

Citation Analysis of serials in Postgraduate Research Theses and Dissertations of Library and Information Science of Public universities in Southeast, Nigeria

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ABSTRACT: *This study is a citation analysis of serials in postgraduate research reports of library and information science of public universities in Southeast Nigeria from 2013 to 2021. The study was guided by six research questions in line with the objectives of the study. The study employed a descriptive survey design with a sampled population of 296 derived through census method from four public universities offering library and information science. The principle instruments used in collecting data for this study were self-designed checklists. With the checklists, 12455 serials citations were analyzed using descriptive statistics of mode, mean and range and data presented in tables, charts and graphs using frequencies and percentile. The study found that the most cited serials types were journals with 76.5% citations followed by conference proceedings/reports with 20% and the least cited being government publication with only .5 citations . It was further discovered that serials used were either in print or electronic form. . The study also revealed that multi authorship is the most frequently cited author pattern in library graduates theses and dissertations, while annual serials citations range from 1034 to 2205. The study indicated that the average age of serials used was within the bracket of 0 – 20 years. The study recommended among other things that there should be documentation librarian in each university library whose duty should be to track down research reports, ensuring proper documentations and upward delivery to the university library circulation unit. This study could serve as a collection development tool that can be used as a model for the library to identify the primary sources for acquisitions and also as a guide for collection maintenance*

KEYWORDS: serials, citation analysis, dissertations, theses, postgraduate, library and information science. university library

INTRODUCTION

In every university library, serials are one of the most important and useful collections (Purdue University Library, 2021). Serials which include, journals, magazines, newspapers, memoirs, indexes abstracts, reviews, news bulletins, proceeding and reports are publications in printed form or not, issued in successive parts usually having numerical or chronological designation and intended to be continued indefinitely thus regarded as the nerve-centre of any university stock for research because they contain the most up-to-date primary information on research and knowledge (According to American Library Association, 2021).

Generally, research is accompanied by a written account of the research procedure, an outcome known as research reports. In academics, at higher degrees, a research report is a document that presents the author's research findings and is submitted in support of candidature for a degree or professional qualification. It is the main idea of one's research and is normally the culmination of a candidate's research; submission of the research report represents the completion of the final requirement for the postgraduate degree being pursued. The research reports for the purpose of this study include thesis and dissertation. Thesis is a proposition, a reasoned argument, which involves a comprehensive research on a theme connected with the specialty of a candidate for any of certain academic degrees, while dissertation is a formal discourse, written or spoken, a treatise, especially an original piece of research together with course work where research predominates over course work and constitutes not less than two-third of the total credit load (Webster, 2015).

The assertion is that the more research reports a university has produced, the more influence it may have on the advancement of knowledge and greater influence it has in the subject field. Researches carried out at postgraduate level have much to offer to the development of the society. Most postgraduate research reports are not mere partial fulfilment for degree awards but are aimed at providing answers to questions envisaged in our society in which case, they are expected to cite or make references to other people's work to substantiate their stand. Some of the works to be cited are in information sources such as serials.

The emerging focus on the giving of references in contemporary scholarship coincides with the development of a new culture in science: the citation culture. Citation culture is the present-day ensemble of norms, rules, practices and interpretations which are invoked by researchers every time they cite someone's work, entertain complex relationship with one another (Wouters, 1999). As information experts, librarians have usually been challenged in the ability to generate, organize, make accessible, analyze and evaluate information resources in a way the researchers would find useful. Consequently, librarians have recognized citation analysis as a very useful technique for proper analysis and evaluation of research outputs, leading to its growing acceptance for research evaluation.

Citation Analysis as a process, involves using quantitative data derived from the use of citations (bibliographies, works cited, or reference pages in books, articles, or other publications) to analyze the scholarly impact of a researcher, a group of researchers, or a publication. As expressed by University of Illinois Library (2021), citation analysis has been found to be useful in investigating the coverage of library acquisitions and for research evaluation, investigating how the cognitive content and social structures of scientific theories developed; and evaluating research in terms of individual output, institutional output or geographical output.

It is disheartening to state that despite the accrued gains of citations analysis and importance of serials in researches, there are evidences that there is inadequate and some cases, lack of analysis of serials citations of postgraduate theses and dissertations in library and information science in the past years in most public universities in Nigeria. The worst scenario is that there is no data showing that these universities are providing citations analysis of references in theses and dissertations generally.

