

# ICT COMPETENCE AND RESEARCH PRODUCTIVITY OF LIBRARY AND INFORMATION SCIENCE (LIS) EDUCATORS IN UNIVERSITIES IN SOUTH-EAST NIGERIA: A CORRELATIONAL STUDY.

By

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## Abstract

**Purpose:** The main purpose of the study was to investigate ICT competence as correlates of research productivity of Library Science Educators in universities in South East, Nigeria. In addition, it sought to ascertain the mean rating scores of respondents on the areas of research productivity of Library and Information Science educators in universities in South East, Nigeria and find out the coefficient of correlation between ICT competence and research productivity of Library and Information Science educators in universities in South East, Nigeria.

**Design/Methodology/Approach:** The study adopted correlational design involving Pearson Product Moment Correlation approach. The population and sample of the study is the 93 Library and Information Science (LIS) educators teaching in the seven universities offering Library and Information Science in South East, Nigeria. The instrument used for data collection is a researcher-made rating scale. Data for this study was analyzed using mean, standard deviation, Pearson Product Moment Correlation (PPMC) for the research questions. while t-test statistics was employed to test the hypotheses.

**Findings:** The findings of the study are that: The mean rating on the areas of research productivity of Library and Information Science educators in universities in South-East is significantly greater than the expected mean of 25; there is a significant, positive and low extent of relationship between ICT competence and research productivity of Library and Information Science educators in South-East universities

**Practical Implications:** The research productivity of LIS educators is dependent on their ICT competence. The level of research productivity implies that library and information science educators put forth conscious efforts in tertiary institutions for their own academic development through research publications. Also any effort put forth to become more competent in ICT will be worth the while since such effort will significantly improve their research productivity.

**Originality/Value:** The value of this work is on the identification of the extent of relationship between ICT competence and research productivity of Library and Information Science educators. Its originality lies in the fact that it has not been published elsewhere.

**Keywords:** ICT Competence, Research Productivity, Library and Information Science Educators, Universities, South East, Nigeria

## Introduction

In Nigeria, the history of library education could be traced back to United Nations Education, Scientific Commission (UNESCO) seminar of 1953 which was held at Ibadan. Part of the identified areas was the establishment of professional training courses in Nigeria which led to the formation of West Africa Library Association (WALA)

and financial support from Carnegie Corporation, respectively. The first library school or Department of Library Science in Nigeria was established at the Institute of Librarianship in the then University College, Ibadan in 1959. Librarianship is one of the professions that have tested different technologies in the course of its metamorphosis, not only in the practicing profession but also in the teaching

profession. Nnadozie (2016) opines that Library and Information Science (LIS) education was founded, and still thrives on inculcating into man, the ability to make and manage records. The trainers of future librarians are referred to as Library and Information Science (LIS) Educators, and carrying out research is an important part of their duties.

Library and Information Science (LIS) educators as members of the Academic Staff Union of Universities (ASUU) are academic staff hence their research productivity is very important in their appointments and promotions as it is spelt out in the scheme of service. By virtue of their work and positions, they are required to get appointments and promotions on evidence of having the specified research publications in reputable journals, conference proceedings, books and book chapters. Print and Hattie cited in Simisaye (2019) define research productivity as the totality of research performed by academics in universities and related contents within a given time period. According to Okonedo (2015) research productivity plays a major role in defining success in academic circles, as it is related to promotion, tenure and salary of academic staff. Productivity to Nagesh and Mukherjee (2019) is usually measured by calculating a composite indicator derived by summing the number of finished research reports, published reports and utilized research reports. It can be said that career advancement of library science educators is directly proportional to their research productivity.

The quality of research productivity adds value both to the institution and to the academic staff, in terms of recognition by other institutions and professional bodies. Similarly, career advancement of academic staff of higher institutions depends largely on their research productivity. All these are equally true of library and information science educators. The extent of research productivity of LIS educators is highly dependent on certain factors among which is ICT competence.

Information and Communication Technology (ICT) has ushered a dynamic change in libraries which has gradually led to the transformation of libraries from traditional to hybrid and virtual libraries. To cope with the change, the LIS educators have to develop their own capabilities and at the same time, make the students as well as practicing professionals to help themselves to acquire knowledge in utilizing the potential tool of ICT for enhancing the knowledge of the society. This will enhance the establishment of their own status in the same society. ICT competence is viewed by Okehie (2019) as those relevant skills and knowledge to be acquired by those working in the library to be able to fully exploit information search, retrievals and delivery using electronic format. ICT competence is conceptualized in this study as sets of skills that encompass the ability of LIS educators in Nigerian universities to know the need for information, identify, locate, evaluate, organize and effectively create, use and communicate information ethically to address issues or problems relating to research activities leading to research publications. ICT skills are imperative such that, they now have an enduring impact on career development of LIS professionals.

