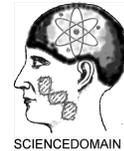




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Application of Knowledge Management Skills in University Administration in Nigeria: Evidence from Heads of Departments

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Authors' contributions

This work was carried out in collaboration between all authors. Author BAA designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript and managed the analyses of the study. Author FDN managed the literature searches and wrote the literature review. All authors read and approved the final manuscript.

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ABSTRACT

This study examined heads of departments' application of knowledge management skills in university administration. One research question and one hypothesis were posed along the dimensions of knowledge management skills namely knowledge sharing, knowledge capturing, knowledge mapping and knowledge storing to guide the study. A descriptive survey design was adopted and a proportionate sample of 200 was drawn from a population of 274 HODs in the 4 federal Nigerian universities. Data were collected using a researcher-constructed questionnaire titled "Knowledge Management Skills and University Administration Questionnaire (KMSUAQ)". Data collected were analysed using descriptive statistics (Mean, X and Standard Deviation, SD) and Independent t-test. Results of the study revealed that HODs were effective in their applications of knowledge sharing and knowledge capturing, but were not effective in their applications of knowledge mapping and knowledge storing aspects of knowledge management skills in university administration. HODs apply knowledge sharing skill most and knowledge mapping skill

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least in university administration. Gender does not significantly influence HODs' application of knowledge management skills in university administration. In the light of these findings, it was recommended among others, that HODs should intensify efforts towards ensuring that measures are adopted whereby knowledge mapping and storing are explored always in their administration at the departmental level.

Keywords: Application; heads of departments; knowledge management skills; university administration.

1. INTRODUCTION

University education in countries like Nigeria has become a complex, challenging and arduous task in recent time. This emanated from the pressures occasioned by the changes in technology and globalization which have become the hallmark in world affairs. As a result, there are greater expectations from the universities as training points for high level manpower.

Education today is subject to the pressures of the market, where profound changes in competition have made institutions think like business organisations and behave like educational markets [1,2]. This underscores the need for proactive administration in universities where institutional leaders adopt measures aimed at adjusting themselves in developing strategies for the purpose of benchmarking and internationalizing their curricula. However, universities in Nigeria appear to be far behind their peers elsewhere in meeting the challenges posed by the present realities in global scheme of things. Perhaps, this accounts for their low ranking among other universities in the world. For instance, University of Benin, Nigeria ranked 1639 in the world in the year 2012 [3], while no Nigerian university ranked among the top 400 universities in the world in 2012 – 2013 as at June, 2013 [4]. University education has been bedeviled by institutional inadequacies engendered by poor governmental support, curricula that fall short of the expectations of the labour market, dilapidated infrastructure, administration that is more interested in pleasing the powers that appointed them than fulfilling the mission of the university, poor staff morale and weak academic culture [5]. Thus, the universities seem to be operating in such a way that their core missions, which are knowledge generation, dissemination and management, are not pursued appropriately. The consequence is that universities exist in name other than in quality.

However, there is a paradigm shift in university administration with the advent of information and communication technology (ICT) twelve years ago in Nigeria. Universities are today making substantial investments in ICT to meet their goals with a view to increasing the effectiveness of their operations. They are striving to, if not to meet up with their peers in other parts of the world, but at least, to stay not too far away from them. Even at that, the emphasis on change in the global environment puts knowledge management at the heart of what universities need to do to cope with today's fast changing environment [6].

Knowledge management, according to Kanagasabapathy, Radhakrishnan and Balasubramanian [7], is a managerial activity which develops, transfers, transmits, stores and applies knowledge, as well as providing the members of the organisation with real information to react and make the right decisions in order to attain the organisation's goals. To Horwitch and Armacost [8] it is the creation, extraction, transformation and storage of the correct knowledge and information in order to design better policy, modify action and deliver