In consideration of the above situations, the researcher felt that there is a gap that needs to be filled in this area of knowledge hence the need for a study on analyzing serials' citations of library and information science of postgraduate research reports titled 'Citation analysis of serials in postgraduate research reports of library and information science from 2013 to 2021 using four public universities in Southeast, Nigeria as sampled population of study

Statement of Problem

Libraries that want to provide the greatest possible access to the greatest possible breadth of resources need to know and understand the resource needs of their users. Faculty research interests may be identified from lists of faculty publications, faculty handbooks, and faculty requests for material purchase but research needs of graduate students can be more difficult to understand. Analysis of dissertation and thesis reference lists is one approach used to measure library use by graduate students, who are traditionally frequent and heavy library users. In general dissertations are considered as valuable road signs to the literature of a discipline (Cox, 2008). Dissertations clearly indicate the needs of graduate students and also indicate the research specialties of the faculty and department as a whole. With ever increasing cost of library resources and the limited library budgets, the librarians are faced with the challenge of making decisions on collection development. This is increasingly difficult as serials subscriptions are rising up continuously under limited shrinking budget. To fight this great challenge citation analysis is seen as a veritable tool. This is because, citation analysis can act as a tool for selecting and de-selecting materials as it provides insight into the materials that are selected by various user groups. It can be a useful technique for identifying potential collection development weaknesses also (Rethiefsen, 2007). Furthermore, many university libraries are under pressure to making difficult decisions regarding older materials sitting on shelves, including serials. Lacking of shelving space is one of the critical problems faced by university libraries in Southeast Nigeria at present. In order to make decisions on what materials should be in the shelves and what can be moved out of the shelves can be assessed by examining the age of cited resources by library users.

Furthermore, as a librarian, it has been observed that there is inadequate and in some cases lack of analysis of serials citations of postgraduate theses and dissertations in Library and Information Science in the past years. This development negates the vision of knowledge enhancement and to the researcher is a clarion call that there is the need to update our knowledge in citation analysis of serials in order to throw more light on the processes, procedures and their development by counting and analyzing the various constructs which are, types of serials, range of citations, recency of titles cited, most cited titles and availability of these serials as to avoiding unwanted repetition of some areas. Worst still, there is no recent data showing that these universities are providing citation analysis of references in theses and dissertations let alone that of serials and there is insufficient knowledge on areas researched as to knowing areas yet to be researched so as to ensure proper citation analysis constructs coverage.

Present study which is an analysis of serials citations in postgraduate theses and dissertations of library and information science students in public universities in Southeast Nigeria from 2013 -2021 therefore is a step toward bridging some of these gaps.

Research Objectives

The main purpose of this study is to determine serials citations in postgraduate research reports through analysis of cited serials in postgraduate theses and dissertations in Library and Information Science. Specifically the following objectives are intended to be achieved;

- i. Identify serials cited in postgraduate research reports
- ii. Establish the formats of serials cited
- iii. Determine the most frequently cited serials in postgraduate theses and dissertation
- iv. Determine according to years the distribution of serials citations in masters' and doctoral research reports ;
- v. Ascertain the recency of cited serials in both theses and dissertations (age of serials cited)
- vi. Identify most frequently cited authorship patterns in the postgraduate theses and dissertations.

Research Questions

The study was guided by the following questions

- i. What types of serials are cited in postgraduate theses and dissertations?
- ii. What are the formats of serials cited in postgraduate theses and dissertations?
- iii. Which serials types are most frequently cited in postgraduate theses and dissertation?
- iv. What is the yearly distribution of serials citations in master's and doctoral theses and dissertations?
- v. How recent (age of serials) are the serials cited in the postgraduate theses and dissertations?
- vi. Which authorship patterns are most frequently cited in the postgraduate theses and dissertations?

Scope of the Study

This study covered all theses and dissertations submitted to the Departments of Library and Information Science in four public universities in Southeast Nigeria from 2013 to 2021. . This study specifically focused on citation analysis of serials as it concerns; types and forms of serials cited; the timeliness of serials cited (ages of material cited), annual distribution of serial citations and authorship pattern in postgraduate research reports in public universities in Southeast, Nigeria.

REVIEW OF RELATED LITERATURE

It is generally acknowledged that serials play important role in research in that they contain the most current and vital information on the various disciplines. As result, they are regarded as primary sources of information on research undertaken in any given field (Serema and Mooko, 2002),. It is therefore seen as serving as fountain of knowledge, sources of vital information and highly meant to fill a specific gap in communication (Adeoye, 2004). The assertion is that scholarly journals are principal medium for reporting research findings and assist in ongoing researches to identify possible topics for future research. The outputs of the researchers are likely to come out in form of theses, books/monographs, journal articles, proceedings, reports, and lectures among others which will go back to populate the information sources in the library (Ashman, 2019).

