

Impact of Information Literacy Skills on Academic Staff Research Productivity in Nigerian Federal Universities

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Abstract

The study examined the influence of information literacy skills on academics research productivity in federal universities in Nigeria. The study adopted the descriptive survey research design. Multistage sampling technique was used to select one thousand one hundred and fifty-seven (1,057) academic staff members from federal universities in the six geo-political zones of Nigeria. The instruments used for data collection were: Information Literacy Skills Acquisition Scale ($\alpha= 0.83$), Information Literacy Skills Scale ($\alpha= 0.92$) and Research Productivity of Academic Scale ($\alpha=0.91$). Eight hundred and seventy-three (873) copies of questionnaire were completed, returned and used in the study which represent (83%) response rate. Three research questions were answered and data were analysed using descriptive statistics. The result shows that the academic staff acquires information literacy skill mostly through attending workshops/seminars, self-taught, assistance from other colleagues, trial and error, guidance from library staff and faculty/departmental training. Also, the analysis establishes the fact that the research productivity of the academic staff in Nigerian federal universities is higher in journal publications, technical reports, conference papers, working papers and occasional papers. However, the research productivity of the academic staff in Nigerian federal universities is lower in textbook publications, monographs, patents and certified inventions. The finding, however, shows that the mean scores of each of the seven components tested under the information literacy skills is higher than the mid-point scores of 2.5 on a scale of five. Therefore academics in Nigerian federal universities possessed high information literacy skills based on the overall mean scores. Information literacy is considered an important element in educational and professional settings in particular, the academic environment. The result of this research study has raised some implications for implementation of information literacy skills programmes to improve quality and quantity of academics research productivity in Nigerian universities.

Keywords: Research productivity, Academic staff, Information literacy skills, Nigeria.

1. Introduction

Nigerian higher education began with the establishment of the Yaba Higher College by the colonial government in 1934; and the University College Ibadan, which was established in 1948, and later metamorphosed into the University of Ibadan in 1962. Presently, there are one hundred and twenty five universities in Nigeria. Of this number, 37 are state-owned 50 are private universities, while 38 are run by the federal government (NUC, 2011). Most of the research works in Nigeria occur in the universities. Indeed, research production has become essential for university success and prospects of promotion of academics (Bako, 2005; Aniedi and Effiom, 2011).

At the centres of intellectual and scholarly research are academics that are expected to show interest in the creation, dissemination as well as preservation of knowledge. Academics are lecturers ranging from graduate assistant cadre to professorial cadre in Nigerian universities context (Okebukola, 2002). McCabe and McCabe (2000) note that academic staff members in any higher institution, especially universities, are provided the opportunity to focus on an area of inquiry, develop a research programme and later share the knowledge with students and others in the drive to develop professional skills and impact on a field and society, as a whole. Research provides a good platform for academic staff members to become successful academics. This is because research develops academic knowledge and reinforces the skills needed for effective knowledge transfer. It also inspires academics towards hard work, fills the gaps of previous researches and creates an opportunity for future research.

Quality research exposes academics to current information and sharing of research results with others. The significance of research in the academia is that it enables academics to share insight, demonstrate academic scholarship and gain recognition for creative thinking (Lertputtarak, 2008). Yusuf (2005) notes that “publish or perish” is a popular cliché among academics in the Nigerian university settings. This phrase underscores the importance attached to research and publication in any university. Research occupies a critical role in promoting the prosperity of a nation and its citizens’ well-being. In universities, recognition and advancement of individual academic staff members depend largely on the quantity and quality of their research productivity. Existing studies have dealt with academics’ research productivity with variables such as institutional size, academic status, age, gender, and others latent variables such as self-knowledge, self-efficacy and information utilization skills but these studies have not sufficiently revealed the influence of information literacy skills on academics research productivity.

As the volume of information is constantly increasing, search skills are required not only in order to gain access to the available information resources, but also to sift from the large quantity and utilise the most appropriate information resources. Pezeshki-Rad and Zamani (2005) assert that the real challenge of our time is not producing information or storing information, but getting people to gain and use information resources. To gain access and use these vast resources effectively, information users must learn to overcome information anxiety in order to explore the available information to enable them interpret and utilise information for rational decision-making. Analysing, interpreting and presenting information for use in any environment is an essential skill users of information resources should possess if there to be relevant. Hence, being information literate is fundamental to the use of information resources in the knowledge society (Braaksma, 2004).

