



## BIBLIOMETRIC ANALYSIS OF INSTITUTIONAL AND AUTHORSHIP RANKING OF LIS PUBLICATION OUTPUTS IN WEB OF SCIENCE, 2000-2016.

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### Abstract

*This study examined the bibliometric analysis of institutional and authorship ranking of Library and Information Science (LIS) publications outputs in Nigeria from 2000-2016 in the Web of Science (WOS) database. Three objectives and three research questions were used to guide the study while a descriptive research survey design was adopted. Meanwhile a sample of 270 articles were selected as records for WOS for LIS in Nigeria through a census sampling technique which formed the population for the study. The study was limited to the use of Social Science Citation Index (SSCI) and Arts and Humanities Citation Index (AHCI) all in WOS as instrument for data collection to ascertain the top ranked author and institution and source titles in LIS publications for Nigeria while publication counts and analysis were used as method for analyzing data. The results of the study indicated that, Nwagwu W.E topped the list of 20 ranked authors and University of Ibadan topped the list of top 20 ranked institutions in LIS research in Nigeria with 22 and 76 publications respectively. Meanwhile, Electronic library topped the list of top 20 ranked source titles in LIS research in Nigeria with 61 articles while Canadienne Des Science Del Information Et De Bibliotheconomie was the lowest with 2 articles.*

**Keywords:** Bibliometric analysis, Institutional, Authorship ranking, LIS publication, Web of science

### Introduction

Publications have become the business of academic institutions which explains the academic operations and activities that take place in the academic environment. For any discipline to gain credence and recognition like the LIS, it must be up to the task in the number, and quality of publication outputs in its area to match with other similar institutions when compared. It is important to note that publication outputs in a given discipline are an indicator of its growth and progress. It also indicates the image and capacity of individuals, discipline and institution. In addition, publication outputs act as indices for global rankings when compared with others similar disciplines, and subsequently a

measure of assessment and evaluation of literature to ascertain the extent of growth and progress in the profession.

Meanwhile, a lot of challenges have been observed to advance the course of limiting the supposed gross increase and quality of publication outputs in a given discipline, such as funding of research, research collaborations, platforms for publications (source journals), research skills and expertise. These factors can limit the progress of and contribution of literature in the field of study. Although a lot of efforts have been made by individual authors to contribute in no small measures to the literature of their discipline in order to gain promotions as academic staff and advance in their field and as sole sponsors of their research and seminar, workshop and conference attendance. This ought not to be because; the motivation to achieve more publication outputs may be minimal and un-encouraging. Moreover, decreasing publication outputs in a given field does not give a good account of the discipline and does not promote recognition or visibility of individuals, discipline and institutions when ranked with other institutions. It goes contrary to the mandate of the parent institution (University) as a research hub of the society. Siddiqui, Ashiq and Shah (1997) have noted that, the usefulness of a field of study is measured by the amount and quality of research completed in the area, most importantly, bibliometric studies and methods have been used as tools to measure the scientific performance of individual authors, institutions and countries. The purpose of any research is to bring novelty in the field towards national development. Thus, publications are always expected to be of high quality in order to produce knowledge that is applicable outside the research environment. The importance of research is immeasurable because it is vital in all fields of knowledge. It prepares a researcher in taking essential decisions and brings about consistency in works. Research helps to develop new understandings that are relative to learning and teaching. It improves practice especially on individuals who are ready to improve in their chosen areas. For this study, research into publication outputs in the field of LIS would help to give insight into the profession, progress made so far, draw attention to areas of concern, examine strengths and weaknesses and be able to fashion ways of improving the profession. Although LIS studies provide solution related to the discipline, hence the need to ascertain the level of growth and impact made so far in LIS discipline through bibliometric studies and analysis becomes imperative. Therefore, based on these facts that there is a limited study of publication outputs in LIS in Nigeria, this study is being carried out to ascertain the bibliometric study of publication outputs in library and information science (LIS) in Nigeria – 2000 to 2016 using the Web of Science Database as source platform.

