Online Visibility of the Research Output of Library and Information Science Educators in Federal Universities in South-East, Nigeria on Google Scholar Database

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Abstract
This study investigated the online visibility of the research output of library and information science educators (LISE) of federal universities in South-East Nigeria, using the Google Scholar Database. Three research questions guided the study. The descriptive survey design was adopted for the study. The population of the study was 129 library and information science educators from five Federal universities in South-East, Nigeria. A checklist titled "Researcher's Google Scholar Observation Guide (RGSOG)" was used for data collection. The instrument was validated by three experienced lecturers. One in the department of Educational Foundations (Psychology unit) and two in the department of Library and Information Science, all in Nnamdi Azikiwe University, Awka. Scorer or rater reliability estimate was used to determine the internal consistency of the instrument with a value of 0.79. The data obtained was analyzed using frequencies and percentages that were presented in tables. The findings revealed that majority (70.5%) of Library and Information Science Educators of federal universities in South-East of Nigeria are visible on Google scholar. It was also found that most of the research outputs (2173) of Library and Information Science Educators (LISE) in Federal Universities in South-Eastern Nigeria are available on the Google Scholar database. Based on the findings, it was recommended among others that university management should engage in public enlightenment programs through mass media and academic outlets like departmental board meetings to sensitize and encourage Library and Information Science Educators to publish their works in well-known and reputable journals to improve their availability on the Google Scholar database.

Keywords: Online Visibility, Research Output, Library, Information, Science, Educators, Google Scholar, Database

Introduction

Nigerian universities play a vital role in scholarly research and knowledge dissemination, particularly in the field of Library and Information Science. One of the key parameters in the ranking of higher education institutions is the quality of research output and online visibility of individual faculty members. Research involves the creation of new ideas, innovative methods, and systematic inquiry to explain phenomena. According to James (2016), research is a rigorous

and precise process of analyzing, synthesizing, evaluating, and recording accurate observations to inform generalizations and establish principles and theories. One of the academic stakeholders that engage in scholarly research and knowledge dissemination in universities are the Library and Information Science Educators (LISE).

Library and Information Science Educators are individuals who are involved in the education and training of Library and Information Science students. In addition to teaching, most of the library and information science educators conduct research which is published in different academic journals. They also play a major role in tertiary institutions and economic development of nations as custodians of knowledge and as catalysts in research and development (R & D). Adebayo, Odunola and Adeniran,(2018) affirmed that Library and Information Science Educators (LISE) have become indispensable workers in Nigeria's Higher Institutions of Learning as they serve as guardians of information. Additionally, they contribute to making essential impact in preparing future researchers by advancing their scholarly contributions to library and information science through their research outputs.

Academic research is a primary focus for institutions globally, including Nigeria. Faculty members within the academic sphere contribute to research through guiding students as thesis advisors while also conducting their own research. The academic staff of the university now considers research as a fundamental aspect of their responsibilities (Stensaker, Bilbow, Breslow, & Van der Vaart, 2017). The dissemination of faculty members' research findings in reputable scientific journals, which must also be publicly accessible, plays a significant role in the ranking of institutions worldwide today (Dementer, 2020). According to Tayeb, Zaheb, and Jozef (2016), the aim of research dissemination for most university management is to raise the university's academic status and prestige to that of an internationally recognized world-class institution. However, universities must strive for research excellence to build a reputation that has significant impact on the global community in order to attain world-class status.