Information Literacy (IL) is the ability to define one’s information needs and then to access, evaluate, process and use retrieved information strategically. Unfortunately, the concept and practice of IL has not gained ground at grass root levels in the developing countries (American Library Association (ALA), 1989). Case (2007) refers to Julien (2001) in defining information literacy as the ability to make efficient and effective use of information sources. Information literacy includes having the skills to not only access information, but also to ascertain its veracity, reliability, bias, timeliness, and context. IL is important in the contemporary environment of rapid technological change and proliferation of information resources. Information and communication technology (ICT) advancements and the use of electronic resources, especially the Internet promises to improve the flow of information to research and academic communities (Manda, 2005).

As users of information community, academic staff members are faced with diverse, abundant information choices in their pursuit of knowledge because of the complexity of information sources and formats. This poses new challenges for academic staff members in evaluating and understanding the content. The uncertain quality and expanding quantity of information pose big challenges for any society. It is evident from literature that access to information resources can immensely improve academics’ research productivity. However, the nagging challenges such low information literacy skills among academics in developing countries as reported in literature can be noted; thus, the need to examine the influence of information literacy skills on research productivity of academic staff in Nigerian federal universities.

1.2. Objectives of the study

1. Investigate how academics acquire their information literacy skills;
2. Determine the information literacy skills possessed by academics staff in Nigerian federal universities; &
3. Examine the level of research productivity of the academic staff in Nigerian federal universities.

1.3 Research questions

The study will answer three research questions derived from the general and specific objectives.

1. What methods do academic staff members use to acquire information literacy skills?
2. What are the information literacy skills possessed by academic staff members in Nigerian universities?
3. What is the level of research productivity of the academic staff in Nigerian federal universities?

1.4 Hypothesis

There is no significant relationship between information literacy skills and research productivity of academic staff in Nigerian federal universities.

2. Literature Review

Various information literacy standards such as ALA, 1989; SCONUL, 1999; ACRL, 2000) require that participants who have completed certain levels of education are expected to have a high level of information literacy skills. In other words, individuals with higher education levels are expected to have different information literacy skill levels. In support of this view, Brand-Gruwel, Wopereis and Vermetten (2005) classified participants with higher educational levels as experts and those with lower educational levels as novices in examining their experiences in information problem-solving process and they found differences in their skills. Access without skills is not useful; so the acquisition of information literacy skills becomes a basic need of every citizen. According to the criteria from the Southern Association of Colleges and Schools (SACS) (2000), libraries and learning resource centres should provide point-of-use instruction, personal assistance in conducting library research, and traditional reference services. This should be consistent with the goal of helping students (information users) to develop information literacy skills. There are evidences which indicate that academics are readily using online databases made available by their libraries in Nigerian universities (Ehikhamenor, 2003; Aduwa-Ogiegbaen and Stella, 2005; Adogbeji and Toyo, 2006; Ureigho, Oroke and Ekruyota 2006; Osunade, Phillips and Ojo 2007; and Popoola 2008). Also, there is empirical fact that frequent Internet use for information retrieval and communication is associated with the increase in publication production by academics with respect to both quality and quantity (Ergart, 2002; Kyrillidon, 2001; Lin, 2001; Zhang, 2001; Nawe, 2005; Barjak, 2006; Brown, Found, and McConnell, 2007; Rowlands and Olivieri, 2006; Research Information Network, 2011; 2009). However, the lecturers' understanding of the influence of improved access to digital information resources in general is limited, to say nothing of the mechanisms that mediate between the increased provision of digital material and its use to scholarly work.

According to Idiodi (2005), information literacy skills acquisition is an aspect of information literacy and may be seen as the process of gaining the tools that assist the development of information literacy in an individual. Information literacy implies the intellectual capabilities involved in using information, as distinct from the technical know-how required for using information technologies that hold or deliver data. This latter ability can be characterised as information technology literacy. Hargittai (2002), in his study of online skills defines skill as the ability to complete a task and the amount of time spent for completing it. Academics with low information literacy skill may spend too much time retrieving information owing to problems they may encounter when seeking information especially in electronic information resources.

To retrieve information in the open web, not only formal information skills are needed but substantial information skills (Gui, 2007) who observed that sophisticated computer skills do not automatically translate into skills in search and retrieving of information (Thomas, 2004). However, some studies, for example, Kinengyere (2007), found out that available information is not necessarily accessed and used by users. The study shows that the availability of information does not necessarily mean actual use because the users may not be aware of the availability of such resources, they do not know how to access these resources, or do not know what the resources offer. Majid and Abazova (1999) conducted a study on the relationship between computer literacy of academic staff and their use of electronic information sources. The study revealed that a statistically significant relationship was found between computer literacy and the use of electronic information sources and services. The study further revealed that computer literate academics use electronic information sources more frequently.