## **Statement of the Problem**

The poor state of LIS research funding in Nigeria has limited the profession in relation to what is obtainable globally. Research outputs are used for performance evaluation of academic staff and institutional ranking of universities across the globe. And when there is limited funding of research at the institutional level, it affects the rating and perhaps the comparative analysis by individuals and institutions with similar institutions. Meanwhile, bibliometric methods have been utilized as tools to measure and assess the level of individual and institutional progress in publication outputs over a period of time. By this, it acts as a scientific indicator for the scientific evaluation of research outputs LIS. It is in relation to this that this study seeks to investigate the bibliometric analysis of authorship and institutional ranking of LIS publication outputs in Web of Science for Nigeria from 2000 to 2016.

## **Objectives of the Study**

The main objective of this study is to ascertain the bibliometric study of publication outputs in Library and information Science (LIS) in Nigeria – 2000 - 2016 using the Web of Science Database as source platform. Specifically, to examine the:

1. Top ranked authors of LIS publication outputs in Web of Science in Nigeria.
2. Top ranked institutions of LIS publication outputs in Nigeria
3. Source titles of LIS research in Web of Science in Nigeria.

## **Research Questions**

The following research questions guided the study.

1. Who are the top ranked authors of LIS publication outputs in Web of Science in Nigeria?
2. Which are the top ranked institutions of LIS publication outputs in Web of Science in Nigeria?
3. Which source titles are used in LIS research in Nigeria?

## **Literature Review**

The productivity of different academic and research institutions has been one of the most vital indicators used in bibliometric studies. This has helped governments, funding agencies and other policy makers in sharing of resources/funds to institutions at different level towards sustainability in

research and publications nationally and internationally (Ani and Okwueze, 2017). Research patterns in LIS publications are necessary in the sense that, it provides insight into the state of the profession, the areas of concentration of research, the main institutions involved in research, the type and scope of research among other variables. Ani and Okwueze (2017) carried a study on bibliometric analysis of publications in Nigerian libraries: 2005-2014. The aim of the study is to determine the most productive institutions that published LIS research in Nigerian Libraries. Result of findings indicated that, University of Benin with (16) publications are the most productive university, followed by the University of Nigeria (12) and the University of Ilorin (9) publications. The findings of the study clearly showed that universities are the major institutions of research and publications. A researcher is expected to be visible and make impact through research findings that are published in outlets that are available to the wider scholarly community. For instance, a researcher that publishes an article in Nature will attract visibility throughout the world, given the large number of scientists that patronize the journal. Thus, every researcher endeavours to ensure that research findings are published in well-known outlets, which will only publish high quality research findings (Aina, 2016).

Ivanonic and Ho (2014) identified and analyzed the characteristics of highly cited articles published in the Information Science and Library Science category in the Social Science Citation Index. Findings showed that the most productive researcher published 11 articles. Six bibliometric indicators were used to evaluate source institutions and countries. The 13 most productive institutions were all located in the USA and Canada. Harvard University in the USA was the most productive institution, ranked number one in the total number of highly cited articles, while the University of Maryland in the USA had the highest publication performance of first and corresponding author articles. Researchers from the USA contributed 67% of highly cited articles. Ani, Ngulube and Onyancha (2017) in another study which examined bibliometric analysis of the visibility of library and information science research in Nigeria in the Web Of Science, 2000-2014, discovered that, University of Ibadan, University of Nigeria and Delta State University respectively were among the most productive universities in Nigeria. It is pertinent to note that the University of Ibadan is widely reported to lead other Nigerian universities internationally in LIS research and publications as confirmed by Ani, Ngulube and Onyancha (2017) but this is not the case nationally as found in previous study. Lin and Chiu (2012) critically studied forty years of publications from the journal of educational media and library science and discovered that, the journal published over 1,536 articles revealing the details of contents and topics. According to Ocholla, Mostert and Rotich (2016) “research visibility and quality research have largely been seen from the vantage point of research publications, particularly academic journal articles, that appear in peer refereed journals indexed by popular/ reputable international