Many academic institutions in Nigeria have scholars who engage in a variety of research endeavors, leading to publications in local academic journals (Nwokedi & Nwokedi, 2018). However, a substantial proportion of these articles are not publicly accessible online (Ridwan, 2015). This situation can be attributed to the perceived low quality of the studies as suggested by the research conducted by Fosci, Loffreda, Chamberlain, and Naido (2019) who revealed that a significant amount of research originating from Nigeria lacks quality which contributes to lower citation rates compared to other countries in sub-Saharan Africa. In addition, the review pointed out a dearth of mechanisms for assessing research quality in Nigerian universities. Furthermore, the high publication fees set by publishers for most international journals, together with the cost of journal subscription which discourage Nigerian libraries from acquiring them, are also factors that contribute to the substandard quality and limited visibility of research. Scholars in developing countries like Nigeria face challenges in their professional advancement, which include lack of mobility and increased teaching responsibilities that impede their capacity to publish extensively and facilitate increased access to their research findings (Erika, Robert, Wallace & Mclean, 2018). According to Venitha (2015) the research capacity in Africa raises concern regarding the output of peer-reviewed papers, theses, and dissertations. African universities produce less than 1% of scientific publications globally, even though 12% of the world's population resides in Sub-Saharan Africa (World Bank, 2014). This suggests that many researchers in Africa have limited access to the valuable researches produced on a global scale. However, advancements in technology have provided opportunities that address this global issue, offering multiple databases such as Google Scholar for dissemination of research outputs.

Research output encompasses the quality and often the quantity of research published in various forms, such as books, journal articles, conference or workshop proceedings, occasional papers, and monographs (Okonedo, 2015). Academic institutions conduct research to contribute to knowledge, make discoveries, and support government agenda. Meanwhile, faculty members in the field of library and information science prioritize career advancement and academic promotion which could be achieved through publishing research outputs in journals which have high visibility.

Visibility refers to the extent to which something is seen, recognized, or noticed. It can also be seen as the extent to which other scientists and the general public are aware of your research work. According to Tihyaunin (2017), visibility is how easily published works can be possibly made available to the widest audience, seeking to maximize the impact of the research outputs. Furthermore, he said that librarians and indeed information professionals must take advantage of available technologies to make researches more visible as well as promote the quality of research, considering the web and mobile technologies that are pertinent for the dissemination of scholarly information. In the context of research in academics, research visibility is crucial for several reasons. It can enhance the impact of research articles, attract collaboration with colleagues and emphasize the influence of a study on society (Majhi, Mauvais, M'kulama, & Bwalya, 2023). Nonetheless, it is imperative to note that publishing research output is only the first step; ensuring that these outputs are visible and accessible to the intended audience is an equally, if not more, important consideration. In present day digital age, online visibility of research output is crucial for scholarly communication, as it allows researchers to showcase their work, connect with peers, and increase their research impact.

Online visibility is a critical aspect of research dissemination, referring to the ease with which research outputs can be found in relevant online channels, including search engines, local websites, social media sites, and directories (Kupe, 2021). The extent of online visibility among Library and Information Science Educators (LISE) is particularly important for promoting their research output, enhancing their professional profiles, and contributing to the growth and development of the field. Observations have shown that, online visibility facilitates knowledge dissemination, collaboration among colleague and peers, and increase in citation metrics, which are valuable for researchers, institutions, and funding agencies. It also serves as a quantifiable measure of research productivity and impact, influencing the reputation of individual scholars, institutions, and the broader field of study. One effective approach of boosting the visibility of a research paper is through open-access (OA) publication, which makes the study publicly accessible from the very beginning (Majhi, Mauvais, M'kulama, & Bwalya, 2023).Online visibility can be achieved through various platforms such as Research gate, SCOPUS, Web of Science and Google Scholar among others. The focus of this study is the online visibility of research output of library and information science educators in tertiary institutions found in Google Scholar database.

Google Scholar index encompasses a wide range of disciplines, including scholarly literatures in various publishing formats. In a significant update rolled out in 2012, individual scholars gained the ability to create personal 'scholar citations profiles' and 'public author profiles' that they can edit themselves. Users with a genuine academic institution-linked Google account can create their own page, indicating their areas of interest and citations. Google Scholar comprehensively searches for scholarly publications from various disciplines and sources, providing a centralized platform to discover relevant scholarly research globally (Dhamdhere, 2018).