3. Methodology

The study was limited to federal universities in Nigeria in the six geo-political zones and only academic staff members who were faculty based and teach were included in the study. The study adopted a multi-stage sampling procedure. First, the universities were grouped into the existing six geo-political zones in Nigeria. Secondly, two universities were randomly selected from each of the six geo-political zones. The selection resulted in twelve (12)

universities. The population of the study was ten thousand, five hundred and seventy-three (10,573) of only academic staff members who teach. Third, a sampling frame of 10% of academics in each of the universities was selected giving a total of one thousand and fifty-seven (1,057) an equivalent of 10% of the legitimate population. In order to generate the 10% the sample an average of 10% of the academics in each of the universities selected were sampled covering four faculties. Using the quota sampling based on specified proportion sample size of 10%. Finally, the accidental (availability) sampling technique was employed to select each of the respondents from the quota allotted to each of the faculties in the selected universities. The instrument used to collect data for this study was a questionnaire. The research questions were analyzed using descriptive statistics, such as mean, standard deviations and variance, while the hypothesis was tested with Pearson Correlation Coefficient, Analysis of Variance (ANOVA) at 0.05 level of significance.

4. Results and Discussion of Findings

4.1. What method do academic staff members use to acquire information literacy skills?

The result in Table 1 shows that the academics in Nigerian universities acquired information literacy skills through attending workshops/seminars (N=853; 98%), self-taught (N=744; 85%), assistance from other colleagues (N=714; 82%), trial and error (N=645; 74%), guidance from library staff (N=1050; 73) and faculty/departmental training (N=610; 70%). Hence, it could be inferred that academic staff acquire information literacy skill mostly through attending workshops/seminars, self-taught, assistance from other colleagues, trial and error, guidance from library staff and faculty/departmental training, which was the least.

Table 1: Method of acquiring of information literacy skills in the universities

S/N	How do acquire information literacy skill?	Yes	No
1.	By trial and error	645 (97.8%)	19 (2.2%)
2.	Assistance from my colleagues	714 (81.8%)	159 (18.2%)
3.	Guidance from library staff	633 (72.5%)	240 (27.5%)
4.	Self-study (user's guide)	744 (85.2%)	129 (14.8%)
5	Training offered by my faculty/department	610 (69.9%)	263 (30.1%)
6.	Formal education	873 (100%)	Nil
7.	Attending workshops/seminars	853 (97.7%)	20 (2.3%)
8.	Attending IT programme	853 (97.7%)	20 (2.3%)

N = 873

4.2 What is the level of information literacy skill possessed by academic staff members in Nigerian universities?

Information literacy skills of the academics in the study was measured by seven components, namely: ability to recognise a need for information resources (Ability 1), ability to distinguish potential information resources (Ability 2), ability to construct strategies for locating information (Ability 3), ability to compare and evaluate information obtained from different sources (Ability 4), ability to locate and access information resources (Ability 5), ability to organise, apply and communicate information (Ability 6) and ability to synthesize and build on existing information (Ability 7). See Table 2.

Table 2: Information literacy skills possessed by academics

S/N	Information literacy skills	Mean	Mode	Std. D
1	Ability to recognise a need for information resources.	2.93	3	0.271
2	Ability to distinguish potential information resources	3.14	4	0.425
3	Ability to construct strategies for locating information	2.85	2	0,399
4	Ability to compare and evaluate information obtained from different sources.	2.98	3	0.467
5	Ability to locate and access information resources	3.01	3	0.463
6	Ability to organize, apply and communicate information	2.83	3	0.376
7	Ability to synthesize and build on existing information	2.98	3	0.383
Overall Mean Score		X= 2.06; SD = 0.38		

N=873

As indicated in table 2 the response to information literacy skills shows that respondents with ability to distinguish potential information resources skill had the highest number of mean score of 3.14. This is closely followed by respondents with ability to locate and access information resources (3.01), while respondents with ability to synthesize and build on existing information obtained from different sources have mean score of 2.98. However, respondents with skills to organize, apply and communicate information have the lowest mean of 2.83. The finding, however, shows that the mean scores of each of the seven components tested under the information literacy skills is higher than the mid-point scores of 2.5 on a scale of five. Therefore academics in Nigerian federal universities possessed high information literacy skills based on the overall mean scores.