databases such as Thompson Reuters Web of Science (WOS), SCOPUS, and Google Scholar to some degree.” A researcher is expected to be visible and make impact through his/her research findings that are published in outlets that are available to the wider scholarly community (Aina, 2016). Source titles represent publication sources such as journals or books that articles are published by researchers in the web of science. Research has become a very important component of any profession. This is because new areas need to be explored, existing practices have to be refined and more or less improved upon. Information professionals have conducted all manner of research investigations which have been reported in the literature, especially in journals published locally and abroad. A number of studies have examined the increasing importance of electronic sources in research dissemination. Bar-Ilan, Peritza and Wolman (2003) discovered that electronic sources are indispensable in modern university scholarship. The authors noted a greater use of electronic resources in a study of citation patterns in scholarly electronic journals. They however found out that online articles were more highly cited, indicating both that online availability encouraged use, and also implies that online citations are important as research linkages. According to Ani, Olanlokun, & Okwueze (2017), conducted a bibliometric study that analyzed the authorship patterns in the *Nigerian Libraries* from 1977-1985. The paper examined the geographical distribution of authors, their genders, and nature of employment. The findings indicated that most authors (80%) that published in the journal were from the western zone of Nigeria. The paper concluded that the journal remains one of the authentic links among librarians in Nigeria.

Tsay and Shu (2011) examined a bibliometric analysis on the journal of information science and the purpose of the study was to explore the journal bibliometric characteristics of the journal of information science (JIS) and the subject relationship with other disciplines by citation analysis. The citation data were drawn from references of each article of JIS during 1998 and 2008. The Ulrich's Periodical Directory, Library of Congress Subject Heading, retrieved from the World Cat and LISA database were used to identify the main class, subclass and subject of cited journals and books. The results of the study revealed that journal articles are the most cited document, followed by books and book chapters, electronic resources, and conference proceedings, respectively. The three main classes of cited journals in JIS papers were “library science,” “social sciences” and “science.” The three subclasses of non-LIS journals that were highly cited in JIS papers were “industries, land use, labour”, “mathematics,” “computer science” and “science.”

Tsay and Shu (2011) evaluated 11 years' worth of the journal of documentation and revealed the citations belonging to different classes and subclasses and noticed the domination of journal citations

in comparison to other forms of citations like books, book chapters and e-resources. Swain (2011) studied the nature and patterns of research in the journal *Library Philosophy and Practices (LPP)* and revealed that, the “authorship productivity pattern of LPP had a partial compliance with Lotka’s Law. Kumar (2014) observed that, IILR published a greater number of articles on digital literacy compared to a slip proceeding information and computer sciences, international journal of web based communities and other journals. Aina [1991] carried out a research on content analysis of papers published by African researchers in three journals which are; *The International Information and Library Review*, *Libri*, and *Information Development* from 1985 to 1989. These three journals are international journals that are published in Europe. The results of the study showed that African researchers were active in LIS research especially in areas such as library and information resources, archives, special and research libraries, library education, bibliometrics, library automation.

Tamrakar and Sharma (2007) examined 131 contributions of the journal entitled *Annals of Library and Information Studies* published during 1999-2005. The paper considered year wise, institutions wise, state wise distribution of contributions, authorship pattern, citation analysis, length of the contributions. Citation analysis of 1456 citations to find out average number of citations per contribution, types of publications cited and preparing of ranked list of cited journals in contributions of this journal among others. The study also revealed that journals are the most cited publication amongst the library and information scientists and the source journal i.e., *Annals of Library and Information Studies* is the most cited journal in the contributions of this journal. This review helped to bring to light, major/top ranked authors in the field of LIS who will set the research agenda, procedure, and set the compass for the future direction of LIS field. The findings from publication outputs in LIS may help to reveal the research interest of the profession and collection development management for librarians.

## **Methodology**

This study adopted a descriptive research design and the population for the study comprised all the 270 research articles in *Library and Information Science in Nigeria* from 2000 to 2016 that were indexed in the WOS database. Meanwhile 270 articles were records for LIS research in Nigeria. The study adopted census sampling technique where all articles in the field of LIS from 2000-2016 were selected for LIS research in Nigeria. Although Web of Science Core Citation Index published by Thomson Reuters was used as instrument/platform for data collection while two of the five citation databases: Social Science Citation Index (SSCI) and Arts and Humanities Citation Index (AHCI) were selected and used for the study.

The data obtained were analysed by country (Nigeria to be specific) and Publication counts analysis were adopted and applied to determine the productivity of authors, institutions, and source titles outlined in the search engine based on the variables of the study. Only authors indexed in the WOS database were analysed. An analysis was conducted using simple percentages.