Library and Information Science Educators in federal universities in South-East Nigeria are required to engage in research and showcase their research output for promotion and career advancement. However, it is not certain whether this researches being conducted are readily accessible online for global citation. Okeji (2018) observed that only few library educators in universities in Nigeria, are prolific as shown by their research outputs. Okezie (2023) maintained that the publication counts for library educators in universities in South-East, Nigeria are on the increase but this does not translate to increased availability of their publications. This informed the present study which is set to determine online visibility of research output of library and information science educators in federal universities in South-East, Nigeria using Google scholar database.

Statement of the Problem

Many academic institutions and research organizations in Nigeria have scholars engaged in a variety of research endeavours, leading to publications in local and international academic journals. Moreover, a substantial proportion of these articles are conducted by Library and Information Science Educators but seem not to be available on research database such Google Scholar. This phenomenon can be attributed to the perceived low quality of these studies as captured in the research conducted by some scholars within the library and information Science space such as Rafael, Pauline, and Samuel (2020); Orji and Anunobi (2019) who revealed that a significant amount of research by library educators originating from Nigeria lacked quality which contributed to lower citation rates when compared to other countries in Sub-Saharan Africa. In addition, the review pointed out a lack of mechanisms for assessing quality research output. In the same vein, it has been reported that research output in the forms of published peer-reviewed articles, master's and doctoral works is deplorably low in Africa, with African universities producing less than 1% percent of global scholarly articles. This was attributed to the high cost of subscription fees and low quality of the research works.

This insinuates that the responsibility of ameliorating this situation rests with Library and Information Science Educators. The aforementioned has prevailed despite consistent pressure to have increased research outputs in order to succeed in the academic career and to improve the institutions ranking. The ideal situation over the years has remained that Library and Information Science Educators ought to conduct and publish research regularly for increased visibility.

However, despite the number of research works being published by Library and Information Science Educators in South- East, Nigeria, it seems many of these publications have remained invisible. This low visibility in academic research output has led to the low ranking of institutions. This unsatisfactory state of affairs in the level of visibility of Library and Information Science Educators' research output informs the present study, which will investigate the online visibility of research output of Library and Information Science Educators of federal universities in South-East, Nigeria using Google scholar database.

Purpose of the Study

The purpose of this study is to investigate the online visibility of research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria using Google Scholar database. Specifically, this research sought to:

1. Ascertain the percentage of research output that of Library and Information Science Educators (LISE) of federal universities in South- East, Nigeria that are visible in Google Scholar database.
2. Ascertain how many of the research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria are available in Google Scholar database.
3. Determine the citation frequency of the research outputs of Library and Information Science Educator (LISE) federal universities in South-East, Nigeria in Google Scholar database.

Research Questions

This study provided answers to the following research questions:

1. What percentage of research output of Library and Information Science Educators of federal universities in South-East , Nigeria are visible on Google scholar database?
2. How many research outputs of Library and Information Science Educators (LISE) in federal universities in South-East, Nigeria are available on the Google Scholar database
3. What is the citation frequency of the research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria on the Google Scholar database?

Review of Related Literature

The visibility of library and information science educators on Google Scholar or any other database is largely determined by their research output or research productivity. Pertinently, the percentage of visibility of Library and Information Science Educators is determined by their use of research databases, academic networking sites, institutional repositories, social media and the like. As a result of this, library and information science educators need to increase their use of research databases in order to boost their visibility. But the fact remains that library and information science educators must engage in research if they must boost their online presence. As noted by Udo-Anyanwu, Ibegbulem and Asuzu (2023), research productivity is one of the criteria for recruitment, promotion and academic advancement of library and information science professionals. Udo-Anyanwu, et al. stated that one thing is to publish and another is to make it visible globally. The researchers further assert that research leads to the development and increase in the visibility of an institution and its ranking, adding that it also benefits the individual staff members as it leads to their career development and contribution to the community. However, certain factors are employed in determining the visibility of publications. One of these factors is the quality and not the quantity of publications online. Through quality research, the researcher gets promotions and attracts grants. The researchers also pointed out that assessment of a scholar's work can be measured based on the factors such as the number of peer-reviewed publications, citations to the publications and the influence of the publications. Similarly, Dang (2017) posits that academic norms have emphasized the importance of publishing research, noting that research in academic institutions sets a hallmark for the development and increasing the visibility of such institutions and its ranking. Dang went further to state that through research, an academic encourages collaboration with other institutions and increases institutional visibility. The researcher maintains that the impact of research is far reaching because it does not only stop in institutions but extends to the communities as new

knowledge that ushers in new ideas and innovations. The thrust of this view is that it is research that increases visibility. Nevertheless, Dang laments that research visibility is awfully low in Afric