It is based on this background that this research on ICT competence as correlates of research productivity of Library Science Educators in universities in South East, Nigeria was carried out.

### **Objectives of the Study**

The main purpose of the study is to investigate ICT competence as correlates of research productivity of Library Science Educators in universities in South East, Nigeria. The specific objectives of the study are to:

1. ascertain mean rating scores of respondents on the areas of research productivity of Library and Information Science educators in universities in South East, Nigeria.
2. find out the coefficient of correlation between ICT competence and research productivity of Library and Information

Science educators in universities in South East, Nigeria.

### Research Questions

In line with the purpose of the study, the following questions are articulated to be answered by the study:

1. What are the mean rating scores of respondents on areas of research productivity of Library and Information Science educators in universities in South East, Nigeria?
2. What is the coefficient of correlation between ICT competence and research productivity of Library and Information Science educators in universities in South East, Nigeria?

### Hypotheses

The following hypotheses are formulated for this study and tested at 0.05 level of significance:

- Ho<sub>1</sub>: The mean score of the respondents on the areas of research productivity of Library Science educators is not significantly greater than the expected mean of 25.
- Ho<sub>2</sub>: There is no significant coefficient of correlation between ICT competence and research productivity of Library and Information Science educators in universities in South East, Nigeria.

### Literature Review

#### Research Productivity

No nation can develop without research. Through it, revolutionary changes are achieved in the society which brings and improves the quality of lives of citizens. Wani, Pandit and Majeed (2013) opined that nations that are weak in research risk the intellectual erosion of their strength, lose their critical ability to assess claims to knowledge, and such nations become dependent on outside for supply of knowledge. One of the cores of tertiary institutions is research. Hence library professional are expected to engage in research as their career development depends mainly on the number of researches carried out otherwise known as research productivity.

Research productivity is one of the criteria for recruitment, promotion and academic advancement of Library and Information Science professionals as they have academic status. One thing is to publish and another is to make it visible globally. Institutions leverage on the research productivity of their staff to become visible. Research leads to the development and increase in the visibility of an institution and subsequently its ranking. The individual staff members also benefit as it leads to their career development and contribution to the community. It also makes them famous and they become authorities in their fields. Hence, a researcher occupies a very significant position in an institution. Dang (2017) opines that through research, an academic encourages collaborations with other institutions and increases institutional visibility. Impact of research is far reaching as it does not only stop in the institutions but extends to the communities as new knowledge that brings about new ideas and innovations.

Research productivity is very important in the appointment and promotion of academic staff as it is spelt out in the schemes of service governing their appointments and promotions. Simisaye (2019) saw research productivity as works published by academic staff which includes; book, journal articles, chapters in books, conference papers and proceedings, technical reports, patents, scientific peer-review bulletin, occasional papers, monographs, co-authored books, and theses/dissertations. Apart from using research productivity as a criteria for promotion of academic staff, Kaufman and Chevan (2011) stated that the prestige of programmes and institutions is built on the scholarly accomplishment of their academic staff. Research productivity evaluation has a significant impact on tenure decisions and promotions in general, salary rises and mobility, especially in research-oriented schools.

Some empirical studies have been carried out on research productivity of library professionals. Sulehri, Najmi and Chaudhry (n.d). conducted a study on Research

Productivity of LIS Professionals in Punjab, Pakistan. The findings of the study show that: research productivity of LIS professionals is increasing consistently; the purpose of carrying out research is to present research papers at conferences; the obstacles faced in carrying out research are: lack of time, official workload and unavailability of a mentor or guidance. Okonedo (2015) examined the publication output of librarians in public universities in South-West, Nigeria. Findings indicated that the publication output of librarians between 2009 and 2014 was relatively high. Librarians publish more in international journals than local journals and, librarians are motivated to publish mostly for promotion. Challenges to publication efforts of librarians among others are time constraints, poor interpretation skills, exorbitant publication fees by journal outfits, and indiscriminate rejection of manuscripts by journals. Simisaye (2019) carried a study on the research productivity of the academic staff in research institutes in South-West, Nigeria between 2009-2014. Findings show that a total of 15,477 research output was published by the academic staff and the level of research productivity of the academic staff is low; articles in journals had highest number followed by conference proceedings; the patterns of research productivity of the academic staff showed that majority of the publications were published locally and majority has single authorship; factors hindering research productivity of academic staff in research institutes are family challenges, financial constraints, inadequate information accessibility, inadequate information literacy and inadequate motivation from employers.

