



ARE THERE DIFFERENCES IN KNOWLEDGE CLUSTER STRATEGY WITH ACCREDITATION FOR MINIMUM ACADEMIC STANDARD, STAFF TRAINING/DEVELOPMENT AND RESEARCH/ PUBLICATIONS IN NIGERIAN UNIVERSITIES?

¹Abdullahi Tukur (PhD)
(gidadotukur88@gmail.com)
+2348069581011

²Israel Olusegun Adedeji (PhD)
(segdeji2014@gmail.com)
+2348038093496

¹Zamfara State Ministry of Education, Education Quality Assurance Department, Gusau, Zamfara State

²Federal College of Education (Technical), Department of Educational Foundations, Gusau, Zamfara State

Abstract

The importance of knowledge-based economy has become a reality to all nations of the world through knowledge creation, sharing and application. The objective of this study was to investigate the influence of knowledge cluster strategy on quality assurance practices (accreditation of academic standard; training and development and research and publication) of universities in North-West Geographical Zone in Nigeria. Hypotheses were formulated in accordance with the objectives of the study. Descriptive survey research design was used for the study to collect data using constructed questionnaire which was prepared and validated by experts in Educational Administration and Planning. The population of the study was made up of 102 Quality Assurance officials, 170 Management Staff and 7,346 academic staff of the universities in North-West Geographical Zone of Nigeria. Proportionate sampling technique was used to select the sample size of 659 respondents from the sampled universities in North-West Geographical Zone, Nigeria. The data was analysed in frequency counts and percentage. The formulated hypotheses of the study were tested using Analysis of Variance and the Post-Hoc Analysis with Scheffe test at 0.05 level of significance. The findings revealed that there were no significant differences between knowledge cluster and accreditation of academic minimum standard ($P = 008$; 0.05 sig. level); staff training and development ($P = 298$; 0.05 sig. level); and research and publication ($P = 519$; 0.05 sig. level) in universities in North-West Geographical Zone, Nigeria. This indicated that the P-values were higher than 0.05 level of significance. The study concluded that knowledge cluster strategy influenced quality assurance practices of Universities in North-West Geographical Zone in Nigeria. However, this study recommended that all universities in North-west, Nigeria should maintain the adoption of knowledge cluster strategy to enhance quality assurance practices through integration of course contents, course duration and curriculum compliance.

Keywords: Academic Standard, Accreditation, Knowledge Cluster Strategy, Quality Assurance, Research and Publication.

1. Introduction

Universities are the intellectual fields of knowledge creation, production, research and exploration. In other words, universities are designed environments to be responsible for educational inquiries, research and exploration of knowledge towards national unity and development. The main purpose of founding universities is to drastically transform the societies educationally, economically, politically, socially and culturally. It is indeed assumed that a nation's development is dependent upon the ability of its universities to produce new knowledge, new technology and new ideas to its citizens accordingly. This commensurate with



the view of Ramakrishnan and Ya-sin (2012) who remarked that universities, as the education centres, are expected to serve as drivers of innovation and instauration by providing developmental ideas to the societies.

Pawłyszyn, Fertsch, Stachowiak, Pawłowski and Oles'ków-Szłapka (2020) asserted that knowledge is the main transaction unit flowing through the structures of innovation networks also that most multilateral entities as well as small- and medium-sized enterprises (SMEs) operate in the same or interrelated fields, and geographical characteristics facilitate clustering. A cluster is a geographic concentration of interconnected companies, specialized suppliers, service providers firms in related industries, training institutions, and support organizations linked around technologies or an end product within a local area or region (Porter, 2003).

The knowledge cluster strategy is a process used by an incorporated team to review the ideas of past successes and failures with the goal of improving future activity, event or task in an organization which its influence through modern guidelines on graduation process of universities in Nigeria should not be over-emphasized. Quality assurance practices on the other hand, is all about consistently meeting product specification and getting things rightly done according to the organizational demands. In the university setting, the concept of quality assurance practices entails the ability of the institutions to meet the expectations of the users of manpower in relation to the quality of skills acquired by their outputs (Ajayi & Akindutire, 2007).

Therefore, the ability of universities to provide adequate inputs in terms of modern technological build-up, expertise dialogues, development education process are some of the attributes of knowledge cluster strategy which tremendously influence the quality assurance practices in a university system towards successful implementation of educational polices in this competitive global educational arena (National Universities Commission, 2004).