Furthermore, according to Idiegbeyan-Ose (2013), the dominance of library and information specialists in academic libraries as authors is not surprising. In Nigeria, academics face a "publish or perish" syndrome, where their ability to be promoted is heavily dependent on their academic publications and scholarly activities. The low publication output of library and information science educators in Nigeria has been attributed to the advances in technology and lack of time. To this end, Baro and Ebhomenye (2012) blame the exclusion of sub-Saharan Africa from the global economy on three major factors: unreliable institutional environment, lack of production and communication infrastructure, and erroneous economic policies. They attribute Africa's exclusion from technology to low computer and internet penetration and the absence of a fundamental precursor to computerization works, especially electricity. They further argue that being disconnected or superficially connected to the internet is tantamount to marginalization in the global networked system as development without the internet could be likened to industrialization without electricity in the industrial era. Similarly, Adebayo, Okorie, Wagwu and Ajiboye (2019) contend that scholarly publications are very important because they contribute to career advancement, personal recognition among peers, improved income, and enriched relationships with teaching faculty and professional colleagues. In their study, they found out that the low research output of library and information science educators could be attributed to lack of time and heavy workload, inflexible work schedule and absence of formal mentoring programs. In view of this, they suggest the following ways to enhance the research output of Library and Information Science Educators: Work time should be provided for research and scholarly publication; organization of training, workshops and seminars; formal mentoring programmes; collaboration; and open access publishing.

According to Ifijeh, Ogbomo and Ifijeh (2016), for the library to remain effective and efficient in promoting research, teaching and learning, library and information science educators are required to increase their research productivity in order to enhance the practice of librarianship. They revealed that several researches in library and information science revealed a preference by librarians to publish their research works in journals and conference proceedings. Similarly, they argued that the comparatively low research output in Nigeria and other developing countries as compared to their counterparts in developed countries as reported in some researches might be as a result of lack of access to adequate information sources. The study done by Tsafe, Basaka and Chiya (2016) revealed that promotion was the main reason for publishing among librarians. Total number of publications by the librarians was 373 different types of publications. In terms of productivity, the majority had published at least one article within the period of the study (2000–2012). The study also revealed that some librarians do not publish at all and that male educators publish more than their female counterparts. Also, those in leadership positions publish more than those in lower ranks.

World Wide Web has become an outstanding tool for the collection and dissemination of scholarly information, and web indicators are designed not only to monitor the presence and impact of an individual or an organization in an online space but to promote a more open, global, societal and detailed knowledge of the scholars' organization, activities and results (Orji and Anunobi, 2019). Also, Venitha (2015) affirms that research capacity in the form of published peer-reviewed articles, master's and doctoral output is deplorably low in Africa,

with African universities producing less than 1% of global scholarly articles. Venitha attributes this low visibility of research in Africa to the cost of subscription fees and low quality of research work, suggesting that the responsibility to ameliorate this situation rests not with researchers or their institutions but with the libraries or the information professional. Venitha further emphasizes that library as knowledge institutions in the academic environment serve as institutions for supporting and promoting research, adding that librarians and information professionals should leverage the available technologies so as to make research more visible and equally promote the quality of information.

