of knowledge application as significant and as such imperative towards enhancing outcomes of administrative, process and service innovativeness of tertiary institutions in the South-south of Nigeria.

Discussion of the findings

The relationship between knowledge application and the three measures of organizational innovativeness was observed to be significant. This necessitated the rejection of all related null hypothetical statements as it was observed that knowledge application contributes significantly towards the manifestations of administrative, process and service innovativeness. Evidence from the analysis demonstrates that the actions of the organization geared towards applying the knowledge forms of the organization in its service offerings, impacts on its outcomes – thus expressing creativity and innovative capability.

The findings of this study reiterate the views and observations of previous studies (Malik & Malik, 2008; Schiuma, 2012; Ojo *et al.*, 2013) – establishing knowledge application as a key factor in the understanding and development of innovative capabilities and features of tertiary institutions. Knowledge application in this sense can be considered as the bridge between the type of knowledge required by the organization and the goals or objectives of the organization. Knowledge application is as such fundamental and advances the organization towards its goals; such as the development of unique service offerings that facilitate improved performance of the

institutions (Ismail & Mamat, 2012; Isaksen & Lauer, 2002). Knowledge application is also highly sensitive and depending on the effective coordination of the application process; could lead to loss and resource waste for the organization. This study through its findings reiterates the imperatives of not only recognizing and integrating knowledge but ensuring that it is effectively applied to address the concerns and problems of the organization.

Conclusion

Knowledge application is presented herein as an imperative for organizational innovativeness. Its relationship with the administrative, process and service innovativeness of tertiary institutions is revealed to be significant and also positive – indicating that increased focus and effort in the application of knowledge, contributes towards the innovative transformation of these institutions. This also demonstrates the need for adequate knowledge utilization or application platforms or modules within organizations – such that effectively move acquired or stored knowledge into expressed forms manifested in the administrative, process and service features of the institutions.

Recommendations

Given the facts established in this paper, it is recommended that the leadership of tertiary institutions emphasize on the development of functional frameworks which allow and encourage creativity within their institutions. While behavioural policies may be instituted to guide and streamline behaviour, such policies should be accommodating of new ideas and rather than stifle or constrain innovation, offer rewards and considerations for inventiveness in ways that motivate employees to be more open about their experiences, capacities and knowledge.

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