## Results and Discussions

**Table 1: Who are the top ranked authors of LIS publication outputs in Web of Science in Nigeria?**

S/N	Authors	Number of publications	Total Number of Citations	% of 270
1.	NWAGWU, W. E.	22	78	8.148
2.	BARO, E. E.	8	37	2.963
3.	POPOOLA, S. O.	7	13	2.593
4.	TELLA, A.	7	30	2.593
5.	ASOGWA, B. E.	6	27	2.222
6.	ODUWOLE, A. A.	6	20	2.222
7.	TIAMIYU, M. A.	6	9	2.222
8.	ADOMI, E. E.	5	27	1.852
9.	EZEMA, I. J.	5	18	1.852
10.	OLATOKUN, W. M.	5	24	1.852
11.	ANI, O. E.	4	39	1.481
12.	EHIKHAMENOR, F. A.	4	42	1.481
13.	OKAFOR, V. N.	4	9	1.481
14.	OMEKWU, C. D.	4	21	1.481
15.	UGWOKE, B. U.	4	3	1.481
16.	OJOKOH, B. A.	3	3	1.111
17.	OKIY, P. B.	3	19	1.111
18.	OLORUNSOLA, R.	3	5	1.111
19.	OPARA, U. N.	3	13	1.111
20.	OPEKE, R. O.	3	1	1.111

In this table 1, 20 authors were ranked as the top-most authors that published the highest number of articles in the Web of Science database over a period of 17 years (2000-2016) in Nigeria. Nwagwu, W. E. tops the group with 22 articles and 78 citations; followed by Baro, E. E. with 8 articles and 37 citations. Tella, A. with 7 articles and 30 citations is compared with Ani, O. E. 4 articles with 39 citations, Ehikhamonor, F. A. with 4 articles and 42 citations respectively. Although, Opeke, R. O. 3 articles, 1 citation, Olorunsola, R. 3 articles, 5 citations and Ojokoh, B. A. 3 articles, 3 citations were ranked lowest, though, among the top 20 authors from the Table 1, evidence that, the more number of publications does not guarantee more citations, instead, the impact factor of a given articles determines how much citations it gets.

During the period under study 2000 – 2016, about 50 Nigerian authors contributed to 270 articles

indexed in the WOS database in LIS publications for Nigeria. Generally, In a given field most authors publish only a few articles whereas a few authors publish many articles. Yet, those authors who published majority of the articles especially for this study are regarded as top ranked authors or in most cases are called most prolific authors. The field of LIS is not an exception as Table 1 explains the top 20 authors of LIS in Nigeria according to the number of publications they have made from 2000-2016. It is generally believed that most top authors get more citations compared to non-top authors. Surprisingly, this is different in most cases. A look at the number of citations in this study indicates that, the more number of publications does not necessarily make for more citations but the impact factor of a given publication can earn more citation value than ordinary more publication value.

**Table 2: Which are the top ranked institutions of LIS publication outputs in Web of Science in Nigeria?**

S/N	Institutions	Number of publications	% of 270
1.	University of Ibadan	76	28.148
2.	University of Nigeria, Nsukka	27	10.000
3.	Delta State University	22	8.148
4.	University of Ilorin	14	5.185
5.	Obafemi Awolowo University	11	4.074
6.	University of Lagos	11	4.074
7.	University of Agric. Abeokuta	10	3.704
8.	University of Calabar	9	3.333
9.	Niger Delta University	9	3.333
10.	Babcock University	6	2.222
11.	Redeemers University	6	2.222
12.	Federal University of Technology, Akure	5	1.852
13.	Lagos State university	5	1.852
14.	Covenant University	4	1.481
15.	Federal Polytechnic	4	1.481
16.	University of Benin	4	1.481
17.	Abia State University	3	1.111
18.	Afe Babalola University	3	1.111
19.	Bayero University	3	1.111
20.	Bowen University	3	1.111

Table 2 shows list of 20 top institutions that contributed significantly in LIS research in Nigeria for the period of 17 years. Records in Table 2 indicates that University of Ibadan topped the list with 76 publications (28.148%) of the total publications, followed by University of Nigeria with 27 articles (10.000%), Delta State University with 22 articles (8.148%), University of Ilorin with 14 articles (5.185%), respectively. Bayero University with 3 articles, Abia State University with 3 articles, Afe Babalola

University with 3 articles and Bowen University with 3 articles were among the low ranked



institutions.