4.3. What is the level of research productivity of the academic staff?

In order to determine the level of research productivity of the respondents within a 3 years period (2009-2011), average score of their productivity was computed. In Nigeria, university regulations state that academic staff members are to be evaluated for promotion every three years. The result shows that six hundred (600) representing (65%) of the respondents had articles in learned journals. This result strongly confirms the culture of publish or perish that is a popular cliché among academics in Nigerian university settings. Five hundred and thirty-one representing (60.8%) had conference papers. Also, two hundred and thirty six (236) respondents representing (27%) three hundred and twenty (320) respondents representing (36.7%), had chapters in books, while three hundred and twelve (312) representing (35.7%), had working papers. However, only sixty-four (64) respondents (7.3%) had patents, in terms of invention. What this means is that copyrighted inventions were low among academics in Nigeria. Thus, the analysis establishes the fact that the research productivity of the academic staff in Nigerian federal universities is higher in journal publications, technical reports, conference papers, working papers and occasional papers. Furthermore, the research productivity of the academic staff in Nigerian federal universities is on the average in chapters in books, scientific peer-reviewed bulletins and patents. However, the research productivity of the academic staff in Nigerian federal universities is lower in textbook publications, monographs, patents and certified inventions. See Table 3.

Table 3: Research productivity of the academic staff within three-year period

S/N	Research Outputs	Frequency N %	Mean	Median	Mode	Std. D
1.	Textbooks	236 (27.0%)	1.94	2.00	1.00	1.51
2.	Chapters in books	320 (36.7%)	3.56	2.00	1.00	2.92
3.	Co-authored textbooks	259 (29.7%)	2.23	2.00	1.00	1.65
4.	Patent & certified invention	73 (8.4%)	2.63	2.00	1.00	2.25
5.	Monographs	120 (13.8%)	2.93	2.00	1.00	2.62
6.	Occasional papers	301 (34.5%)	4.21	4.00	1.00	2.82
7.	Articles in learned journals	600 (68.7%)	4.99	5.00	2.00	2.30
8.	Technical reports	229 (26.2%)	4.26	4.00	8.00	3.18
9.	Scientific peer-reviewed	162 (18.6%)	3.33	2.00	2.00	2.65
10.	Conference papers	531 (60.8%)	4.79	4.00	4.00	3.51
11.	Patents	64 (7.3%)	3.18	3.00	1.00	2.60
12.	Working papers	312 (35.7%)	4.05	3.00	2.00	3.64
Overall Mean Score			X=3.51; SD = 2.64			

4.4 Hypothesis: There is no significant relationship between information literacy skills and research productivity of academic staff in Nigerian federal universities.

In order to test the relationship between information literacy skills and academics research productivity a sum of the mean scores of the seven components of information literacy skills was computed and correlated with the twelve (12) items in research productivity. The test of the hypothesis therefore revealed that there was a significant positive relationship between information literacy skills (ILS) and research productivity of academic staff members. The result on Table 4. shows a Pearson Correlation Coefficient (r) is =.473; df = 871; (P<0.05) calculated, which revealed a significant relationship between information literacy skills and academics research productivity. Consequently the hypothesis which states that there is no significant relationship between information literacy skills and academics research productivity is rejected.

Table 4: The relationship between information literacy skills and research productivity of the respondents

Variables	Mean	Std. Dev.	N	df	r	P	Remark
Information literacy skills	140.718	19.374			0.473		
Research productivity	40.9233	6.36215	873	871		.000*	Significant.

** Correlation is significant at the level of 0 .05 (2-tailed)

As a further test, Scheffe post hoc analysis was conducted, the table shows the summary of multiple regression of relationship of the seven components of information literacy skills on research productivity of academic staff (See Table 4.1, and Table 4.2). The seven components of information literacy skills were therefore relevant towards the determination of academic staff members' research productivity. The ANOVA source test in Table 4.22 revealed that the F-ratio for the regression is significant (F= 62.743; P< 0.05). This means that the R value of 0.581 is not due to chance.