On the matter of citation, journal impact factor, article length and type, and journal self-citations affect citation rates (Vanclay, 2013). The researcher is of the view that authors seeking to be well cited should endeavour to write comprehensive and substantial review articles and submit them to journals with a high impact factor. The researcher maintains that many academics should publish their works in open access journals with a high impact factor, noting that publishing in a journal with a higher impact factor seems to be the most effective strategy to increase citation rates. Based on this, it could be pointed out that library and information science educators should endeavour to publish their works in open access journals with a high impact factor in order to increase their visibility. Also, Ebrahim (2023) posits that the number of publications is the first criteria for accessing a research output, noting, however, that the main measurement for productivity is the number of citations, and citations are related to the paper's visibility. Ebrahim opines that author self-archiving increases visibility of articles and perceived benefits in sharing scholarly output. Self-archiving, according to them, refers to storing the scientific research outputs in researchers' own web pages/sites or institutional repositories. Furthermore, the researcher agrees that publishing in an open access journal has been generally associated with a 10% boost in citations. Many researchers have argued that the availability of research output of library and information science educators as well as other researchers does not depend on the quantity of their publications but on the quality of such publications. Another factor that determines the availability of research output of library and information science educators on Google Scholar or other academic databases is publishing in open access.

Scholarly publications as defined by Tsafe, Basaka and Mohammed (2016) is said to be those documents published through peer-review process and accepted in the form of recorded sources such as books, chapters in books, conference papers and proceedings, articles in refereed journals, creative works and visual arts, among others. This is in line with Oni and Eziam (2014) who view publication output as the number of books or chapters in books, published journal articles, conference and workshop proceeding and other related publications such as bibliographies, abstracts, and indexes which are usually used in assessing one for promotion. According to them, citing the publications of academics and linking each cited work to its abstract or the full paper provides an economic means of making such works accessible to others while improving the ranking profile of the university where such scholars belong. What this entails is that such scholars and their institutions become discoverable and visible to their wide web audience. It is important to note that the number of times a scholar's work is cited promotes the academic career of such a scholar and also places his or her institution on the global map. Also, Aksnes, Langfeldt and Wouters (2019) stated that citations to research publications act as a quality indicator which is important for both the author and the affiliated university. Researchers are evaluated based on their publications and the number of citations their publications attract. However, even

though the number of publications is the first criterion for assessing a researcher's output, the main measurement of an author's productivity is the number of citations.

Citation refers to a reference to the source of information used by a researcher in his research work. It is a written reference to a specific work or portion of a work (book, article, dissertation, report, musical composition) produced by a particular author, editor, or composer clearly identifying the work document in which the work is to be found. Also, scholarly works are employed to establish links to other works and is regarded as one of the most widely used methods of bibliometric which studies reference to and from documents (Orji & Anunobi, 2019).

Consequently, the various studies and scholarly viewpoints reviewed have provided a comprehensive understanding of the visibility, availability, and citation frequency of the research output of library and information science educators, particularly as indexed on platforms like Google Scholar. While the literature acknowledges the importance of open access publishing, quality research, digital visibility, and institutional support, it also reveals persistent challenges affecting research productivity and global recognition of library and information science educators in Nigeria. However, during the review, the researcher observed that limited empirical attention has been given to the extent of visibility, availability, and citation of LIS educators' research output in federal universities within South-East Nigeria. Hence, a noticeable gap in literature exists, which this study aims to address.

Methodology

A descriptive survey research design was adopted for the study. The study was carried out in South-East geopolitical zone of Nigeria which is made up of Anambra State, Enugu State, Abia State, Imo State and Ebonyi State. Educators in library schools and librarians in university libraries in universities in South-East geopolitical zone were chosen for this stud because LIS educators in the area have high interest in promoting the visibility of their research outputs. The population of the study consisted of 129 Library and Information Science Educators from the Department of Library and Information Science in the five federal universities in South-East, Nigeria. Census sampling technique was used for the study because the population under study was manageable. The instrument that was used for data collection is an observation guide titled "Researcher's Google Scholar Observation Guide" (RGSOG).The Researcher's Google Scholar Observation Guide (RGSOG) included information that enabled the researcher obtain the visibility percentage, publication count and citation frequency of Library and Information Science Educators. The instruments were given to three experts for validation, two from the Department of Library and Information Science and one from Educational Foundations (Psychology) all in the Faculty of Education, Nnamdi Azikiwe University, Awka. The following recommendations were made, expunge the research hypotheses formulated as they are not proper for the study, and add date of data collection as data changes over time, names of Library and Information Science Educators must not be published. Following their critical and constructive suggestions, ambiguous items were restructured for clarity and some indicated items were placed in the right sections, some columns were included, research hypotheses were expunged, dates were add and names of Library and Information Science Educators were coded. The reliability estimate for the research instrument used for data collection was done using the scorer or ratter reliability estimate. For the reliability, 10 names with the ranks of Library and Information Science Educators from University of Calabar (UNICAL) were given to two independent scorers or ratters in different locations. The scores from the independent ratters were analysed using