Original research results are typically formally communicated through publications. Thus, publications can be regarded as proxies of scientific progress at the research front (Moed, 2005). They do, however, not capture the entire spectrum of scientific activity. Given this central importance of articles for scholarly communication, sociological research has considered that, by counting papers, we obtain an indicator of research activity. According to Aksnes (2019), citations are increasingly used as performance indicators on research policy and within the research system. Usually, citations are assumed to reflect the impact of the research or its quality. Citations therefore, are references made to textual work from the perspective of the citing article.

The assertion is that citations analysis is used to determine collections' use by students in academic libraries. Suffice it to say, that citation analysis serves as invaluable tool in the assessment of library collection and also utilized in the understanding of subject relationship, author effectiveness, publication trends and user behaviour. Furthermore, faculties employ the process when searching for journals to publish their research, locating important journals and weighing the influence of a particular journal in a discipline (Anunobi, 2002; Haycock, 2004).

Citation analysis has further been found to be of immense benefit to university libraries especially as they serve as custodians of information resources in the university. In that, proper collection development decisions are taking using citation analysis as it relates to journal selection, retention and cancellation in an event of reduced budgetary allocation to academic libraries and such documents could be culled to support fiscal and other types of accountability such as developing formulae for serials and monograph ratio as well as being used in showcasing graduate research

demand on library collection (Marcer, 2000; Waugh and Ruppel, 2004; Leiding ,2005 & Anunobi, Nwakwuo and Ogujiofor, 2010)

The benefit of citation analysis is reinforced by Aksnes (2019) in his study which used this method of research enquiry to evaluate a library collection. Citation analysis reveals interesting information about knowledge producers in terms of their information seeking behaviour and usage of various information sources. The argument is that citation analysis helps to analyze the library resources to determine the actual use of the documents; helps libraries and information system designers to provide useful ideas for acquisition of important documents to plan their products, services and analysis using bibliographic references which helps to identify materials which are related to a particular topic and are worth reading (Rounak, Roy & Modak, 2021).

In fact there have many empirical studies on citation analysis with each finding expressing its usefulness in ascertaining the information needs of users as well as creating core list of journals most frequently cited by students. Such studies include; Crawley-Low (2006); Tsay (2008); Smith (2010); Tsay (2011); Kushkowski (2013); Lokhande (2013) Regolini and Jannes-Ober (2013) & Gooden (2016) among many others.

The authorship patterns and author collaborative research has been studied empirically by a number of researchers through citation analysis. On author patterns studies have shown that multi-authored articles outnumbered as there are dominance in the area of author collaboration, authors' affiliations, and geographical distribution of authors (Kaur, 2002; Park, 2010; Swain (2011; Swain & Panda, 2012). While authors like Swain, Jena and Mahapatra (2012); Jena, Swain and Sahu (2012); Das (2012) and Isiakpona (2012 Haq (2021); Tapas, Rounak and Samaresh (2021) discovered that the visibility of collaborative contribution in the journals was remarkably less and that solo research is predominant. On the other hand, Haq, Faridi and Tanveer (2020) revealed in their study the dominance of co-authorship pattern.

Furthermore, several researchers have used citation analysis to look at subject focus of postgraduate students as to determine their journal needs. In which case it was found that authors favour current researches regardless of discipline and that journal articles are cited more frequently than monographs (Simisaye and Osanaike (2010); Olatokun & Makinde, 2019; Tanveer, Haq, Bhaumik & Rehman, 2020 Anjali & Kumar, 2021).

METHODOLOGY

The study employed a descriptive survey design with a sampled population of 296 derived through census method from Abia State University, Uturu (ABSU), Nnamdi Azikiwe University, Awka (UNIZIK), University of Nigeria, Nsukka (UNN) and Imo State University, Owerri, the four public universities in Southeast Nigeria offering library and information science. The principle instruments used in collecting data for this study were self-designed checklists. The researcher personally visited

the libraries in the universities selected for the study. Photocopies of title and reference pages of the theses and dissertations that are sampled were made. The researcher's self designed checklist was used to record the citations made in the theses and dissertations in relation to the research questions that guided the study. The citations embodied in the theses and dissertations were manually counted for the analysis as it is the only way by which the researcher can discover the types of serials cited, most frequently authorship patterns cited, most frequently cited serials as well as their ranges putting into consideration recency and period (ages of serials).With the checklists, 12455 serials citations were analyzed using descriptive statistics of mode, mean and range and data presented in tables, charts and graphs using frequencies and percentile

RESULTS AND DISCUSSION

The results were presented based on the objectives of the study which include the format of resources the students cited, the age of citation with reference to the year of the theses were published and the most cited serials by the students. From Two Hundred and Ninety-Six (296) masters theses and doctorate dissertations in which Twelve Thousand, Four Hundred and Fifty-Five (12455) serials citations were found. In this process, every serial citation made at one time was counted as one citation.

