Bibliometric Analysis of Publications in *Nigerian Libraries*: 2005-2014

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Abstract: A ten year bibliometric analyzes was conducted from 2005-2014 to examine patterns of publication in *Nigerian Libraries*, a frontline national journal in library and information science (LIS) research and publication in Nigeria, published by the Nigerian Library Association (NLA), a professional body of LIS researchers in Nigeria. The objectives of the study were to determine the most productive authors and institutions, extent of research collaboration and trend in keywords/themes/research areas. The results of the study revealed the 7 most productive authors that published in *Nigerian Libraries* with minimum of 3 papers. In terms of the most productive institutions, the University of Benin, the University of Nigeria, and the University of Ilorin topped the list of the most productive institutions that published in the *Nigerian Libraries*, while there was a balance between single authorship (50.0%) and joint authorship (collaboration) (50.0%) in published papers. The dominance major keywords/themes/research areas in the study were information technology/information and communication technology, library and information services, and library automation/computerization. The paper concluded that, LIS researchers in Nigeria would in the nearest future join their counterparts in the world to embrace research collaboration. Based on the findings of the study, it was recommended that, there should be increased funding of LIS research by stakeholders towards increased in productivity among LIS researchers and institutions in Nigeria.

Keywords: Collaboration, LIS Research, Publication, Productivity, Nigeria

1. Introduction

Bibliometrics has been used as a major tool to study progress and development of different academic disciplines/fields in the world including library and information science (LIS). It is typically used in evaluation of research and publications among scholars by authorship, discipline, institution, country or region. Thus, bibliometric methods are used in exploring and analyzing research productivity and the impact of publications in a given field. Research evaluation through bibliometric studies is essentially used by different organizations/institutions (universities) and governments for policy formulation to support research funding and promotion of staff. Hence, bibliometric study is used as a tool for national and international integration and development as it provides a link between the publication outputs from a country and its wealth, as expressed by its Gross Domestic Product (GDP) [1]. In addition, bibliometric studies facilitate the generation of information to support research and development (R & D) in each country. According to Kawatra [2], bibliometrics is a quantitative method that is used to study scientific communication process by measuring and analyzing various aspects of publications especially in a given discipline or field. According to Swain [3], several bibliometric studies have been carried out on individual journals in different fields such as library and information science (LIS) to highlight patterns of publication institutionally, nationally, regionally and globally. Hence, this study is carried out to examine patterns of publication in the *Nigerian Libraries*, a foremost LIS journal in Nigeria that is published by the Nigerian Library Association (NLA), a professional body of LIS researchers in Nigeria. The objectives of the study are as follows:

(1) To determine the most productive authors and their institutions,

(2) To determine the most productive institutions,

(3) To determine the extent of research collaboration in authorship pattern, and

(4) To determine major keywords/research areas of published papers in the journal

2. Literature Review

A number of studies have been conducted on bibliometric analysis of publication patterns of individual journals in library and information science (LIS) around the world [3, 4, 5, 6] and Africa (Nigeria) in particular [7, 8, 9, 10, 11, 12, 13]. Aharony [5] did bibliometric analysis to examine authorship patterns in the top ten journals in Library and Information Science (LIS) including core research areas. A content analysis of articles published in top ten journals from 2007-2008 was carried out with the results indicating that most articles in the journals were published by two-authors (35.76%) and was followed by single authors (28.72%), the paper concluded that authorship pattern was in favor of collaboration. Further findings of the study revealed that leading authors in LIS research were from North America (37.60%) and Europe (36.70%); with only 0.40% and 0.16% from South Africa and the rest of Africa respectively. Swain [3] did a study that evaluate publication patterns of a journal, *Internet Research* from 2008 to 2012 with the findings of the study revealing preference for collaborative research, and this was led by three-author papers (33.78%), two-author papers (32.43%), single-author papers (16.22%) among others. Swain [4] examined the publication patterns of *International Information and Library Review* from 2004 to 2013. The aim of the study was to predict the impact and influence of the journal in the field of library and information science under the period of study. The findings of the study indicated that majority of papers published in *International Information and Library Review* were made up of single authors followed by two-authorship papers; and there were less papers published by three authors and more than three authors respectively. The University of Pittsburg and University of Wisconsin all in United States were institutions with highest number of authors with 12 authors and 10 authors respectively and followed by the Universiteit van Pretoria of South Africa and University of the Punjab Lahore of Pakistan with 7 authors each. In terms of geographical spread of contributors in the journal, the United States and India were the leading countries with 63 and 61 authors respectively; these were followed by Nigeria and China with 15 papers apiece, and South Africa with 14 papers. However, it was found that the most prolific author Britz, J. J. with five papers came from South Africa. Swain, Swain and Rautaray [7] examined patterns of publications in the *Journal of Educational Media and Library Science* from 2008 to 2012. The results of the study indicated that the two-author papers led the authorship pattern in the journal, followed by single author papers and three-author papers. The major themes in the journal were bibliometrics, information literacy and digital archive. Mukherjee [6] carried out a bibliometric