Table 4.1: Summary of Multiple Regression of influence of the seven components of information literacy skills on research productivity of academic staff

R	R Square	Adjusted R Square	Std. Error Of the Estimate
0.581	0.337	0.332	5.290096

Table 4.2: ANOVA for the Regression of Research productivity

Source of Variance	Sum of Squares	Df	Mean Square	F	Sig
Regression	11897.632	5	1699.662	62.834	0.000*
Residual	23398.226	865	27.050		
Total	35295.858	872			

*Significant at $p < 0.05$

4.5. Discussion of Findings

The findings of this study reveal that 61% of the respondents claimed that their institution libraries did not organise information literacy skill training. This could be considered to be too high. Out of the 39% that reported that their libraries organised information literacy skill training, 26% stated that the training was done occasionally, 6.8% indicated that it was done annually; and 3.9% indicated that it was done quarterly. This result shows that most of the academic staff did not acquire information literacy skills through the training organized by their institution libraries. This finding is inconsistent with the position of Macgregor and McCulloch (2006) who reported in their finding that the goal of library training is to enable users' community to discriminate between useful and irrelevant information as well as engaging users with information management. In addition, the University of Auckland Academic Plan 2005-2007 (2004) canvassed that the university (library) aims are to provide its users with key, high-level generic skills like the capacity for lifelong critical, conceptual and reflective thinking, and attributes such as creativity and originality. Thus, it is the duty of library management to constantly organise information literacy skills programme in order to develop information literate users.

Also, 73% of the respondents claimed that they acquired skills through the guidance of library staff. This view was at variance with Ojedokun and Lumande (2005) assertion that, information literacy skills acquisition has not been accorded its position in Nigerian tertiary institutions. However, it is in agreement with the study of Kumar and Kumar (2008) in the colleges of Bangalore City on the perception and use of e-resources and the Internet by the engineering, medical and management argued that many of the students and faculty learn about the electronic information sources use either by trial and error or through the advice of friends. In the same vein, Mookoh and Meadows (1998) in South Korean universities reported that academic staff members were having difficulty in using information technology due to lack of suitable training staff.

On acquisition of information literacy skill through formal education, all the respondents indicated the affirmative. Workshops/ seminars and IT programmes with 98% of the respondents were ways they acquired information literacy skills while 70% acquired information literacy skill through training offered by their departments/faculties. The finding is line with the study of Baniontye and Vaskeviciene (2006), which reported that 90% of research libraries and 65% of public libraries in Lithuania provide regular formal training for their users. Most of the respondents (96%) agreed that they possessed the skill to recognise a need for information and that their ability to use of information resources has greatly influenced their research output. This finding aligned with the study of Chandraiah, Reddy and Madhusudan (2011) who opined that academics are in the habit of using e-resources for their teaching and learning and also for research activities.

This finding is in agreement with Arunachallam (1992), cited by Nwagwu (2007), while reporting on research productivity in developing countries. He opines that South Africa and Nigeria are the only two African countries

whose scholarly works dominate developing countries. According to him, 13% contributions in the 140,000 periodicals' titles listed in Ulrich's Directory of Science Serials are from South Africa and Nigeria. But Aina and Mabawonku, (1998) differ. According to them, Nigeria has the highest proportion of rejected papers in Africa out of numerous papers submitted to the African Journal of Library, Archives and Information Science (AJLAIS) for publication.

However, the research productivity of the academic staff in Nigerian federal universities is lower in textbooks publication, chapter in books, monographs, patent and certified inventions. The reasons for low productivity in these listed items may be due to finance and time constraints as indicated in problem faced by academics when embarking on research activities earlier in this study. In line with this, the acquisition record of University of Lagos library shows that 68% of the library collections of both books and serials were foreign collections.

5. Conclusion and Recommendations

The research has shown that academics information literacy skill acquisition was reported low in Nigerian academic libraries and, where there is ILS training, it comes up occasionally. And that they acquired basic information literacy skills through attending workshops/seminars, trial and error, through the help of their colleagues, and through the guidance from library staff. Also, the result shown that academics possessed high information literacy skills, which include ability to recognise a need for information resources, distinguish potential information resources, construct strategies for locating information, compare and evaluate information obtained from different sources, locate and access information resources, organise, apply and communicate information, and ability to synthesize and build on existing information and these had greatly influenced their research productivity. However, academics' research productivity in Nigerian universities was reported high in journal publications, technical reports, conference papers, working papers and occasional papers while on the downside in textbook publications, chapters in books, monographs, patents and certified inventions. This could be as a result of financial constraint.

From the findings of this study, it could be concluded that Nigerian academics possess information literacy skills. They could recognize a need for information resources, distinguish, potential information and deploy the resources appropriately. The availability and accessibility of information resources aid research productivity of academics in Nigerian federal universities. Based on the findings of this study, it could be recommended that there should be continuous training and retraining of academics on information literacy skills acquisition and adequate provision of information resources in their various university libraries. There should be organized training of the staff in the libraries on the use of information resources so as to efficiently assist academics in accessing and retrieving information for research productivity.

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