The virtue of knowledge cluster strategy influences quality of staff training and development if systematically applied in human resource planning and development in Nigerian universities. Verily, the attributes of Knowledge cluster strategy promote skills and competences of both employers and employees through among others brainstorming, sharing academic practice and knowledge cluster strategy (Nonaka & Takeuchi, 2015). It was assumed that the staff willingness without qualitative training on technical know-how is bound to costly errors and inefficient organizational services. Therefore, inclusion of advanced knowledge cluster strategy to quality assurance activities in Nigerian universities conserves knowledge capturing, structuring, managing and disseminating working experiences among workers of different capacities.

Today, most organizations are comfortable with emergence of knowledge sharing technologies that facilitate teamwork and Knowledge cluster strategy exercises. Wei-Chong, Yuen and Chew-Gan (2014) remarked that knowledge sharing bear e-mail or other world-wide net communication media has become an indispensable enabler and speedy system that preserves free innovative ideas and competitive experiences that promote today's university operations. Thus, knowledge cluster strategy approach boosts national and international connections and



sharing of technological thoughts that rapidly enhance universities' performance and upgrade them to technically cope with contemporary challenges.

The university education in Nigeria has been bedevilled by administrative challenges engendered by among other poor governmental support, regular policy changes, inadequate infrastructure, political intervention, poor staff morale, weak academic culture and students' academic background. Many quality assurance evaluative reports confirmed that Nigeria owns the largest universities in Africa, but their qualitative technological operations towards the future of students remain the topic of discussion. For instance, Salman (2009), Akinyemi and Abidun (2013) as cited in (NUC, 2017) remarked that Nigerian universities enrolled the highest number of students in any African countries, with 129 universities roughly enrolling over 1.9 million applicants/students yearly with approximately 1.5 million candidates awaiting enrolment yearly. With enrolment increasing and the creation of more universities, the issue of graduates' quality and qualification is still a topic of discussion.

Inability of many Nigerian universities to adopt modern approach to knowledge sharing and its integration into their training development processes has been related to inefficiency in ICT which is a major tool of knowledge cluster strategy activities in advanced countries across the globe. Although, NUC's continuous attempts to move Nigerian university education forward involves matching their activities with international standards on a continuous basis, through several strategies of benchmark settings, accreditations, standards and regulatory frameworks, but, some Nigerian universities are still producing not well qualified graduates due to staff training problems which in turn negatively affect the economic, social and political development of the country.

In some of the previous empirical studies carried out on knowledge cluster management, Jumare (2014) investigated application of knowledge management strategies on the management of universities in North-West Zone, Nigeria and found out that knowledge cluster strategy was not used on universities' decision making process, likewise collaborative physical workspace strategy and also not fully applied to planning and communication processes. Uchendu, Osim, and Akuegwu (2012) examined knowledge clusters strategy and university lecturers' job performance in Cross River State, Nigeria. They found out that a significant relationship between knowledge sharing, knowledge mapping, and academic staff' job performance. Ohiorenoya and Eboreime (2014) surveyed knowledge clusters strategy practices and performance in some Nigerian universities.. They found out that there was a high positive correlation between knowledge clusters strategy and performance in Nigerian universities. Also, Modebelu and Duvie (2015) conducted a research on knowledge cluster strategy creativity elements expected of academics in Nigerian universities and the study found out that there was a low level influence of knowledge cluster strategy on creativity elements and competencies of academic staff in Nigerian universities.

The gap identified, from this review in term of the content was that none of these scholars focused on measuring knowledge cluster strategy with quality assurance practices and most of their findings did not specify the knowledge cluster indicators to organisational performance (comparative advantage, innovation, and growth). This perhaps has been one of distortions to adequate use of knowledge cluster strategy for effective goal achievement especially in the



North-west, universities, Nigeria.. Therefore, this study icarried out to fill this gap by investigating differences between knowledge cluster strategy and quality assurance practices of universities in North-West Geographical Zone, Nigeria with a view to recommending vital measures that would enhance the quality of university education not only in this zone, but all over the country at large.

It is against this background that this study examine the differences between knowledge cluster strategy and quality assurance practices (accreditation of academic standard; training and development and research and publication) of universities in North-West Geographical Zone in Nigeria. The independent variable of this study is knowledge cluster strategy while the dependent variable is quality assurance practices which were operationalised as accreditation of academic standard; training and development and research and publication.

The findings of this study, upon the completion of this study, would be beneficial to students, policy makers, school administrators and quality assurance officials by providing more insights on innovative managerial skills and competencies to intensify deliberate and systematic coordination of organization's personnel, technology settings, international relations and organizational structure in order to add value through such advanced reuses and innovations. This is achieved through the promotion of creating, sharing, and applying knowledge as well as feeding of valuable lessons learned and best practices into corporate memory and achieve longer-term vision and mission with experience of university management accordingly.