results. The subject matter of knowledge management in organisations such as universities is not only about managing knowledge, but also extends to changing their entire academic cultures and strategies to approaches that value learning and sharing knowledge. Therefore, knowledge management tends to concern people, processes, culture and technology [9]. The knowledge to be managed includes both explicit, which is documented knowledge and tacit, which is subjective knowledge. Knowledge management skills including knowledge sharing, capturing, mapping and storing are required in the administration of organisations [10]. Knowledge sharing is a means by which an organisation obtains access to its own, and other organisation's knowledge. It involves primarily the processes through which knowledge is channeled between a source and recipient [11]. Knowledge capturing has to do with extracting knowledge or information from knowledge bases such as databases, filing cabinets and people's heads for future reuse. Knowledge mapping has to do with giving form, shape, modeling or constructing meaning to words, ideas, opinions, information, facts and abstract thoughts to literally make sense. Knowledge storing is a means by which organisations preserve knowledge so that other members of the organisation could retrieve it for future use without an interaction with the person who possesses such knowledge in the first place [12].

In particular, knowledge management skills are required in universities as institutions for knowledge generation and dissemination, and the extent these skills are applied determine the effectiveness of their administrations in realising their missions. The essence of knowledge management is to create new knowledge and timely apply such to maintain strategic and competitive advantage. Organisations - whether education or business - that succeed in knowledge management are those that view knowledge as an asset and most important resource for developing organisational norms and value, which support the creation and sharing of knowledge [13]. Knowledge management increases the ability of the universities to learn from their environment and incorporate knowledge into the academic processes by adapting to new tools and technologies. It is used to examine the overlapping and ongoing relationships among faculty, students, course and programmes in any school academic environment [14,1]. The value of knowledge management in universities relates directly to the effectiveness with which it enables staff and students to deal with the issues and situations of today with a view to effectively envisioning and creating their future.

Universities exist for creating, using and managing knowledge from their environment and adapting to knowledge from outside environment to meet teaching and learning challenges. The ability to do this is what places a university in a position to have an edge over others. The task of knowledge management appears to be more daunting at the departmental level. This is because; teaching and learning take place more at the departmental level, which demands knowledge sharing, capturing, mapping and storing. This calls for enormous skills to manage knowledge effectively and well versed in current developments in knowledge and information. In addition, the available knowledge and information at the disposal of HODs are required to be put to effective use. The heads of departments, made up of male and female lecturers (gender), are supposed to provide leadership by ensuring the smooth functioning of their departments through the discharge of responsibilities bordering on teaching/learning, research and other activities necessary for the realisation of the departmental objectives. Gender is used in this study to depict the sex classifications of heads of department who carry out administrative functions at the departmental levels in universities. Heads of departments are expected to coordinate generating of knowledge through research, senior staff mentoring of junior ones and manage them for the benefit of departmental staff, students and outsiders. However, their effectiveness in carrying out these tasks has not been ascertained. More so, the dearth of resources at their disposal has put

their knowledge management ability into serious jeopardy. Despite this, their effectiveness in applying knowledge management skills in their administration is yet to be established in this part of Nigeria. It is these issues that this study seeks to address. On this basis therefore, the problem of this study is posed as a question thus: How does HODs' application of knowledge management skills such as knowledge sharing, capturing, mapping and storing influence their departmental administration in universities in South-South zone of Nigeria?

2. RESEARCH QUESTION

To what extent do heads of departments apply knowledge management skills in university administration with regards to:

- Knowledge sharing
- Knowledge capturing
- Knowledge mapping
- Knowledge storing?

3. HYPOTHESIS

Gender does not significantly influence heads of departments' application of knowledge management skills in university administration in the aspects of:

- Knowledge sharing
- Knowledge capturing
- Knowledge mapping
- Knowledge storing.

4. LITERATURE REVIEW

Knowledge management encompasses the management of content as well as corporate education and training. With the increased growth in technology, universities, like other organisations are forced to implement some form of knowledge management programmes to have a competitive edge. A survey reported that 80 percent of organisations have some knowledge management efforts underway, 25 percent have chief knowledge or learning officer, and 21 percent have a knowledge management strategy that has been communicated to employees throughout the organisation [10]. This is a clear indication that knowledge management is a serious affair in organisations because their survival depends on it. However, knowledge management is important only to the extent that it enhances a university's ability and capacity to deal with, and develop in accomplishing their mission, gaining a competitive advantage, performing effectively and coping with change. Knowledge management ensures effective allocation of resources and staff, increases productivity without increasing the cost [1].