Table1; Distribution of theses and dissertations from each university from 2013 to 2021

University	MLS		PHD		MLS and PHD	
	F	%	F	%	F	
ABSU	49	24.14	20	21.51	69	23.31
IMSU	45	22.17	18	19.36	63	21.28
NAU	58	28.57	19	20.43	77	26.01
UNN	51	25.12	36	38.70	87	29.40
TOTAL	203	100	93	100	296	100

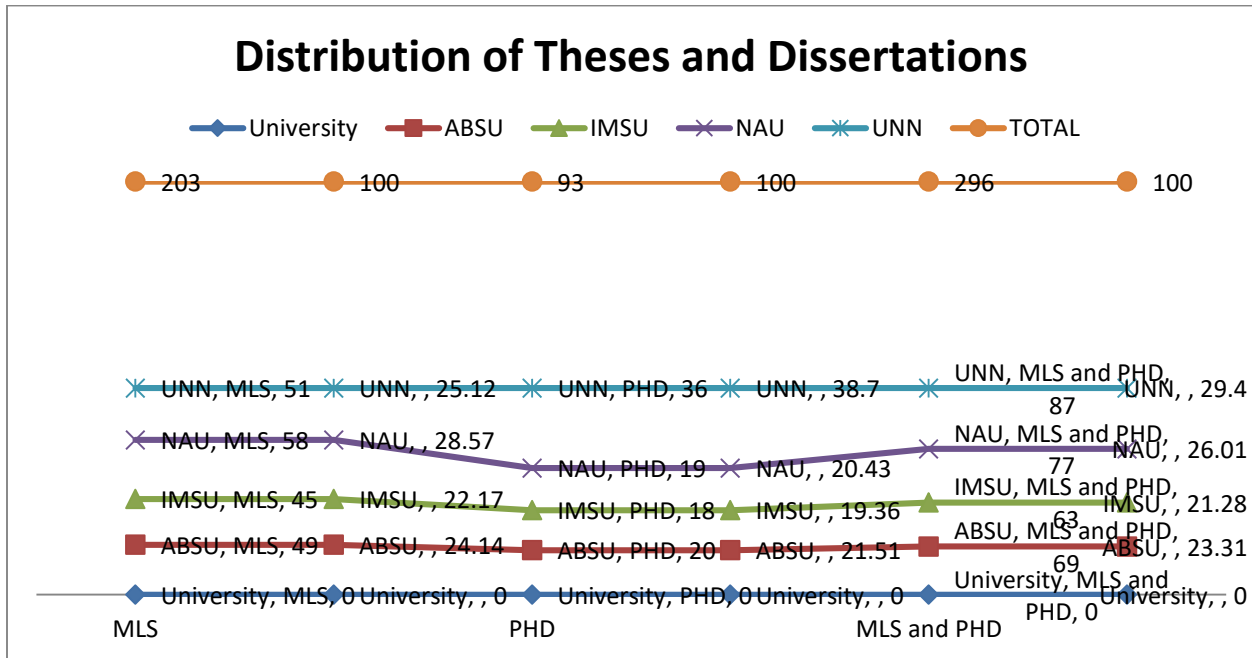


Figure 1: Distribution of Theses and Dissertations by Universities from 2013 - 2021

Table 1 and figure 1 above showed the distribution of theses and dissertations according to universities. The data did show that of the 296 studied, 203 or 68.6% were theses and 93 representing 31.4% were dissertations. Of this, 58 or 28.57% of the theses which is the highest came from Nnamdi Azikiwe University while the least number of 45 theses or 22.17% came from Imo state university (IMSU). On the area of dissertations, University of Nigeria Nsukka (UNN) had the highest number of copies which is 36 or 37.8% with IMSU also having the least with 19 representing 19.36%. While the theses were submitted in fulfilment of the requirement for the award of the degree of master’s in Library Science (MLS), that of dissertations were submitted in fulfilment of the requirement for the award of the degree of doctor of philosophy (PhD) in Library and Information Science of the studied universities.

Research Question 1: What types of serials are cited in postgraduate theses and dissertations?