Therefore, the main objective of the study is to investigate whether there are differences in knowledge cluster strategy with accreditation for minimum academic standard, staff training/development and research/ publications in universities located in North-West Geographical Zone of Nigeria. Specifically, the study intends to achieve the following objectives.

- a. To ascertain whether there is difference between knowledge cluster strategy and accreditation for minimum academic standard of universities in North-West Geographical Zone, Nigeria.
- b. To establish whether there is difference between knowledge cluster strategy and staff training/development of universities in North-West Geographical Zone, Nigeria.
- c. To determine whether there is difference between knowledge cluster strategy and research/ publications of universities in North-West Geographical Zone, Nigeria.

The following null hypotheses are formulated for testing in order to achieve the above specific research objectives.

H₀₁: There is no statistical significant difference between knowledge cluster strategy and accreditation for minimum academic standard of universities in North-West Geographical Zone, Nigeria.

H₀₂: There is no statistical significant difference between knowledge cluster strategy and staff training/development of universities in North-West Geographical Zone, Nigeria.

H₀₃: There is no statistical significant difference between knowledge cluster strategy and research/ publications of universities in North-West Geographical Zone, Nigeria.

2. Literature Review and Theory



2.1 Conceptual Framework

Knowledge clusters strategy serve as a local assemblage of internally related networks to create, review and share knowledge and managerial experience of a working environment. Ashbee (2003) highlighted that sharing of tacit knowledge is a crucial variable to explain why clustering of knowledge and intensive industries take place by the virtue of information and communication technology. In other words, knowledge clusters strategy is the ability to selectively capture, archive, and access the best practices of work-related knowledge and decision making from employees and managers for both individual and group behaviours.

The concept of Knowledge clusters strategy (KC) is an interdisciplinary approach which refers to information technologies, human resource management or financial aspects related to intellectual capital (Jashapara, 2006). Knowledge clusters strategy is defined as any processes and activities related to creating, acquiring, separating, exchanging and using knowledge, wherever it is, in order to increase the organization's efficiency and effectiveness. Ruggles and Holtshouse (2009) identified the following key attributes of knowledge clusters strategy as: generating new knowledge; innovating valuable work-related knowledge and experience; using accessible knowledge in decision making; embedding knowledge in processes, products and services; preserving knowledge in documents, databases and software; facilitating knowledge growth through culture and incentives; transferring existing knowledge into other parts of the organization; and measuring the value of knowledge assets and/or impact of Knowledge clusters strategy.

On the other hand, Quality assurance is about consistently meeting product specification or getting things right the first time and every time. The National Universities Commission (NUC, 2006) defined quality assurance as the systematic review of educational programmes to ensure that acceptable standards of, education, scholarship and infrastructure are being maintained. The quality assurance practices in this study include accreditation for minimum academic standard, staff training/development of universities staff and research/ publications of universities in North-West Geographical Zone, Nigeria.

2.2. Review of Related Empirical Literature

Uchendu, Osim, and Akuegwu (2012) examined knowledge clusters strategy and university lecturers' job performance in Cross River State, Nigeria. They found out that a significant relationship between knowledge sharing, knowledge mapping, and Academic Staff' job performance. Another study was conducted by Jumare (2014) titled "'Influence of Knowledge cluster strategy on the management of universities in North-West Zone in Nigeria'". The population of the study consisted of thirty management staff and one thousand and seventy lecturers of the six sampled universities in the study zone. Out of the population, thirty management staff and five hundred and thirty lecturers were used as a sample for the study. The formulated hypotheses were retained after statistical test with Mann-Whitney U-test methods at 0.05 level of significance. The outcome of the study revealed that Knowledge clusters strategy was not used on universities' decision making process, likewise collaborative physical workspace strategy and knowledge clusters strategy were not fully applied to planning and communication processes. Based on this, it was recommended that, modern ICT facilities should be adequately provided, staff quality should be promoted through employing trained educational planners, and staff behaviour and output should constitute large aspect of promotion.



Ohiorenoya and Eboime (2014) surveyed knowledge clusters strategy practices and performance in some Nigerian universities. These researchers measured Knowledge clusters strategy via six components: creation, capturing, organization, storage, dissemination, and application. They found out that a high positive correlation between Knowledge clusters strategy and performance in Nigerian universities. However, the researchers did not specify the way in which the studies wanted to adequately capture the responses of their participants to the indicators of performance (competitive advantage, innovation, and growth). Also, the findings predispose one to assume that Knowledge clusters strategy (its creation, capturing, organization, storage, dissemination, and application) is fully practiced in the selected universities, without stating their most common practices.