## **Information and Communication**

### **Technology (ICT) Competence**

There is hardly any area of human endeavour that the advent of ICT has not transformed, and academic libraries are not an exception. The use of ICT is increasing almost every day and libraries are expected to provide services that support wide users' learning and research activities. It is in connection to this that Ojiegbe (2010) opined

that ICT is a force to reckon with for upgrade of academic libraries' services as well as improvement on library staff competencies that provide faculty members and students with dynamic information system and services. Muthu, Sivaraman and Singh (2015) are of the view that Information and Communication Technology has ushered in a dynamic change in libraries which has gradually led to the transformation of libraries from traditional to hybrid and virtual libraries. To cope up with the change, the LIS teachers have to develop their own capabilities and at the same time, make the students and as well as practicing professionals to help themselves to acquire knowledge in utilizing the potential tool of ICT for enhancing the knowledge of the society, hence, utilizing the opportunity to establish their own status in the same society.

The changing roles of LIS educators in the digital era emphasize the need to constantly update or acquire new skills and knowledge to remain relevant in today's society, hence the need for Information and Communication Technology competence. Competency according to Fuentes cited in Gastelu, Kiss and Dominguez (2015) is a set of knowledge, skills, attitudes, and values that are needed to effectively perform an occupation or a productive role. Competency according to Oyedokun, Oyewumi, Akanbi and Laaro (2018) could be seen as a combination of practical and theoretical knowledge, skills, behaviour, and value needed to improve on a performance. ICT competencies are a group of skills, knowledge and attitudes that are applied to the use of information and communication systems, as well as the devices that the activity involves and also the knowledge people should know and be able to learn and transfer effectively in order to live productively in a digital world (Gastelu, Kiss & Dominguez, 2015). To Sani and Musa (2016) the concept ICT-competency connotes an integrated set of knowledge, skills and attitudes for functional use of ICT in an educational context while Mart (2013) defined competency as personal characteristics such as: skills, knowledge and

attitudes, which an individual possesses or need to acquire in order to perform an activity within a specific context.

There are various levels of ICT competencies. UNESCO cited in Gastelu, Kiss and Dominguez (2015) stated that competencies can be classified as (a) the core competencies of digital literacy, which are related to the use of ICTs in the classroom presentations and activities, and involve the use of digital tools to obtain information, and the use and development of materials obtained from various online sources; (b) the implementation competencies, which are related to the use of skills and knowledge to create and manage complex projects, solve problems in real-world situations, collaborate with others, and make use of information and experts networks; (c) the ethical competencies, which are related to the ethical, legal and responsible use of ICTs.

In this era of ICT, various skills are required by professionals in order to cope with the trend of events. Nagarajan (2012) stressed that LIS professionals need to be trained with the latest ICT skills to keep them up to date in order to enhance their performances in providing improved and dynamic information services to users. Acquiring ICT skills is a matter of prerequisite to meet the demand of today's knowledge-driven economy (Maneschijn, Botha & Biljon, 2013). Ajeemsha and Margam (2012) and Ayoku and Okafor (2015) provided a list of ICT competencies for library professionals which include basic computer competency, automation skills, use of e-mails, word processing, web design and internet skills, database management and database searching skills, virtual reference services, troubleshooting and maintenance skills, etc.

These skills and competencies enable the academic librarians to function as part of the university's faculty where they are involved with teaching, research, and professional and public service. To achieve this, they need to build on old skills, acquire the new skills and expertise needed to stay up to date with all the efficient ways to redesign and redefine library services and learn new

approaches to service provision (Bawack, 2019). Ayoku, and Okafor (2015) also mentioned that library professionals in university libraries of Nigeria lacked sufficient ICT competencies. Kumar (2013), on the other hand revealed that LIS professionals in the engineering institutions of Andhra Pradesh State, India, had satisfactory level of ICT literacy. On the acquisition of ICT competence/skills, Ajeemsha and Madhusudhan (2014) asserted that staff training and development will play a significant role in equipping library staff for quality library services. The above expression was justified by Nagarajan (2012) assertion who stressed that LIS professionals need to be trained with the latest ICT skills to keep them up to date in order to enhance their performance in providing improved and dynamic information service to users.