crosstabs. The overall coefficient value of 0.698 was obtained. The result of the interrater analysis is Kappa = 1.00 with $p < 0.05$. This measure of agreement, while statistically significant, is only marginally convincing. The researcher obtained names with the ranks of Library and Information Science Educators, this also served as their Google scholar account. The researcher then entered the names of each educator that constituted the sample of the study, into Google scholar search engine at www.scholar.google.com. Thereafter, the list of publications and citations that emerged was used to ascertain the publication count and citation frequency of each Library and Information Science Educator in the zone within the stipulated time of the research. Data generated were presented in tables and analysed using percentages and charts to answer the research questions in the study.

Results

Research Question 1: What percentage of Library and Information Science Educators of federal universities in South-East, Nigeria are visible on Google scholar database?

Table 1

Visibility Percentage of Library and Information Science Educators of Federal Universities in South-East, Nigeria in Google Scholar (Between 27th to 28th November, 2024)

RANK	UNIVERSITIES					TOTAL
	UNIZIK (N=37)	UNN (N=49)	FUTO (N=16)	MOUAU (N=21)	FUNAI (N=6)	
	Number Visible	Number Visible	Number Visible	Number Visible	Number Visible	
UL/Prof/Reader (N=21)	7	8	1	4	1	(100%) 21
Snr. Lect/Snr. Lib/Prin.Lib (N=58)	11	15	11	4	1	(72.4%) 42
Lect. 1/Lib. 1 (N=18)	5	7	0	0	0	(66.6%) 12
Lect.II/Lib.II (N=18)	4	3	2	0	2	(73.3%) 11
Grad. Asst./Asst. Lib (N=14)	4	1	0	0	0	(35.7%) 5
(%) TOTAL	(83.8%) 31	(69.4%) 34	(87.5%) 14	(38%) 8	(66.6%) 4	**(70.5%) 91**

Table 1 show that 70.5% of Library and Information Science Educators in Federal Universities in the South-East zone are visible in Google Scholar. Federal University of Technology Owerri (FUTO) is leading with 87.5%, as 14 out of 16 of its Library and Information Science Educators were seen on Google Scholar. Nnamdi Azikiwe University (UNIZIK) had 83.8% visibility as 31 out of the 37 Library and Information Science Educators were visible.. Library and Information

Science Educators from the University of Nigeria (UNN) had a visibility of 69.4% as 34 out of 49 were visible while Alex Ekwueme Federal University (FUNAI) had 66.6% with 4 out of the 6 were visible while Michael Okpara University of Agriculture (MOUAU) had the lowest visibility of 38%, because only 8 out of 21 Library and Information Science Educators were visible in an author search of Google Scholar database. The table further revealed that University Librarians, Professors and Readers in the zone had the highest visible presence of (100%) in Google Scholar as all were visible. Lecture II/Librarian II had 73.3% as 11 out of 18 were visible followed by senior lectures and principal librarians with 72.4% as 42 out of 58 were visible while Graduate Assistants and Assistant Librarians had 35.7% visibility. Thus, majority (70.5%) of Library and Information Science Educators of Federal Universities in South-East, Nigeria are visible on Google scholar.

Research Question 2: How many research outputs of Library and Information Science Educators (LISE) in Federal Universities in South-East, Nigeria are available on the Google Scholar Database?