Modebelu and Duvie (2015) conducted a research work titled ‘‘Knowledge clusters strategy Creativity Elements Expected of Academics in Nigerian Universities’’. The study is basically set to examine modern KC strategies designed to tackle various challenges in tertiary institutions in Nigeria such as poor communication, poor interpersonal relationship, utilization of facilities among others. Descriptive research design was used for the study. The population of the study was not statistically specified. But out of it, a total of 200 lecturers from two government owned universities were randomly drawn and responded to the study. A four-point Likert type scale questionnaire of 34 - items was used for data collection. Frequency distribution table and mean were used for analysis of the research questions. The instrument was validated by two experts in Education Management, while split-half reliability coefficient values of 0.85, 0.80 and 0.90 were determined. The findings revealed that knowledge clusters strategy creativity elements expected of lecturers for successful performance of their duties was low. Based on the findings, it was recommended among others that knowledge clusters strategy creativity competence related workshops should be organized regularly for these lecturers to enable them develop these skills so as to inculcate same in their students (future organization managers).

Alharithy (2015) studied knowledge management processes and models, causes of differences in their applications and how their strong coherence could lead to misunderstandings in interpretations. After taking into consideration existing point of views, the results indicated that causes of differences in applying the processes and models are due to diversity of strategic attitudes in organizations, the impact of high administration and common thought on knowledge management, size of organizations, sectorial activities and its interest in tacit and explicit knowledge. While the models are more comprehensive than the processes for their content, the approval of a model at the organizational level done by the higher authorities through strategic resolutions and requires consistency with the internal and external environment of the organization. Also the other knowledge management processes are supervised and monitored by the knowledge management department, although that they are offered as a package with the knowledge management model for the organization.

A study was conducted by Omotayo (2016) titled ‘‘knowledge clusters strategy guidelines as important tools for quality assurance practices in Nigerian University System’’. Descriptive survey research design was used for the study. The population consist of 55 principal officials, 200 heads of department and 450 lecturers derived from four federal universities, six states and four private universities in south-south zone, in Nigeria. The stratified and purposive sampling techniques were used in selecting a sample of 30 principal officials, 50 heads of department and



140 lecturers from the 6 universities. Data collection was done using four Likert structured questionnaire which was validated by the supervisors. The data were analyzed by using descriptive means and standard deviation. The postulated hypotheses were tested using regression analysis at 0.05 level of significance. The findings affirmed that influence of Knowledge clusters strategy procedures to quality assurance practices in Nigerian Universities is low when compared with advanced universities across the globe. One of the recommendations of this study was that measures should be taken by adequate provision and utilization of modern facilities such as ICT facilities and other structures capital for the advancement of education in Nigeria.

Udih (2017) examined The link between performance and knowledge management in Nigerian public tertiary institutions. Three research questions and hypotheses were raised. Questionnaire administered was based on cluster and stratified sampling. The study found out that knowledge management is linked positively to organizational performance. In this era of knowledge economy, the study concluded that management should focus on knowledge management application; to gain competitive advantage, innovation and growth. Public tertiary schools can gain these three variables, if they apply knowledge management.

Ogunbanwo, Okesola and Buckley (2019) studied knowledge management awareness assessment in Nigerian tertiary institutions. The study applied a survey method using a closed ended questionnaire administered to 50 participants from each of the 10 institutions measured by Likert scaling. Employing SPSS for data analysis, frequency count and percentage score were adopted to analyse the demographic data, and the research hypotheses were analysed with chi-square test, Pearson chi square and bivariate correlation (Pearson). A positive relationship between awareness, current status and level of familiarity was noted. KM awareness level in the institutions is high even though there is a significant difference between the public and private universities, as well as between the students and academic staff. Since an increase in the awareness level increases, it is recommended that KM awareness level should continuously be improved upon in Nigerian tertiary institutions.

Akinnuwesi, Odumabo and Aribisala (2020) studied knowledge grid: an intelligent system for collaboration and knowledge management in Nigerian universities. Nigeria has 169 universities approved by National University Commission (NUC) with 43 Federal Universities, 47 State Universities and 79 Private Universities. The findings of the study revealed that knowledge building and management is a function of the information that one could have access to with ease but non-collaboration of the universities in a virtual environment is a hindrance to quality national knowledge building and management. Thus, the need arises to embrace grid system as platform for all universities to pool their resources together and hence make their information resources available and accessible for knowledge building and management. The study recommended the need to develop a robust knowledge grid model that will allow collaboration among universities in Nigerian community and hence facilitates information and knowledge sharing and management among the universities.