According to Bouthillier and Shearer [15], knowledge sharing is often a major preoccupation with knowledge management. It involves the transfer of knowledge from one or more person to another one or more. Although, knowledge can be acquired at the individual level, to be useful, it must be shared by a community.

Ranjan and Khalil, [1] reported that the rapid growth of emerging and cutting edge technologies coupled with knowledge management systems have led to the increased

adoption of new applications that includes ranking the institutions, assessing the quality of lecture delivery, assessing the programmes and courses, measuring the performance of students and faculty, tracking research and developments and enhancing faculty development. The integration of these applications enables the sharing of knowledge that is necessary for any institution's administrative effectiveness.

Research suggests that successful knowledge sharing involves extended learning process rather than simple communication processes, as ideas related to development and innovation need to be made locally applicable within the organisation [11]. While communications of knowledge is important, it is the processes through which knowledge is shared that determine whether organisational learning occurs, and therefore, whether knowledge sharing process was a success. Thus, findings showed that while managerial initiatives were sufficient in one aspect of its knowledge sharing efforts, more administrative resources would likely enhance outcomes [16].

Collison and Parcell [17] suggest that knowledge capture means capturing knowledge in such a way that it can be re-used. There needs to be a link between capturing knowledge before, during and after the event/project/task has been executed and in terms of accessing what has already been captured. Information Technology Construction Best Practice [18] reported that discussions about knowledge management usually refer to the need to capture one or both of two distinct types of knowledge – explicit and tacit. Explicit knowledge is the very factual information that is relatively easily documented, while tacit knowledge is the more subjective approaches people take in situations where there may be no single right or wrong answer. It is often the key to why a particular organisation is successful.

The capture of individual staff or groups' knowledge is vital for universities. Key decisions are made based on experience and knowledge which are usually shared informally. Through knowledge capture processes, universities could identify and leverage their organisational knowledge to enhance the value of their academic programmes. Findings by Hari, Egbu and Kumar, [19] revealed that capturing knowledge prevents the loss of critical knowledge due to retirement, downsizing and outsourcing; helps in problem solving, managing change, organisational learning, succession planning and innovation. It could also result to less duplication of work, faster and better problem solving, more efficient team work, more innovation and better ideas, improvement in staff motivation and management support. However, leadership and a committed effort are needed to make knowledge capturing successful.

Knowledge mapping [20] is the process, methods and tools for analysing knowledge areas in order to discover features or meanings and to visualize these in a comprehensive, transparent form so that the relevant features of an organisation can be highlighted. Knowledge maps are created by transferring certain aspects of knowledge into a graphical form that is easily understandable [21].

Okada and Shum [22] reported that knowledge mapping can be a useful strategy for students and educators to construct meaning from the oceans of data, information and opinion. Due to the widespread uses of new technologies and open learning resources, people have greater access to information, interaction and reconstruction than ever before. For that, knowledge mapping can be used to organise better the process of learning, research teaching and producing materials. Empirical findings indicate that knowledge mapping has been successfully used in education to facilitate students' learning [23].

Simon [24] reported that people are perhaps the most effective means for storing the organisation's experience. Individuals in the process of performing their functions, generate knowledge that largely remains in their heads. However, research findings showed that no one particular member of an organisation is likely to be the sole repository of any organisation's memory, networks of individuals have been found to be powerful medium of storage and retrieval of the organisation's explicit knowledge [25]. Researchers such as Hansen, Nohria and Tierney [26] and Krackhardt [27] found that social networks play an important role in accumulating and storing knowledge in the organisation and allowing individuals to locate and access this knowledge. Mere existence of knowledge somewhere in an organisation is of little benefit; it becomes a valuable asset only when it is stored and accessible [28]. Research findings had it that an organisation's ability to preserve knowledge has an important consequence for its performance [25]. The frequency of use of an organisation's knowledge can be applied as an indicator of the effectiveness of stored knowledge [29].