Table 2

Distribution of Available Google Scholar indexed Research Outputs of Library and Information Science Educators in Federal Universities in South-East Nigeria. (Between 27th to 28th November, 2024)

RANK	UNIVERSITIES						
	UNIZIK (N=37)	UNN (N=49)	FUTO (N=16)	MOUAU (N=21)	FUNAI (N=6)	TOTAL	AVERAGE RESEARCH OUTPUT/ RANK
	Available Research Output	Available Research Output	Available Research Output	Available Research Output	Available Research Output		
UL/Prof/ Reader (N=21)	183	342	45	137	37	744	35.4
Snr. Lect/Snr. Lib/Prin. Lib (N=58)	208	323	333	118	9	991	17.1
Lect. I/Lib. I (N=18)	128	146	0	0	0	274	15.22
Lect.II/Lib.II (N=18)	24	75	24	0	20	143	7.9
Grad. Asst./Asst. Lib	9	12	0	0	0	21	1.5

(N=14)							
TOTAL	552 (25.4%)	898 (41.3%)	402 (21.6%)	255 (13.7%)	66 (3.6%)	2173	(16.9)

Table 2 showed that a total of 2173 research outputs of Library and Information Science Educators from the five Federal Universities in the South-East zones of Nigeria were indexed in Google Scholar as at the time of search between November and December 2024. University of Nigeria (UNN) had the highest indexed research output of 898 representing 41.3% of the total research output from the zone. This is followed by Nnamdi Azikiwe University (UNIZIK) with 552 research outputs representing 25.4%. Federal University of Technology (FUTO) had 402 research outputs in Google Scholar which represents 21.6% of the total research outputs while Michael Okpara University of Agriculture (MOUAU) had 255 research outputs making 13.7% of the total research outputs from Library and Information Science Educators. Alex Ekwueme Federal University had the lowest research output of 66 contributing only 3.6% of the total research outputs. The table also showed that the highest average contributor per rank came from University Librarians, Professors and Readers with 622(29.6%) research outputs while Lectures I/Librarians I had 274(15.22%) research outputs. Senior Lectures and Principal Librarians had 849(14.6) research outputs in Google Scholar. Lectures II/Librarians II had 143(7.9) research outputs while Graduate Assistants/Assistant Librarians contributed 21(1.5) research outputs. Thus, most of the research outputs (2173) of Library and Information Science Educators (LISE) in federal universities in South-East, Nigeria are available on the Google Scholar database

Research Question 3: What is the citation frequency of the research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria in the Google Scholar database?

Table 3
Citation frequency of Library and Information Science Educators in federal universities in South-East, Nigeria on Google Scholar (Between 27th to 28th November, 2024)

UNIVERSITY	NUMBER OF CITATIONS					Total Citations	No. of publication	Citation Frequency
	UL/Prof/ Reader (N=21)	Snr. Lect/Snr. Lib/Prin.Lib (N=58)	Lect. 1/Lib. 1 (N=18)	Lect.II/ Lib.II (N=18)	Grad. Asst./Asst. Lib (N=14)			
UNIZIK	802	794	335	35	26	1992	552	4
UNN	3312	4021	816	966	69	9184	898	10
FUTO	391	904	0	83	0	1378	402	3
MOUAU	601	702	0	0	0	1303	255	5
FUNAI	121	3	0	85	0	209	66	3
Total Citations	5227	6424	1151	1169	95	14066	2173	**6**
No. of Publications	622	849	274	143	21			
Citation Frequency	8	8	4	8	5			