Pawłyszyn, Fertsch, Stachowiak, Pawłowski and Oles'ków-Szłapka (2020) investigated the model of diffusion of knowledge on industry 4.0 in Marshallian clusters. The subjects of research were enterprises in Marshallian clusters, as they are linked, which may contribute to knowledge



diffusion and Industry 4.0 solutions dissemination. Research methodology implemented included three stages, namely knowledge level recognition, Industry 4.0 knowledge diffusion model development, and validation of the model with case-based simulation. The conclusions, based on simulation results, refer to mechanism and the most important parameters of knowledge on Industry 4.0 diffusion.

2.3. Theoretical Framework

The theoretical framework adopted for this study was the Human Capital Development Theory. The notion of human capital first emerged post-World War II when it was advanced that investments in health, training and education could explain levels of economic growth that investment in physical capital could not. Human capital theory was propounded by Schultz in 1963. As an economic theory, it is presumed on the supposition that education or training enhances the efficiency of workers and useful life skills of the people, all things being equal.. One of the proponents of this theory, Becker (1963)believed that the height of workforce generation has positive relationship with the educational and training structure in which the higher the education and training a man gets, the higher the efficiency or achievements of an individual.

However, human capital theory fails the test of realism, due to weaknesses of method: use of a single theoretical lens and closed system modelling, inappropriate application of mathematical tools, and multivariate analysis of interdependent variables. Human capital theory imposes a single linear pathway on the complex passage between heterogeneous education and work.

Despite its limitations, human capital theory is very important and relevant to the current situation of developing nations like Nigeria where emphasis is laid on efficiency of labour as well getting the right nexus between higher education and world of work through information and knowledge management. The human capital theory has been adopted and used by so many scholars such as Becker (1963), Robert (1991), Babalola (2003) and Dubra (2010) among others.

3. Research Methodology

The study is survey in nature, which was set to investigate how the variables are related to one another as well; the approach enables the researchers to obtain data for the purpose of testing hypotheses related to significant differences between knowledge cluster strategy on quality assurance practices of universities in North-West Geographical Zone, Nigeria. The population of this study consisted of the entire 102 Quality Assurance Officials, 170 Management Staff (*Vice-Chancellor, DVCs, Bursar, Registrar, Academic Secretary, Auditor, Chief Librarian and Deans*) and 7,346 lecturers (*including HODs*) of the universities in North-West Zone of Nigeria. Find the distribution details in Table 3.1:

Table: 3.1 Population of the Study

North-West Geographical Zone	S/N	Universities	Quality Assurance Officials	Management Staff of Universities	Lecturers
Kaduna	1.	Ahmadu Bello University, Zaria	15	17	1815
	2.	Kaduna State University, Kaduna	5	11	228
Kano	3.	Bayero University, Kano	11	14	1791



	4.	Kano University of Science and Technology, Wudil	7	10	224
	5.	Mai-Tama Sule University, Kano	4	9	132
Jigawa	6.	Federal University Dutse, Jigawa	7	11	268
	7.	Jigawa State University, Kafin Hausa	6	9	223
Katsina	8.	Umaru Musa 'Yar'Adua University, Katsina	6	9	225
	9.	Federal University Dutsen-Ma	9	11	356
	10.	Alkalam University, Katsina	5	9	157
Zamfara	11.	Federal University, Gusau	5	11	205
Sokoto	12.	Usman Danfodio University, Sokoto	6	13	753
	13.	Sokoto State University, Sokoto	4	11	509
Kebbi	14.	Federal University Kebbi	7	13	221
	15.	Kebbi State University of Science & Technology Aleru	5	12	271
Total			102	170	7346

Source: National Universities Commission (2018)

The sample for this study comprised 585 respondents. Purposive sampling technique was used to select six Federal and State universities derived from Kaduna, Kano and Sokoto States. The sample was selected through proportionate sampling technique. Table 3.2 presents the distributions categorically:

Table 3.2: Sample for the Study

North-West Geographical Zone	S/N	Universities	Quality Assurance Officials	Management Staff of Universities	Lecturers	Total
Kaduna	1.	Ahmadu Bello University, Zaria	15	17	162	194
	2.	Kaduna State University, Kaduna	5	9	25	39
Kano	3.	Bayero University, Kano	10	12	145	167
	4.	Kano University of Science and Technology, Wudil	5	10	25	40
Sokoto	5.	Usman Danfodio University, Sokoto	5	12	72	89
	6.	Sokoto State University, Sokoto	4	10	42	56
Total			44	70	471	585