Materials were grouped into types and two format categories for analysis: journals, conference proceedings, reports including working papers, research paper, annual reports, and technical reports, and government publications and miscellaneous (which includes year books, newspapers, manual, bulletins, guide, newsletters, magazine, personal communications, unpublished materials and others).

Table 2: Types of serials cited in MLS theses by individual Universities in Southeast, Nigeria from 2013 -2021

Types of Serials	ABSU		IMSU		NAU		UNN		Total	
	F	%	F	%	F	%	F	%	F	%
Journals	1626	25.16	1515	23.40	1773	27.5	1547	23.94	6461	100
Conference Proceedings/Report	424	25.13	396	23.47	463	27.45	404	23.95	1687	100
Newspapers	64	25.20	59	23.23	70	27.55	61	24.02	254	100
Government publications	11	25.6	10	23.25	12	27.9	10	23.25	43	100
Total	2125	25.16	1980	23.44	2318	27.40	2022	24	8445	100

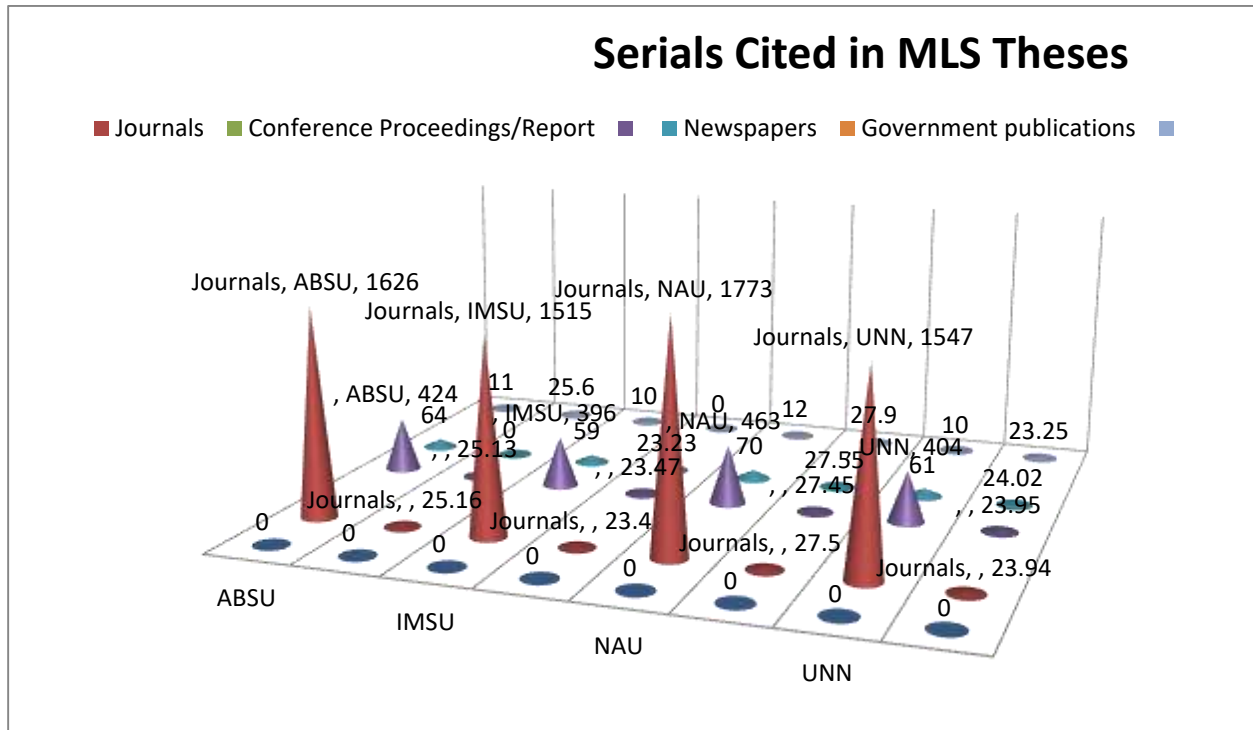


Figure 2: Serial Citations in MLS Theses

The data collected and displayed in table 2 and figure highlighted the types of serials cited by postgraduate students in individual universities from 2013 to 2021. The data revealed that all the universities studied, postgraduate students cited the following serials; journals, ABSU - 1626 (25.16), IMSU – 1515 (23.4%), NAU – 1773 (27.5) and UNN – 1547 (23.94) which stands at a total of 6461 journal citations; conference proceedings/reports: ABSU – 424 or 35.13% citations;

Table 3: Types of serials cited in PhD dissertations in Library and Information Science by individual Universities in Southeast, Nigeria from 2013-2021