Several institutions (Universities, Polytechnics, Colleges and Libraries) and professional bodies are involved in LIS research in Nigeria. In this study, 162 institutions, government agencies and professional bodies contributed to the 270 number of articles indexed for LIS publications in the WOS database for Nigeria. Although the contributions of individual institutions varied, hence the assessment or evaluation of the top 20 institutions is significant in this study. Other agencies and professional bodies were not left out; among these are, the Central Bank of Nigeria (CBN), National University Commission (NUC), National Institute for Nigerian Language (NINL) and National Library of Nigeria (NLA) among others also engaged in LIS research in Nigeria. Analysis of results from the WOS database indicated that academic institutions topped though among the top 20 institutions in LIS research in Nigeria.

**Table 3: Which source titles are used in LIS research in Nigeria?**

<b>Rank s</b>	<b>S/N</b>	<b>Sources titles</b>	<b>Number of publications</b>	<b>%</b>
1 <sup>st</sup>	1.	Electronic Library	61	22.593
2 <sup>nd</sup>	2.	African Journal of Library Archives and Information Science	58	21.481
3 <sup>rd</sup>	3.	Information Development	19	7.037
4 <sup>th</sup>	4.	LIBRI	16	5.926
5 <sup>th</sup>	5.	Journal of Information Science	12	4.444
6 <sup>th</sup>	6.	Malaysian Journal of Library and Information Science	11	4.074
7 <sup>th</sup>	7.	Programme Electronic Library and Information System	9	3.333
8 <sup>th</sup>	8.	International journal of Information Management	8	2.963
9 <sup>th</sup>	9.	Journal of Academic Librarianship	7	2.593
10 <sup>th</sup>	10.	Health Information and Libraries Journal	6	1.222
11 <sup>th</sup>	11.	Journal of Librarianship and Information Science	5	1.852
12 <sup>th</sup>	12.	Interlending Document Supply	4	1.481
12 <sup>th</sup>	13.	Learned Publishing	4	1.481
12 <sup>th</sup>	14.	Library Collections Acquisition's Technical Services	4	1.481
13 <sup>th</sup>	15.	Information Technology for Development	3	1.111
13 <sup>th</sup>	16.	Journal of Global Information Technology management	3	1.111
13 <sup>th</sup>	17.	Journal of Knowledge Management	3	1.111
13 <sup>th</sup>	18.	Library Hi Technology	3	1.111
13 <sup>th</sup>	19.	Portal Libraries and the Academy	3	1.111

14 <sup>th</sup>	20. Canadian Journal of Information and Library Science Revue Canadienne Des Sciences Del Info. Et De Bibliotheconomie	2	0.741
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Records in Table 3 showed that, the topped 20 source journal titles that Nigerian authors in LIS field preferred to publish. Electronic Library topped the list with 61 articles (22.593%), followed by African Journal of Library Archives and Information Science with 58 articles (21.481%), Information Development with 19 articles (7.037%), LIBRI with 16 articles (5.926%) and Journal of Information Science with 12 articles (4.461%), respectively. Canadian Journal of Information and Library Science Revenue have 3 articles (1.111%) and Canadienne Des Science Del Information Et De Bibliotheconomie was the least on the list with 2 publications (0.741%) during the period of the study.

### Discussion of Findings

The top 20 active authors of LIS in Nigeria are of different institutions of which explained the level of individual and organizational contributions in LIS publications. During the time span of this study, about 50 Nigerian authors/researchers contributed to 270 papers in Nigerian LIS journals indexed in the WOS. In most cases, in a given subject, most authors publish only few articles whereas a few authors publish many articles and are regarded as top/most prolific authors. The findings of this study revealed that, the top 20 ranked authors of LIS publications in Nigeria according to the number of publications they have made during 2000-2016. It is observed that, most Nigerian researchers publish their works in un-indexed platforms which does not have impact factor or value. Most researchers have argued that ‘‘publication in journals with IF may not be an important indicator of research excellence and is not also a key factor for measuring research performance; whereas, this is extremely vital for developing countries like Nigeria which has national and regional journals that are not indexed in ISI - Web of Science’’ (Bordonset *al.*, 2002). In such countries, researchers like to publish in local or regional journals to attract national audience rather than international audience. Nigerian authors/researchers need to change the narrative and be positioned to publish in journals indexed in certain database like WOS, google scholar, and Scopus. By this, Nigerian researches will gain international recognition in global evaluation and rating of both individual and organizational

affiliations.