Table 3.2 has categorically showed the distributions of sampled universities in Northwest Zone in Nigeria. In the selection of respondents, proportionate sampling technique was used to select 100% of the sample size consisting of 48 Quality Assurance Officials and 76 Management Staff of the selected universities. With regard to the academic staff, 10% or more of the population was used to select 535 lecturers of these institutions. Olayiwola (2007) outlined that a sample size of 10% and above is adequate and appropriate for use in education and social researches. Thus, the sample size for this research was 585 respondents.

The instrument for data collection was a questionnaire titled “Influence of Knowledge Cluster Strategy on Quality Assurance Practices Questionnaire, IKCSQAPQ”. A five-point Likert scale of Strongly Agree (SA =5), Agree (A =4), Undecided (U =3), Disagree (D =2) and Strongly Disagree (SD =1) were used to determine the opinions of quality assurance officials, management staff and Academic Staff of universities in North-West Zone, Nigeria. The instrument was given to the specialists in Educational Management and Planning Department, Ahmadu Bello University, Zaria to screen and vet the contents of the instrument accordingly. After necessary corrections were made, the reliability of the instrument was done using the formula W-X and assuming 1 as the reliability coefficient. The coefficient result of 60 was obtained at 0.82 using Guttman’s split-half method of reliability test. This signifies that the instrument was reliable. The hypotheses were tested using statistical technique of Analysis of Variance (ANOVA) at 0.05 significant level. Official visit to the sampled areas was made by the researchers, where copies of the questionnaire was distributed personally by the researchers to the quality assurance officials, management staff and Academic Staff of universities in North-West Geographical Zone, in Nigeria. Where the researcher found it difficult to have access to the respondents, assistance of reliable hands was opted for. After the period of ten days of distribution, the researchers went back to compile the available data for analysis and interpretation accordingly.

4. Data Presentation and Analyses

4.1 Results of the Null Hypotheses Testing

H₀₁: There is no statistical significant difference between knowledge cluster strategy and accreditation for minimum academic standard of universities in North-West Geographical Zone, Nigeria.

The One Way Analysis of Variance was used to determine the significant difference or otherwise in the opinions of respondents on the data collected for items 1-5 of the questionnaire. As such, all the opinions of respondents were analyzed and presented in Table 4.1.

Table 4.1: Summary of Analysis of Variance on the Influence of Knowledge Cluster on Accreditation for Academic Standard of Universities in North-West Geographical Zone, Nigeria

Variables		Sum of Squares	df	Mean Square	F	Sig.
Accreditation	Between Groups	104.358	2	52.179	5.769	.003



Within Groups	5263.615	582	9.044
Total	5367.973	584	

[Not that the degree of freedom (df) is N-1 (df = N-1). If 585 is N, then 585-1 = 584]

From Table 4.1, it showed statistical results of hypothesis 1. The result of the f-ratio value 5.769 and 2 df 584 at 0.05 significant level is higher than the critical value 3.09. The observed probability value P (.003) is also lower than 0.05 level of significance. Therefore, the null hypothesis is rejected that there is a significant difference in the opinions of lecturers, management staff and Quality Assurance Officials on the influence of knowledge cluster on accreditation for academic standard of universities in North-West Geographical Zone, Nigeria.

H₀₂: There is no statistical significant difference between knowledge cluster strategy and staff training/development of universities in North-West Geographical Zone, Nigeria.

The One Way Analysis of Variance was used to determine the significant difference or otherwise in the opinions of respondents on the data collected for items 6-10 of the questionnaire. As such, all the respondents' opinions were analyzed and presented in Table 4.2.

Table 4.2: Summary of Analysis of Variance on the influence of Knowledge cluster on Staff Training and Development of Universities in North-West Geographical Zone, Nigeria

Variables		Sum of Squares	df	Mean Square	F	Sig.
Training and Development	Between Groups	86.894	2	43.447	1.213	.298
	Within Groups	20845.663	582	35.817		
Total		20932.557	584			

[Not that the degree of freedom (df) is N-1 (df = N-1). If 585 is N, then 585-1 = 584]

Table 4.2 shows statistical results of hypothesis 2. The result of the f-ratio value 1.213 and 2 df 584 at 0.05 significant level is lower than the critical value 3.09. The observed probability value P (.293) is also higher than 0.05 level of significance. Therefore, the null hypothesis is accepted that there is no significant difference in the opinions of lecturers, management staff and Quality Assurance Officials on the influence of knowledge cluster on staff training and development in universities in North-West Geographical Zone, Nigeria.