analysis of the *Journal of American Society for Information Science and Technology* from 2000-2007 to examine the distribution of articles in terms of authorship patterns and nature of collaboration, and geographic distribution of papers. The findings of the paper revealed that the authors from the US and the UK dominated publication of papers published in the journal, and Nigeria was also listed among the 47 countries that published articles in the journal. It was found that the highest proportion of articles were by single authors (35.59%) followed with 2 authors (33.64%), 3 authors (16.10%) and 4 or more authors (14.68%). The paper concluded that trend of authorship pattern of the articles in the journal is toward collaboration as 64.41% articles were published by joint authors (2 or more authors). Similar results were obtained from Koehler (2001) as cited by Mukherjee [6]. Koehler (2001) reportedly found a declining trend in the proportion of single author papers from 44.76% in 2000 to 34.08% in 2007 in papers published in the *Journal of American Society for Information Science and Technology*. Murkherjee [6] has attributed the increasing trend in research collaboration to emergence of information and communication technology (ICT).

Olanlokun [8] 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. Aina [9] did a content analysis of papers published by African researchers in three journals which include *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 are active in LIS research especially in areas such as library and information resources, archives, special and research libraries, library education, bibliometrics, library automation etc. Scholars [10, 11, 12] have carried out content analysis on papers published in the *Journal of Library, Archives and Information Science*, a foremost LIS journal in Africa published in Nigeria. Aina and Mabawonku [10] analyzed published papers in the journal to explore characteristics of the authors, research trends and citation patterns in their study. The findings of the study indicated that majority of papers in the journal were of single authorship; focused on librarianship, archives, and information resource. It was recommended that academic libraries should develop effective collection development policy to support LIS research in Africa. Alemna [11] examined the patterns and directions of library and information profession in Africa. The study found an increasing trend in the number of LIS professionals that are active in research and publications in Africa. The authorship pattern by country showed that most authors were from Nigeria (36.7%), Ghana (11.4%), Botswana (10.1%) and South Africa (10.1%). The paper concluded that the journal is

vital in the promotion of LIS research and publication in Africa. A study by Mabawonku [12] sought to determine the changing trends in LIS research in Africa by analysis of papers published in *Journal of Library, Archives and Information Science*; the paper reported an increasing trend in papers published in the journal especially in areas of information science, archives and publishing.

3. Research Methodology

A ten year bibliometric analysis was conducted in the *Nigerian Libraries* from 2005 to 2014 using content analysis as a research method. The *Nigerian Libraries* is currently published by the Nigerian Library Association, a professional body of all LIS researchers in Nigeria. The journal was first published in 1964 in print and up till date it is yet to appear in electronic format on the Internet in spite of the digital revolution in publishing and the fact that, the journal is currently being funded by Tertiary Education Trust Fund (TETFUND). The journal is published twice in a year (that is, two issues per volume annually), although, some of the volumes of the journals within the period of this study combined the two issues. The volume 39 of the journal was a combine volume for 2005/2006 (that is volume 39, 2005/2006); from 2007 to 2010, there was only one issue in each of the volume per year; and from 2011 to 2014, the journal published the regular two issues in a volume per year. However, the 2011, Volume 44 Issue no. 1 was not available in our records, and consequently, this Issue was not included in this study.