The top 20 active institutions of LIS in Nigeria are recognized in this study because they published the highest number of articles in the WOS database. The total of 162 institutions (Universities, Colleges and Polytechniques), government agencies and professional bodies (NLA), and libraries contributed to the 270 articles in the WOS database for the period of 2000-2016 in LIS research in Nigeria. The findings of this study revealed that, the outputs in the field of LIS are highly concentrated among only a few institutions, such as Universities and Libraries.

Further analysis of data indicates that, of the 20 ranked institutions listed, University of Ibadan was top in the list with 76 articles (28.148%), while University of Nigeria followed with 27 articles (10.000%), Delta State University with 22 publications (8.148%) and University of Ilorin with 14 publications (5.185%), respectively. While Bowen University, Bayero University, Afe Babalola University and Abia State University were among the lowest published institutions with 3 publications each (1.111%) at the bottom. It is imperative to note that, most of the universities published differently from their libraries but were calculated as one because they have the same institutional names and cannot be treated separately. For instance, Delta State University had 14 articles while Delta State library had 8 articles. Similarly, Niger Delta University library had 5 publications while the University (NDU) had 4 publications.

It was revealed that, over 45 LIS journals are used in publishing by Nigerian authors in the WOS database. For this study, the researcher was more concern about the top 20 ranked source titles for LIS research in Nigeria in WOS. Findings revealed that, Electronic Library topped the list with 61 articles (22.593%) as the first ranked source title, while the African Journal of Library Archives and Information Science followed with 58 publications (21.481%) as the second ranked source title. Information Development with 19 articles (7.037%) as third ranked source title and LIBRI with 16 articles (5.926%) and Journal of Information Science with 12 articles (4.461%) as fourth and fifth ranked source titles respectively. Meanwhile the Canadian Journal of Information and Library Science Revenue with estimate of 3 articles (1.111%) and Canadienne Des Science Del Information Et De Bibliotheconomie with 2 articles (0.741%) were adjudged to be the lowest ranked publication source title in the list of top 20 ranked journals. According to Bordons *et al.* (2002), most authors especially

in humanities like to publish in local or national journals rather than international journals. According to Mullen (2008) in Aina (2016), publishing in journals that are indexed by WOS, Google scholar and Scopus can make a publication prestigious and have impact factor”. This in other words can cause such journals with impact factor to enjoy more citation than other journals and are considered significant. Those publishing in such journals provide extreme exposure and impact in the discipline. “Publishing in a quality journal attract recognition for the author, institution he/she represents and the country” (Aina, 2016). It further provides the necessary visibility to the researcher. Nigerian researchers are strategically positioned to publish in journals indexed in WOS, google scholar and Scopus to earn the needed research recognition for their effort.

## **Conclusions**

Bibliometric analysis of publication outputs has become a new research area for LIS professions to explore. It is meant to measure scientific performance of individual authors, institutions, source journal where researchers publish their works and countries and citation patterns of researchers. It is believed that, by measuring and assessing the various aspects of an article, bibliometrics becomes a veritable instrument for annual global ranking of universities across the globe. By this, it becomes a measure of quantity and quality of publication outputs to a given field which x-rays the impact and progress in a particular profession. Moreso, productive outputs of publications from a given institution or country can be adjudged to represent the image of its research capacity and activity.

## **Recommendations**

The following recommendations are made to facilitate the efficiency of bibliometrics in assessing every aspect of a written publication:

1. Researchers should endeavour to publish in journals that have impact factor like journals indexed in the Web of Science, Scopus and Google scholar.
2. Institutions/government should as a matter of urgency intensify effort in funding and sponsorship of research; this will help to put the individual, institution of affiliation and the country at large at a high level in the world global research community.

3. Workshops, seminars and conferences promote scholarly research should be encouraged by institutions through sponsorship and grants.

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