Library schools in Nigeria recognize the importance of ICT as regard its applications in performing library routines and services, so they have taken the giant stride by integrating and infusing ICT skills into the curriculum. As great as this initiative is, the bottlenecks as observed by Kamba (2011) are that most of this ICT competencies are being taught in theory as most library schools do not have computer laboratories, poor internet access that hindered the optimal goal of incorporating ICT skills into the curriculum. Bajpai and Margam's (2019) study was on ICT skills and competencies of library and information science professionals working in college libraries, University of Delhi: A study. Findings of the study reveal that the majority of the LIS professionals have basic knowledge of ICT skills to manage the libraries with the exception in some areas such as dealing with the operating system and software. Abbas and Siddique (2020) examined ICT competencies among university library professionals of Punjab, Pakistan. The findings reveal that most of the LIS Professionals had advance level competencies in library management systems, simple searching techniques, proficiency in social media and search engine usage. They also possessed moderate skills in

basic hardware and software installation, office management, and required computer programming skills, Linux OS and cloud computing. The majority of the university library professionals preferred personal practices, workshops, seminars and conferences for the acquisition of ICT competencies along with the role of LIS Schools. Oyedokun, Oyewumi, Akanbi and Laaro (2018) assessed the ICT competence of library staff in selected universities in Kwara state Result of findings demonstrated a high level of ICT competency on the part of library staff in the selected university libraries (University of Ilorin, Kwara State University and Al-Hikmah University), most especially on skills that were considered basic and intermediate ICT skill. discourse – ICT competence.

Sani and Musa (2016) conducted a study on Influence of ICT competencies on job performance among library personnel in tertiary institutions in Lokoja, Kogi State, Nigeria. The findings of the study showed that the library staff in the institution studied possessed computer skills, use of e-resources/multimedia, research skills, and automation and digitization skills. Also, majority of them acquired their skills in computer/ICT training centers and through on-the-job training. Hence, ICT competency enabled them to meet up with the demands of their job, thereby, providing library services such as e-library/multimedia services,

Circulation services, research and bibliographic services among others. Therefore, the findings of this study revealed that the level of ICT competence of library staff significantly enhanced their job efficacy and performance.

**Methodology**

The study adopted correlational research design. The population of the study is the 93 Library and Information Science (LIS) educators teaching in the seven universities offering Library and Information Science. The population also served as the sample since it is small and can be conveniently studied by the researcher, hence, the adoption of census sampling technique. The instrument that was used to collect data for this study was a researcher-made rating scale. The rating scale was titled “Mentoring and Knowledge Sharing as Correlates of Research Productivity of Library Science Educators in Universities in South East, Nigeria (MKSRLPISSE)”. The researchers used mean and standard deviation to answer research question one, Pearson Product Moment Correlation (PPMC) to answer research question two while the hypotheses were tested using t-test of correlation

**Data analyses and Presentation**

**Research Question One:** What are the mean rating scores of the respondents on the areas of research productivity of Library Science educators in universities in South East, Nigeria?

**Table 1: Item-by-Item Means and Standard Deviation of the Areas of Productivity Library and Information Science Educators in Universities in South-East**

N = 93						
S/N	The areas of research productivity of Library and Information Science Educators are	$\sum fx_i$	$\bar{X} = \frac{\sum fx_i}{N}$	Std	Remark	
1	Seminar papers	279	3	0.81	Agree	
2	Research Reports	275	2.96	0.76	Agree	
3	Conference papers	312	3.35	0.88	Agree	
4	Pre-prints	312	3.35	0.71	Agree	
5	Post-print journals	279	3	0.7	Agree	
6	Presentations	272	2.92	0.79	Agree	
7	Posters	269	2.89	0.84	Agree	

8	Textbooks	325	3.49	0.52	<b>Agree</b>
9	Book chapters	296	3.18	0.71	<b>Agree</b>
10	Edited works	274	2.95	0.77	<b>Agree</b>
			<b>31.09</b>	<b>7.49</b>	

As shown in Table 1, item-by-item mean, standard deviations, observed mean and standard deviation have been employed to answer research question one. The results in table shows that through item-by-item analysis all of the ten areas of research productivity listed are agreed on by the library science educators in the universities. The areas of research productivity of the library and information science educators

seminar papers, research reports, conference papers, pre-prints, post-print journals, presentations, posters, textbooks, book chapters, edited works.

**Hypothesis One:** The mean score on the areas of research productivity of Library and Information Science educators is not significantly greater than the expected mean of 25.