H₀₃: There is no statistical significant difference between knowledge cluster strategy and accreditation for minimum academic standard of universities in North-West Geographical Zone, Nigeria.



The One Way Analysis of Variance was used to determine the significant difference or otherwise in the opinions of respondents on the data collected for items 11-15 of the questionnaire. Thus, all the respondents' opinions were analyzed and presented in Table 4.3.

Table 4.3: Summary of Analysis of Variance on the influence of Knowledge cluster on Research and Publication Process in Universities in North-West Geographical Zone, Nigeria

Variables		Sum of Squares	df	Mean Square	F	Sig.
Research and Publication	Between Groups	74.132	2	37.066	.657	.519
	Within Groups	32822.729	582	56.396		
Total		32896.862	584			

[Not that the degree of freedom (df) is N-1 (df = N-1). If 585 is N, then 585-1 = 584]

Table 4.3 shows statistical results of hypothesis 3. The result of the f-ratio value .657 and 2 df 584 at 0.05 significant level is lower than the critical value 3.09. The observed probability value P (.519) is also higher than 0.05 level of significance. Therefore, the null hypothesis is accepted that there is no significant difference in the opinions of lecturers, management staff and Quality Assurance Officials on the influence of knowledge cluster on research and publication process in universities in North-West Geographical Zone, Nigeria.

4.2 Discussion of Findings

Based on the analysis of data collected for this study, the findings of the study as revealed, were discussed as follows. It was revealed that there was no significant difference between knowledge cluster strategy and accreditation of minimum academic standard. The findings of this study supported Ndirangu and Udoto (2011) that minimum academic standards form the baseline for entrenching quality university education, prescribes a profile of curriculum, human resources, structures, infrastructures, equipment and required facilities for establishing, governing and managing the university. On the other hand, the knowledge cluster strategy determines the value for collaboration, teamwork, knowledge sharing, crave for quality and continuous improvement of quality assurance activities between national and international universities of learning.

The second findings of this study revealed that there was no significant difference between knowledge cluster strategy and staff training and development. The findings of this study was in agreement with the assertion of Nonaka and Takeuchi, (2015) that knowledge cluster strategy promotes skills and competences of both employers and employees through among others brainstorming, sharing academic practice and knowledge clusters strategy. This implied that the application of advanced knowledge cluster strategy to quality assurance practices in Nigerian universities conserves knowledge capturing, structuring, managing and disseminating working experiences among workers of different capacities.



The third findings of this study revealed that there was no significant difference between knowledge cluster strategy and research and publication. The findings of this study was supported Obeidat, Masa'deh and Abdallah (2014) that educational research and publication emphasize on deepen investigations and inquiries about educational matters to create and stabilize value for more school investment and productivity "education product" and "operations" by spending a lot of resources. However, knowledge cluster strategy promotes the growth and success capable of enhancing the process of research and publication, the need for a codified system of management in corporate activities so as to make planning and organizing research activities to high quality products and reliable publication service with minimum cost to maximum outcome.

5. Conclusion and Recommendations

Quality assurance practices are determined by the extent to which knowledge cluster strategy is used in universities in North-West Geographical Zone of Nigeria. The findings of this study revealed that there was no statistical significant difference between accreditation of academic minimum standard, staff training and development as well as research and publication. The study recommended that: knowledge cluster strategy should be applied in universities of North-West Geographical Zone of Nigeria to standardize its operations through integration of course contents, course duration and curriculum compliance in universities in North-West Geographical Zone of Nigeria; the knowledge cluster strategy should be applied technically to improve staff training and development through academic conferences, seminars, workshops and in-service training; and the knowledge cluster strategy should be adopted to academically advance the process of research and publication through brainstorming on mentorship and conference supervision in universities in North-West Geographical Zone of Nigeria.