Studies by Ackerman and McDonald [30], and Anand and Glick [31] found that computer-based technologies play a key role in storing large amount of knowledge and making them accessible. These technologies such as electronic databases and electronic bulletin boards are widely used examples of such systems in order to collect, store and make explicit knowledge accessible.

From Nigerian perspectives, Krubu and Krub [32] found that there is relatively high level of awareness of the need to scientifically manage knowledge in Nigeria, and that the level of implementation of knowledge management is below 40 percent judging from the analysis of data, objective evaluation of responses from face to face interviews, direct observations and assessment of physical facilities on ground.

Uchendu, Osim and Akuegwu [33] found that knowledge management in terms of knowledge sharing and mapping has significant relationship with university lecturers' job performance in Cross River State, Nigeria, and that the state of lecturers' job performance in universities in Cross River State, Nigeria is a function of how knowledge is managed in the universities.

Ugwu and Ezema [34] found that academic librarians in Nigerian universities require skills for knowledge management strategy, and that they require quantitative metric skills for the application and measurement of knowledge management and skills for mapping out processes are equally essential in developing strategy for knowledge management.

5. METHODOLOGY

The design adopted for this study was descriptive survey. The adoption of this design was predicted on the fact that the study involved the use of representative sample from a population of the subjects (HODs) and thereafter draw conclusion based on data analysis. The study covered 4 federal universities located in South-South geopolitical region of Nigeria, selected purposively. The population of the study consisted of 274 Heads of Departments in the 4 universities. Proportionate sampling technique was used based on unequal population of male and female HODs to select 200 of them, which is 50 HODs from each university.

A researcher-constructed instrument called "Knowledge Management Skills and University Administration Questionnaire (KMSUAQ)" was used to collect data for analysis. It had two

sections – A and B. Section A sought information on gender (sex) which is a demographic variable of the respondents. Section B contained 24 items, 6 of them measured each of the four variables isolated for the study. Each item had 5 response options, where 1 was the least score and 5, the highest score. The respondents were required to rate their application of knowledge management skills in university administration by ticking one of the 5 options against each item.

The instrument was face-validated by experts in measurement and evaluation. The reliability of the instrument was established through a trial test. 50 copies of KMSUAQ were administered to 50 HODs in a university not used for this study. The scores obtained were analysed using Cronbach Alpha Method, which also provides a measure of construct validity of the instrument. The coefficients obtained were 0.72 for knowledge sharing, 0.82 for knowledge capturing, 0.88 for knowledge mapping and 0.90 for knowledge storing. These figures confirmed that the instrument was reliable for use in achieving the research objectives.

The instrument was administered personally by the researchers and research assistants to the respondents in their various institutions. Copies of the questionnaire were filled and returned on the spot. All the 200 copies of the instrument were retrieved and found valid for analysis. Thus, a 100 percent returns rate was achieved. Descriptive statistics (mean and standard deviation) and Independent t-test statistical analysis were used to analyse the data collected. Summaries of results were presented in tables, followed by interpretations.

6. RESULTS AND DISCUSSION

6.1 Research Question

To what extent do HODs apply knowledge management skills in university administration with regards to:

- Knowledge sharing
- Knowledge capturing
- Knowledge mapping
- Knowledge storing?

The independent variable is HODs' application of knowledge management skills, viewed from 4 dimensions, while the dependent variable is university administration. Descriptive statistics (mean and standard deviation) are used to answer the research question. Grand mean(x) for each variable was computed by finding the average of aggregate scores for items measuring each variable. These grand means were then aggregated and averaged to obtain the overall grand mean(x) of 3.04.