**Table 2: Calculated t-test Statistics for Testing the Difference between the Observed and the Expected Means**

$\mu$	$df$	$\alpha - value$	$t_{cal}$	$t_{crit}$	<b>Decision</b>
25.00	92	0.05	7.799	1.666	Reject $H_{01}$

As shown in Table 2, the calculated t-value 7.799 is greater than the tabulated t-value 1.666 at set probability value 0.05 and 92 degree of freedom. Based on this analogy, the researcher rejects the null hypothesis one which states that “the mean score on the areas of research productivity of Library and Information Science educators is not significantly greater than the expected mean of 25”. Therefore, the mean rating scores on

areas of research productivity of Library and Information Science educators in universities in South-East is significantly greater than the expected mean of 25.

**Research Question Two:** What is the coefficient of relationship between ICT competence and research productivity of Library and Information Science educators in universities in South East, Nigeria?

**Table 3: The Coefficient of Correlation between ICT Competence and Research Productivity of Library and Information Science Educators**

<b>Variable</b>	$n$	$r$	$r^2$	<b>Remark</b>
<b>ICT Competence</b>				
<b>Productivity</b>	93	0.311	0.097	Positive & LER

As shown in Table 3 the coefficient of correlation between ICT competence and research productivity of library and information science educators is 0.250, while the coefficient of determination is 0.097. The coefficient of correlation is positive and within the range 0.21 – 0.40 for low extent of relationship. Hence, there is a positive and low extent of relationship between ICT competence and research productivity of

library and information science educators in South-East universities.

**Hypothesis Two:** The coefficient of relationship between ICT competence and research productivity of Library and Information Science educators in universities in South East, Nigeria is not significant.

**Table 4: Summary t-values Table for Testing Hypothesis Four**

$t_{cal}$	$df$	$t_{crit}$	$p$	$\alpha$	Decision
3.122	91	1.666	0.001	0.05	Reject Ho <sub>4</sub>

From Table 4, the calculated t-value 3.122 is significant at the observed probability value 0.001 which is less than the set probability value 0.05. The researcher, therefore, fail to accept the null hypothesis four which states that “There is no significant relationship between ICT competence and research productivity of Library and Information Science educators in universities in South-East, Nigeria” and instead accept the alternative hypothesis. Hence, there is significant relationship between ICT competence and research productivity of Library and Information Science educators in universities in South-East, Nigeria.

### Discussion of Findings

#### Areas of Research Productivity of Library and Information Science Educators in Universities in South-East Nigeria

The finding of the study revealed high level of research productivity of library and information science educators in universities in South-East Nigeria. The statistical test carried out revealed that the level of research productivity of Library and Information Science educators in universities in South-East, Nigeria is significant. This finding proves the conscious efforts put forward by library and information science educators in universities for their own academic development. The research productivity of academic staff of any university often served a major role in attaining success in academic circles as it is related to promotion, tenure, and salary. The finding of this study is in agreement with the findings of Sulehri, Najmi and Chaudhry (n.d). whose findings show that: research productivity of LIS professionals is increasing consistent. Conversely, the finding is contrary to the findings of Simisaye (2019) and Okonedo (2015) who found that the level of research productivity of the academic staff is low.

#### The Coefficient of Correlation between ICT Competence and Research Productivity of Library and Information Science Educators

The finding of the study with regards to research question two revealed that there is a positive and low extent of relationship between ICT competence and research productivity of library and information science educators in universities in South-East, Nigeria. The statistical test carried out revealed that there is significant relationship between ICT competence and research productivity of Library and Information Science educators in universities in South-East, Nigeria. The finding of this study on the relationship between ICT competence and research productivity of library and information science educators compared to the findings of other researchers in this area. For example, the finding is in line with the findings of Sani and Musa (2016), Oyedokun, Oyewumi, Akanbi and Laaro (2018) and Abbas and Siddique (2020) who found significant influence of ICT competence on staff productivity.

### Conclusion

Based on the results data analyses presented and the discussion of findings, the researchers concluded that that ICT competence significantly and influence research productivity among library and information science educators. Also, there was high level of research productivity among library and information science educators in universities.

### Recommendations

Based on the findings of the study, the following were recommended.

1. The university authorities should continue to motivate the library science educators to put more effort into their research productivity by

giving them opportunities and support to attend conferences and publish research articles.

2. The university management should make provisions of information and communication technology resources in the university and encourage library science educators and other academic staff to embrace such opportunities since it will improve their research productivity

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