References

- Ajayi, I. A., & Akindutire, I. O. (2007). The unresolved issues of quality assurance in Nigerian Universities. *Journal of Sociology and Education in Africa*. 6(1) 66-99.
- Akinnuwesi, B. A., Odumabo, A., & Aribisala, B.S. (2020). Knowledge grid: An intelligent system for collaboration and knowledge management in Nigerian Universities. *Data Science Journal*, 19(2), 1-16. DOI: <http://doi.org/10.5334/dsj-2020-002>
- Alharithy, M. (2015). Knowledge management process in several organizations: Analytical study of modeling and several processes. *Procedia Computer Science*, 65(2015), 726 – 733.
- Ashbee, E. (2003). *Investing in education: The report of the commission on post school certificate in higher education*, Nigeria, Lagos: Government Printer.
- Babalola, J. B. (2003). Budget preparation and expenditure control in education. In Babalola, J. B. (ed.). *Basic textin educational planning*. Ibadan: Awemark Industrial Printers.
- Becker, G. A. (1962). Investment in human capital: A theoretical analysis. Columbia University and National Bureau of Economic Research. *Journal of Political Economy*, 5 (2), 9-49.
- Dubra, I. (2010). Investment in human capital: theory aspects, evaluation methods and research approaches. *Latvijas Universitātes raksti Ekonomika Vadības zinātne*, 75(8), 34-45.
- Jashapara, A. (2006). *Knowledge clusters strategy and culture, knowledge clusters strategy: An integrated approach*. UK, London: Prentice-Hall.
- Jumare, A. M. (2014). Application of knowledge management on the management of universities in North-West Zone in Nigeria. *Unpublished Ph.D Thesis*. Department of



- Educational Foundations and Curriculum, Faculty of Education. Submitted to the Postgraduate School ABU Zaria.
- Modebelu, M. N. & Duvie, A. N. (2015). Knowledge cluster strategy creativity elements expected of academics in Nigerian universities. Being a Paper presented at the 6th International Conference on E-Learning in the workplace at Belgrade Metropolitan University, Germany from 24 -25th September, 2015.
- Ndirangu, M. & Udoto, M. U. (2011). Quality of learning facilities and learning environment: challenges for teaching and learning in Kenya's public universities. *Quality assurance in education*. 19(3), 208-223.
- Nonaka I., & Takeuchi, H. (2015). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. UK, Oxford: Oxford University Press.
- National Universities Commission (2004). Appraisal of higher education policy options. *The Comet*. Abuja: NUC Documents. www.nuc.edu.ng
- National University Commission (2006). Course system and grade point average in Nigerian universities NUC, Abuja. www.nuc.edu.ng
- National Universities Commission (2014). Webometric Ranking of World Universities: Matters Arising. Monday Memo NUC, Abuja, 5(11) 1-10. www.nuc.edu.ng
- Obeidat, B., Masa'deh, R., & Abdallah, A. (2014). The relationships among human resource management practices, organizational commitment and knowledge management processes: A structural equation modelling approach. *International Journal of Business and Management*. 9(1), 9-26.
- Ogunbanwo, A. S. Okesola, J. O., & Buckley. S. (2019). Knowledge management awareness assessment in Nigerian tertiary institutions. *Direct Science F1000Research* 8:608, 2-10.
- Ohioenoya, J. O., & Eboreime, O. F. (2014). Knowledge clusters strategy practices and performance in Nigerian universities. *European Scientific Journal*, 10(16), 400–416.
- Olayiwola, S. (2007). Alternative model of funding for academic research in Nigerian universities. *Higher Education Quarterly*, 64: 149–160.
- Omotayo, F. O. (2016). Knowledge clusters strategy as an important tool in organisational management: A review of literature, library philosophy and practice, 1(*e-Journal*). 1(1) 23-31.
- Pawłyszyn I., Fertsch M., Stachowiak A, Pawłowski, G. & Oles'ków-Szłapka, J. (2020). The model of diffusion of knowledge of knowledge on industry 4.0 in Marshallian clusters. *Sustainability*, 12 (3815) 1-23.
- Porter, M. (2003). The economic performance of regions. *Regional Studies* 37(1), 545–546.
- Ramakrishnan, U., & Ya-Sin, O. (2012). *Intellectual capital*. Basingstoke: Macmillan Business Press.
- Robert, B. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economic*, 106 (2), 407-414.
- Ruggles, R., & Holtshouse, D. (1999). *The knowledge advantage*. UK, New Hampshire: Capstone Publisher.
- Salman, J. (2009). Tertiary education in the 21st century: Challenges and opportunities. *Higher Education Management* 13:2, 105-129.
- Udih, M. (2017). The link between performance and knowledge management in Nigerian public tertiary institutions. *International Journal of Humanities and Social Science* 7(4), 211-219.



Wei-Chong, C., Yuen, Y., & Chew-Gan, G. (2014). Knowledge sharing of academic staff: A comparison between private and public universities in Malaysia. *Library Review*, 63(3), 203-223.