Table 1. Mean (X) and standard deviation (SD) of responses by HODs in their levels of effectiveness in the application of knowledge management skills in University administration

N =200				
S/No	Item	X	SD	Decision
	Knowledge Sharing.			
1.	Encourage voluntary transfer of knowledge about teaching programmes among staff.	2.94	1.38	L
2	Encourage individual staff to seek required knowledge on research activities from others.	3.23	1.16	H
3	Operate database for access to students' records and use by departmental staff.	3.20	1.12	H
4	Transfer tacit (personal) knowledge about departmental matters through story telling.	2.98	1.29	L
5	Use web-based technology in assigning departmental responsibilities.	2.95	1.49	L
6	Encourage exchange of ideas on the use of available resources through direct person to-person interaction.	3.55	1.27	H
	Grand Mean(x) and SD	3.14	1.29	L
	Knowledge Capturing			
7	Create multimedia representation of departmental tasks and their relationships.	3.02	1.32	H
8	Use diary to record experiences and feelings of staff about daily operations of departments.	2.73	1.38	L
9	Encourage purposeful reflection so as to assist staffs develop generalization about departmental activities.	3.29	1.19	H
10	Convert departmental objectives into tacit learning so that staff can use them.	2.92	1.23	L
11	Initiate modalities to capture staff's individual knowledge about departmental administration.	3.38	1.25	H
12	Encourage staff to develop departmental activities into new strategies for task performance.	3.20	1.19	H
	Grand Mean(x) and SD	3.09	1.26	L
	Knowledge Mapping.			
13	Show the existing and desired relationship between concepts and organise ideas into categories.	2.85	1.26	L
14	Use of mental models to perceive, simplify and make sense out of complex systems.	3.23	1.28	H
15	Define the sequence of tasks which link actions within and across departmental functions to achieve specific goals.	3.21	1.04	H
16	Measure relationships between staff groups and knowledge processing entities in departmental affairs.	2.63	1.02	L
17	Explore beliefs of individual staff or groups in order to establish cause and effect relationship.	2.97	1.04	L
18	Search for natural, simple and powerful methods for describing and analysing the flow of departmental information.	2.79	1.27	L
	Grand Mean(x) and SD	2.95	1.15	L

Knowledge Storage.				
19	Safeguard important knowledge in computers for future use among departmental staff.	3.29	1.17	H
20	Ensure storage of tacit knowledge by individual staff within themselves.	2.79	1.27	L
21	Store vital departmental record in file cabinets.	2.90	1.23	L
22	Store knowledge for network and reuse purposes for departmental benefit.	2.93	1.21	L
23	Safeguard knowledge about the department for transfer to individual staff.	2.90	1.08	L
24	Store knowledge in the department to encourage inter-group access among staff.	3.14	1.10	H
	Grand Mean(x) and SD	2.99	1.18	L
	Overall Grand Mean(x) and SD	3.04	1.22	H

**Decision Range: Mean(X) score of 3.04 and above is regarded as high (H) (effective), while mean score (X) below 3.04 is regarded as low (L) (not effective).*

By this result, mean ratings for variables from 3.04 and above are regarded as high level of application of knowledge management skills and effective, while mean ratings for variables below 3.04 are regarded as low level of application of knowledge management skills and not effective. Summaries of the results are presented in Table 1.

The results in Table 1 revealed that the overall grand mean score of HODs' application of knowledge management skills in university administration is 3.04 with a standard deviation of 1.22. This forms the basis for decision to determine the level of effectiveness of Heads of Departments in their applications of knowledge management skills in university administration. This means that HODs are high (effective) in their applications of knowledge sharing and knowledge capturing aspects of knowledge management skills in university administration. On the other hand, HODs are low in their applications of knowledge mapping and knowledge storage aspects of knowledge management skills in university administration. However, item-by-item analysis indicated that HODs are high (effective) in 3 items (numbers 2, 3 and 6, with a grand mean score of 3.14) in their application of knowledge sharing, 3 items (numbers 9, 11 and 12, with a grand mean score of 3.09) in knowledge capturing, 2 items (numbers 14 and 15, with a grand mean score of 2.95) in knowledge mapping and 2 items (numbers 19 and 24, with a grand mean score of 2.99) in knowledge storing.