4. Results and Discussion

Data analysis was based on the objectives of the study which include most productive authors and their institution, most productive institutions, extent of research collaboration,

and major keywords/themes/research areas of published papers in the journal.

4.1. Most Productive Authors and Their Institutions

The career advancement of authors especially in academic and research institutions (such as universities) is basically determined by their productivity through research and publications. Besides, productivity (publication output) enhances the visibility of authors in their disciplines at national and international levels. In view of relevance of productivity of authors in bibliometric studies in global perspective, it was necessary to examine the authorship pattern in the study in terms of most productive authors in the *Nigerian Libraries*. The results of the study in table 1 show the 7 most productive authors that published in *Nigerian Libraries* with the minimum of 3 papers with the period of the study (2005-2014). It was found that Samuel Ogunrobi from the University of Ibadan with 5 articles is leading other 6 authors as the most productive author. The result of this study is consistent with a recent study by Ani, Ngulube and Onyancha [14] who found Nwagwu, W. E. with 17 papers from the University of Ibadan as the leading the league of most productive author in the study. Further analysis by universities indicates that Delta State University (Esharenana E. Adomi and Ngozi Blessing OssaUgba) and University of Nigeria (Roseline I. Eschezonah and Reuben E. Ozioko) are the leading universities in the number of most productive authors with 2 most productive authors each. The results of this study are however in contrast from that of Ani, Ngulube and Onyancha [14] who found the University of Ibadan as producing the highest number of the most productive authors (3 most productive authors), with Delta State University, Niger Delta University, and University of Agriculture, Abeokuta, with 1 most productive author each.

Table 1. Most productive authors and their institutions.

Rank	Name of author	Number of articles	Institution
1	Samuel Ogunrobi	5	University of Ibadan, Ibadan
2	Esharenana E. Adomi	3	Delta State University, Abraka
2	Roseline I. Echezonah	3	University of Nigeria, Nsukka
2	Ezra Shiloba Gbaje	3	Ahmadu Bello University, Zaria
2	Chuma Opara Nnadozie	3	Michael Opara University, Umudike
2	Ngozi Blessing Ossai-Ugba	3	Delta State University, Abraka
2	Reuben E. Ozioko	3	University of Nigeria, Nsukka

4.2. Most Productive Institutions

The productivity of different academic and research institutions has been one of the most vital indicators used in bibliometic studies. This has helped governments, funding agencies and other policy makers in sharing of resources/funds to institutions (in different disciplines) towards sustainability in research and publications nationally and internationally. Hence, the paper sought to determine the most productive institutions that published LIS research in

Nigerian Libraries. The results of the study are presented in table 2 showing the University of Benin (16) as the most productive university, followed by the University of Nigeria (12) and the University of Ilorin (9). The findings of the study have clearly shown that universities are the major sources (institutions) of research and publications as all the most productive institutions are universities. However, the findings of the study are in contrast with that of Ani, Ngulube and Onyancha [14] who found the University of Ibadan conspicuously leading other Nigerian universities as the most

productive university, while the University of Benin was apparently missing in the list of most productive universities. The University of Nigeria and Delta State University are however listed in both studies as being among most productive universities. It is obvious to note that the University of Ibadan has been widely reported to lead other Nigerian universities in internationally in LIS research and publications as confirmed by Ani, Ngulube and Onyancha [14] but this is not the case nationally as found in this study.

Table 2. *Most productive institutions.*

Rank	Institution	No. of articles
1	University of Benin, Benin	16
2	University of Nigeria, Nsukka	12
3	University of Ilorin, Ilorin	9
4	Ahmadu Bello University, Zaria	7
5	Delta State University, Abraka	6

4.3. Extent of Research Collaboration in Authorship Pattern

Scholars [13] have enumerated the benefits of research collaboration to include sharing of skills and techniques, transferring of knowledge, and intellectual companionship.