Types of Serials	ABSU		IMSU		NAU		UNN		Total	
	F	%	F	%	F	%	F	%	F	%
Journals	666	21.72	639	20.83	610	19.89	1152	37.56	3067	100
Conference Proceedings/Reports	174	21.7	167	20.82	160	19.95	301	37.53	802	100
Newspapers	26	21.67	25	20.83	24	20	45	37.5	120	100
Government publications	4	19.05	5	23.8	4	19.05	8	38.1	21	100
Total	870	21.7	836	20.85	798	19.9	1506	37.56	4010	100

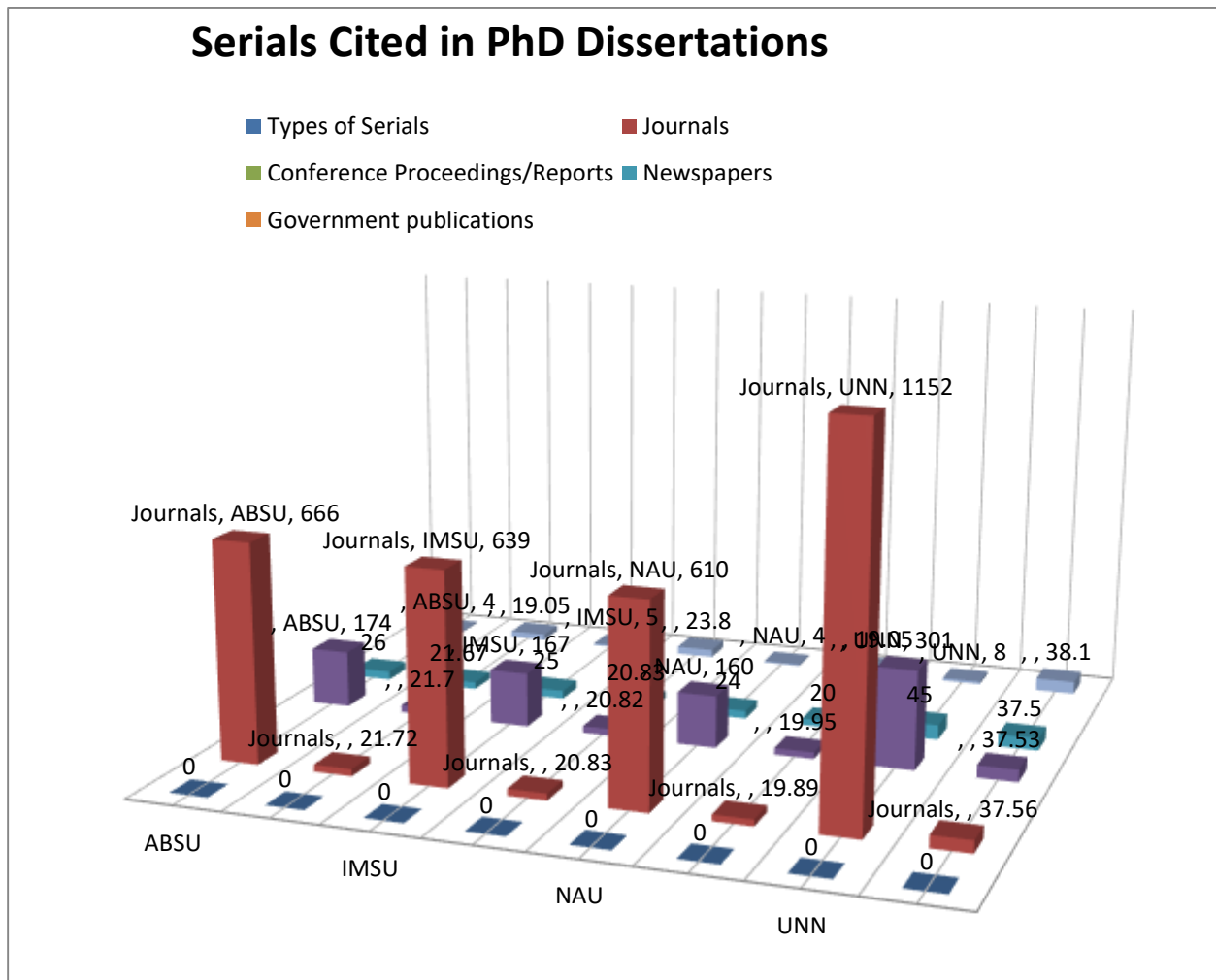


Figure 3: Distributions of Serials cited in PhD Dissertations based on individual Universities