Conversely, the results further revealed that HODs are low (not effective) in 3 items (numbers 1, 4 and 5) in their application of knowledge sharing, 3 items (numbers 7, 8 and 10) in knowledge capturing, 4 items (numbers 13, 16, 17 and 18) in knowledge mapping and 4 items (numbers 20, 21, 22 and 23) in knowledge storing.

From these results, the knowledge management skill HODs apply most in their administration in universities is knowledge sharing, followed by knowledge capturing while the least is knowledge mapping, followed by knowledge storing. This means that HODs are best in applying knowledge sharing skill than any other knowledge management skill in university administration.

6.2 Hypothesis

Gender does not significantly influence HODs' application of knowledge management skills in university administration in the aspects of:

- Knowledge sharing
- Knowledge capturing
- Knowledge mapping
- Knowledge storing.

The independent variable is gender while the dependent variable is HODs' application of knowledge management skills in university administration. Independent t-test statistical analysis is used to analyse data obtained. Summaries of the results are presented in Table 2.

Table 2. Independent t-test analysis of the influence of gender on HODs' application of knowledge management skills in university administration

Variables	Male, N =126		Female, N=74		t-value
	X	SD	X	SD	
Knowledge mapping	19.07	5.30	18.79	4.59	0.371
Knowledge capturing	18.21	5.19	19.07	4.64	-1.178
Knowledge mapping	17.62	4.61	17.65	3.99	-0.046
Knowledge storing	17.75	4.68	18.28	4.16	-0.817

Not significant at 0.05; df = 198; Critical t-value = 1.972

Results in Table 2 revealed that gender does not significantly influence HODs' application of knowledge management skills in university administration with respect to knowledge sharing ($t = 0.371$, $P = .05$), knowledge capturing ($t = -1.178$, $P = .05$), knowledge mapping ($t = -0.046$, $P = .05$), and knowledge storing ($t = -0.817$, $P = .05$). These figures are found to be less than the critical t-value of 1.972 at 0.05 alpha level of significance and 198 degrees of freedom. Thus, the null hypothesis is retained while the alternate hypothesis is rejected.

Further examination of the results indicated that male HODs have higher mean application of knowledge sharing ($X = 19.07$) than their female counterparts ($X = 18.79$) in university administration. Female HODs have higher mean application of knowledge capturing ($X = 19.07$), knowledge mapping ($X = 17.65$) and knowledge storing ($X = 18.28$) in university administration than their male counterparts, but these did not warrant significant difference.

6.3 Discussion

The results of the analysis of research question in Table 1 revealed that the knowledge management skill heads of departments apply most in university administration is knowledge sharing, followed by knowledge capturing. However, their least level of application of knowledge management skills in university administration is found in knowledge mapping and storing, which interestingly, they exhibit at low levels of effectiveness.

By implication, this result generally has it that heads of departments are effective in their applications of knowledge sharing and knowledge capturing. That is, the way and manner they apply these skills yield tangible results in the administration of universities at the

departmental level. Conversely, they are not effective in knowledge mapping and knowledge storing aspects of knowledge management skills in university administration. That is, the way and manner they apply these skills do not yield the expected results in the administration of universities at the departmental level.

A plausible explanation for this finding is that heads of departments are in a position where they come across new information, books, research findings, interact with staff and students, and liaise with people outside the department. From these myriad sources, the HODs are likely to acquire new experience and knowledge with which they use in handling departmental responsibilities effectively. Furthermore, knowledge management practice emphasizes the creation of new knowledge and the timely application of organisational knowledge to maintain strategic advantage [7]. Therefore, virtually all HODs would like their departments to be placed above others, and as such, they are likely to do everything possible to achieve this feat, being mindful of the inherent benefit. Thus, they see knowledge management as a veritable means of accomplishing this desire, and as such work towards achieving success in it.

As a follow up, HODs being grassroots' leaders only handle knowledge related to their fields of learning, which may not be too large for an individual to manage. Thus, any knowledge generated by the department or tapped from outside sources is likely to be put into effective use.