Thus research collaboration which was over the years being predominantly practiced in scientific disciplines is being embraced in LIS research. This brought the rationale to examine the authorship pattern in the study in terms of research collaboration. The results of the study in table 3 show the extent of research collaboration in authorship pattern in the *Nigerian Libraries*. The published papers in the journal are dominated with the single author papers (50.0%), followed by two authors' papers (34.5%), three authors' papers (11.9%) and papers with 4 authors and above (3.6%). In summary, the papers in the journal were distributed evenly between the single author's papers (50.0%) and joint or co-authored papers (50.0%). The results of the study align with that of previous studies [14, 5] that revealed dominance of single authors' papers in LIS research. The results obtained by Aina and Mooko [15] showed that 79.6% of publications in their study were published by single authors while Mujkerjee [6] found that the highest proportion of articles in his study was led by single authorship (35.59%). However, Mukherjee [6] had reported drastic decline in single authors' papers (35.59%) in favor of joint authors or co-authored papers (64.41%). Koehler (2001) cited by Mukherjee [6] had also reported a decline in single authors' papers towards joint authorship or collaboration.

Table 3. *Extent of research collaboration in authorship pattern.*

Year/Volume	Single Author	Two authors	Three authors	4 authors and above	Total
2005/2006	4	2	0	0	6
2007	4	1	0	0	5
2008	4	1	0	0	5
2009	3	1	0	1	5
2010	3	1	2	0	6
2011	2	3	1	1	7
2012	8	8	2	0	9
2013	6	6	2	1	15
2014	8	6	3	0	17
Total	42 (50.0%)	29 (34.5%)	10 (11.9%)	3 (3.6%)	84

4.4. Major Keywords/Themes/Research Areas

Within the past two decades or so, scholars have researched on trends in subject/research areas in LIS in Africa [10, 15] and in global perspective. In this paper, the trend in themes/keywords/research areas in *Nigerian Libraries* was examined. Analysis of the results has revealed the four major themes/keywords/research areas in the study to include information technology/information and communication technology (17), library and information services (8), library automation/computerization (6), information needs (4), library education (4), and academic libraries (4). The findings of this study indicate that information and communication technology has become a popular and vital research area in LIS research in Nigeria in recent time. These results confirm the findings of previous study by Aina and Mooko [15] that information technology (or ICT) is a widely research area in LIS in Africa. The dominance of ICT in LIS research is attributed to the widespread application of ICT in the provision of library and information services in libraries in Nigeria.

Table 4. *Major keywords/themes/research areas.*

Sn	Themes/Keywords/Research areas	Frequency
1	IT/ICT	17
2	University/Academic Libraries	12
3	Library and information services	8
4	Library automation/computerization	6
5	Information needs	4
6	Library education	4

5. Conclusion

Bibliometric study is a vital tool in the study of patterns in research and publications in journals across different field of knowledge including library and information science globally. This study was conducted to examine patterns of publication in the *Nigerian Libraries*, a foremost journal in LIS in Nigeria published by the Nigeria Library Association (NLA). The results of the study have revealed the 7 most productive authors that published in *Nigerian Libraries* with the minimum of 3 papers with Samuel Ogunrobi from the

University of Ibadan with 5 articles being the most productive author. In terms of the most productive institutions, the University of Benin (16), the University of Nigeria (12) and the University of Ilorin (9) topped the list of most productive institutions that published in the *Nigerian Libraries*. The need for research collaboration is currently a global phenomenon; however, the findings of the study revealed that half (50.0%) of the papers in the study were single author's papers while the other half (50.0%) were joint authorship. Based on the findings of this study it is concluded that, LIS researchers in Nigeria would join their counterparts in the world to embrace research collaboration. The three major keywords/themes/research areas in the study are information technology/information and communication technology (17), library and information services (8), and library automation/computerization (6).

In line with the findings of this study, the following recommendations are made:

(1) There should be increased funding of LIS research by stakeholders towards increased and sustainable productivity among LIS researchers and institutions.

(2) Research collaboration should be encouraged among LIS researchers in Nigeria to enable Nigeria to be integral part of the global research community where collaboration is the norm in modern research.

(3) Stakeholders should encourage regularity in publication of the *Nigerian Libraries* with the ultimate goal of publication of the journal online in line with the global practice and digital revolution due to electronic publishing where print journals are transiting to electronic format for global accessibility and visibility.

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