Table 4: Citation According to Types of serials in both theses and dissertations

S/N	Types of Serials	No of Citations	Percentage (%)	Cumulative %
1	Journals	9528	76.5	76.5
2	Conference Proceedings/Report	2491	20	96.5
3	Newspapers	374	3	99.5
4	Government Publications	62	.5	100
	Total	12455	100	

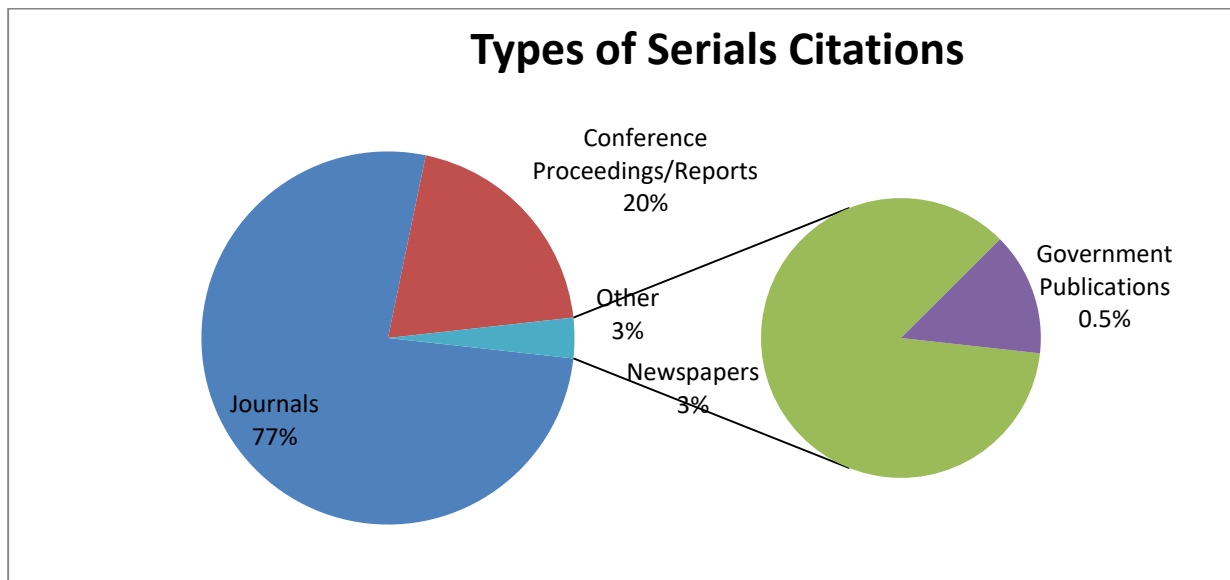


Figure 4: Types of serials cited in both master’s theses and doctorate dissertations

Inasmuch as there are various types of information sources that fall within the classification of serials which include: journals, conference proceedings, reports such as working papers, research paper, annual reports, and technical reports, theses and dissertations, government publications year books, newspapers, manual, bulletins, guide, newsletters and magazine, available data did show that not all the serials type were cited in the postgraduate theses and dissertations of Library and Information Science Students in public universities in Southeast-Nigeria from 2013 to 2021.

The data collated and displayed in tables 4 and figure 4 above, showed that the type of serials cited by the studied population in their theses and dissertation include; journals – 76.5% which represents 9528 citations ; conference proceedings -20% or 2491 of the total serials citation, newspapers 374 citations representing 3% and government publication 62 or .5%. This is to say, that the types of serials cited in postgraduate theses and dissertations of Library and Information Science students of public universities in Southeast Nigeria within the period under study are: Journals, Conference

Proceedings/Reports, Newspapers and Government Publications. Generally, a total of 12455 serials were cited in both theses and dissertations which indicate that the mean citations of serials in both theses and dissertations stood at 42. This can be attributed to the assertion by Elaturoti; Fagbeja, Kolade and Onyide (2011) that serials are of great importance as they carry latest, current and up-to-date opinions and information and on the belief that that serials are the nerve-centre of any university stock for research because they contain the most up-to-date primary information on research and knowledge. This outcome supports Adeoya (2004) who opined that serials should serve as fountain of knowledge, sources of vital information, and they should be highly intellectual.

Based on the data collected as analyzed above, the types of serials cited in postgraduate thesis and dissertations include: journals, conference proceedings, newspapers, reports and government publications. This result is also an affirmation of Library of Congress (2014) listing of serials to include: magazines; journals, newspapers, annals, memoirs, proceedings, transactions of societies and monographic series among others..