This finding also revealed that HODs make use of knowledge sharing in their administration most than any other knowledge management skill. The reason for this could be that their offices are meeting points for staff, students and outsiders, and as such social interaction remains the hallmark. This interaction enables them to acquire new experiences, ideas, information and knowledge which enhance successful departmental administration. In addition, university environment is considered free for people to pursue and acquire knowledge, and so, people consider it safe to share knowledge. This position corresponds with the views of Ranjan and Khalil [1] that the academic environment in general is considered trustful in the sense that no one is hesitating nor being afraid of publishing knowledge. The fact that universities deal with knowledge production and dissemination, which enhance the productive capacity of the present and future generations, places the HODs in a position to manage knowledge effectively. HODs hold positions which are strategic in university administration. This accounts for the reason why university authorities place much regard on them for the fulfillment of university mission. Therefore, the way and manner knowledge is managed at the departmental level paints the picture of what it will be at the institutional level.

Results of the hypothesis revealed that gender does not significantly influence HODs' application of knowledge management skills in university administration. That is, male and female HODs apply knowledge management skills in university administration the same way and manner. This same result has it that female HODs have higher mean application of knowledge management skills than their male counterparts. However, this difference does not warrant any significant influence that requires certain considerations in the appointment of HODs.

This finding suggests that gender does not determine how HODs apply knowledge management skills in university administration. The fact remains that application of knowledge management skills such as knowledge sharing, knowledge capturing, knowledge mapping and knowledge storing in university administration does not call for any special qualification bothering on sex. Any person can use them. The implication is that HODs

should be appointed based on individual lecturer's track record of achievement in handling students and staff matters, as well as their experience in generating and managing knowledge, and not on gender.

This outcome can be explained from the fact that since male and female HODs are exposed to the same type of training, perform the same functions, work in the same university environment and have access to knowledge as leaders, they are likely to perform the function of applying knowledge management skills in university administration without a difference. Closely akin to this, both categories of HODs are given the same support by university administration at the centre [35]. This finding corresponds with the position of Plato in Ekanem [36] that men and women have equal ability and can attain the same height, given the same opportunity.

7. CONCLUSION

The conclusions drawn from this study's findings were: Heads of departments were high (effective) in their applications of knowledge management skills such as knowledge sharing and knowledge capturing. In contrast, they were low (not effective) in their applications of knowledge mapping and knowledge storing in university administration at the departmental level. This has made universities in Nigeria to be functioning despite glaring inadequacies. The knowledge management skill applied most by HODs in university administration was knowledge sharing, followed by knowledge capturing. This is a clear indication that they tap knowledge domiciled in the department and outside, which they apply in piloting the departmental affairs. Knowledge mapping and knowledge storing had the least application and HODs exhibited low levels of effectiveness in them. Gender does not significantly influence HODs' application of knowledge management skills in university administration. Therefore gender is not a factor in using knowledge management skills to handle university responsibilities at the departmental levels.

RECOMMENDATIONS

Arising from the findings, the following recommendations were made:

- Heads of departments should intensify efforts in making knowledge mapping a top priority. This will engender organising ideas into categories which will enable them to be flexible and creative in thinking and reasoning. With this, they are placed in a better pedestal to explore the belief of individual staff or groups for the purpose of establishing cause and effect relationship in departmental matters.
- HODs should work towards ensuring that knowledge storing is given a new lease of life. They should accomplish this by investing in ICT resources to safeguard vital departmental knowledge. This will help in storing appropriately, important departmental records and information which can be reused when the need arises. In addition, there should be proper documentation of knowledge within the department.
- HODs should initiate modalities whereby stored knowledge and information can easily be accessible. This is necessary because any knowledge or information that is not accessible is of no benefit to mankind. Knowledge creates useful impact in departments only when they are accessed and utilized by staff and students.
- HODs should make provisions for more capturing of knowledge. Where knowledge capturing is taken to a greater height, it will ensure proper acquisition of knowledge

and allow cross fertilization of ideas. This will enhance research productivity of staff and also aid proper discharge of teaching responsibilities.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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