Table 3 show the citation frequency of Library and Information Science Educators of federal universities in South-East, Nigeria. Citation frequency is derived by dividing the number of citations by the number of publications. Library and Information Science Educators in the zone had a cumulative citation frequency of 6 with 14066 citations coming from 2173 publications in Google Scholar with University of Nigeria (UNN) having the highest citation frequency of 10 with 9184 citations from 898 publications. MOUAU had 1303 citations, 255 publications and a citation frequency of 5. Nnamdi Azikiwe University (UNIZIK) had a citation frequency of 4 with 1992 citations from 552 publications while Federal University of Technology (FUTO) and Alex Ekwueme Federal University (FUNAI) both had same citation frequency of 3 with FUTO having 1378 citations from 402 publications and FUNAI having 209 citations from 66 publications. The table further showed that both University Librarians, Professors and Readers and Senior Lecture/Principal Librarians had the highest citation frequency of 8 in Google Scholar with University Librarians, Professors and Readers having 5227 citations from 622

publications and Senior Lecture/Principal Librarians having 6424 citations from 849 publications. Lecturers II/Librarian II had the citation frequency of 6 with 1169 citations from 143 publications. Lecturer I/Librarian I and Graduate Assistant/Assistant Librarian both had 5 citations from 274 publications and Graduate Assistants/Assistant Librarians had 95 citations from 21 publications. There is high citation frequency of the research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria on the Google Scholar Database.

Discussion of Findings

The finding of the study showed that majority (70.5%) of Library and Information Science Educators of federal universities in South-East, Nigeria are visible on Google scholar. The possible explanation for this finding is that most library educators create Google Scholar Profiles to make their research outputs visible on Google Scholar to also gain high citations that could enable them meet the promotion criteria. Most library educators publish their works in open access journals that have better chances of providing visibility on Google Scholar. This finding is in line with that of Adetayo (2022) who revealed that the research visibility of academic librarians is visibly low and suggested that the use of databases could improve academic librarian's visibility. This is also in agreement with the assertion of Mbagwu and Oduagwu (2023) which showed that librarians make their research outputs visible as it enhances networking, career advancement and institutional ranking. The highest visibility came from University Librarians, Professors and Readers in the zone while Graduate Assistants and Assistant Librarians had the lowest visibility. Library and Information Science Educators are therefore expected to irrespective of their rank, create a Google Scholar account as it will boost their visibility, research productivity and also their parent institutions' ranking.

The result of the study showed that most of the research outputs (2173) of Library and Information Science Educators (LISE) in federal universities in South-East, Nigeria are available on the Google Scholar database. Library educators perhaps make their research outputs available in it to make them freely accessible to many educational institutions across the globe. This disagreed with the finding of Basiru (2020) which revealed a low research productivity amongst academic librarians at the lower cadre. The study by Basiru emphasized that for academic librarians to enhance their productivity, institutions need to invest in ICT facilities and training and ensure that the utilization is in line with the emerging digital trends around the world. The disagreement between the findings could be attributed to difference in time span and geographical location of the study.

The findings of the study indicate that there is high citation frequency of the research output of Library and Information Science Educators (LISE) of federal universities in South-East, Nigeria on the Google Scholar Database. This contradicts the finding of Orji and Anunobi (2019) which

indicated that there was low citation frequency of research outputs published by Library and Information Science Educators in Nigeria. The difference of six years in time span could be responsible for the disagreement with the findings. The present finding could be explained by the fact that, most librarians and LIS educators include collaborators and co-authors in their Google Scholar profiles to improve the citation frequency of their research outputs. The versatility of articles published by library educators broadens the audience's reach and increases the chances of their works being cited by other scholars.

Conclusion

Based on the findings of the study, it was high online visibility of research output of Library and Information Science Educators (LISE) of Federal Universities in South-eastern Nigeria on the Google Scholar Database. Library and Information Science Educators have number of quality publications indexed on Google Scholar with corresponding citations, thereby increasing the visibility and impact of their research outputs. The online visibility of research output of Library and Information Science Educators (LISE) of Federal Universities in South-eastern Nigeria on the Google Scholar Database enable their creative outputs to reach wider audience for advancement of knowledge.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. University management should develop policy of free creation of Google Scholar profiles for new and existing Library and Information Science Educators to encourage online visibility of their research output.
2. University management should engage in public enlightenment programmes through mass media to sensitize and encourage Library and Information Science Educators to publish their works in well-known and reputable journals to improve their availability on the Google Scholar database.
3. Heads of Departments should organize periodic seminars for Library and Information Science Educators on how to get more readers which could lead to increased frequency of citations.

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