This result also justifies the assertion that serials, are primary sources of information on research undertaken in any given field and serve as fountain of knowledge as well as sources of vital information and constitute one of the most, if not the most important information resources of the information age(Serema & Mooko, 2002; Agbajie, 2003; Adeoya, 2004;)

Research Question 2: What format(s) are serials cited in postgraduate theses and dissertations in library and information science in public universities in Southeast Nigeria?

Table 5: Formats of serials cited in postgraduate theses and dissertations in Library and Information Science in public universities in Southeast Nigeria

Format	No	Percentage (%)
Print	5978	48
Electronic	6477	52
Total	12455	100

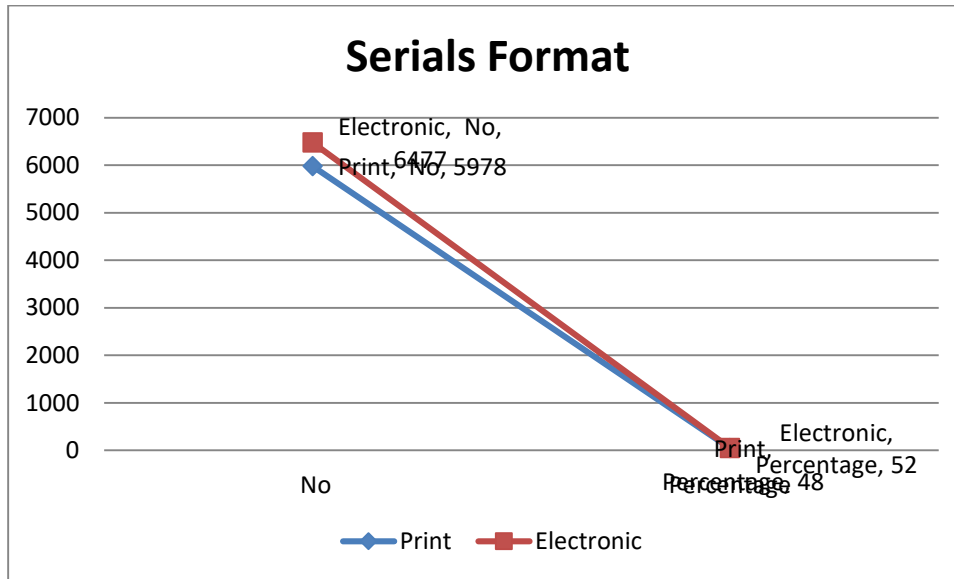


Figure 5: Formats of Serials Cited

The data as displayed in table 5 and figure 5 did show that of the 12544 serials citations in the postgraduates' theses and dissertations 52% or 6477 were obtained electronically or e-source while the remaining 48% representing 5978 serials citations were in print form. These serials formats utilized affirms the Library of Congress (2014) definition of serials as print or non-print publications issued in parts usually bearing issue numbers and/ or dates and are expected to continue indefinitely. This result corroborates some recent studies in several disciplines such as medicine (Ahmed & Reye, 2017; Anandhalli & Shakuntal, 2015), business (Sharma & Sharma, 2013), Law (Amusa & Atinmo, 2016), library and information science (KraKoswska, 2013; Akpojotor, 2016) among others. On the other hand, the use of print serials may be based on the aversion that print materials are reliable, faster to read and better understood. The outcome of this study is in conformity with that of Walter and Nyirenda (2014); Hoseth and Mclure (2012) and Woody, Daniel and Baker (2010) who discovered a clear preference for print materials despite of the general awareness of the advantages offered by e-books.

Research question 3: Which serials type and form are most frequently cited in postgraduate theses and dissertation?

Table 6: Most frequently cited serials in Masters' Theses in LIS in Southeast, Nigeria from 2013 -2021

Serials	No of citations		
	Frequency	Percentage	Ranking
Journals	6461	76.5	1 st
Conference Proceedings/Reports	1687	20	2 nd
Newspapers	254	3	3 rd
Government publications	43	.5	4 th
Total	8445	100	

Table 7: Most frequently cited serials in Doctoral Dissertations in LIS in Southeast, Nigeria from 2013 -2021

Serials	Citations		
	Frequency	Percentage	Ranking
Journals	3067	76.5	1 st
Conference Proceedings/Reports	802	20	2 nd
Newspapers	120	3	3 rd
Government publications	21	.5	4 th
Total	4010	100	

Table 8: Most Cited Serials in both master's theses and doctorate dissertation by Library and Information students

Serials	No of citations	Percentage	Ranking
Journals	9528	76.5	1 st
Conference proceedings/Reports	2491	20	2 nd
Newspapers	374	3	3 rd
Government reports	62	.5	4 th
Total	12455	100	

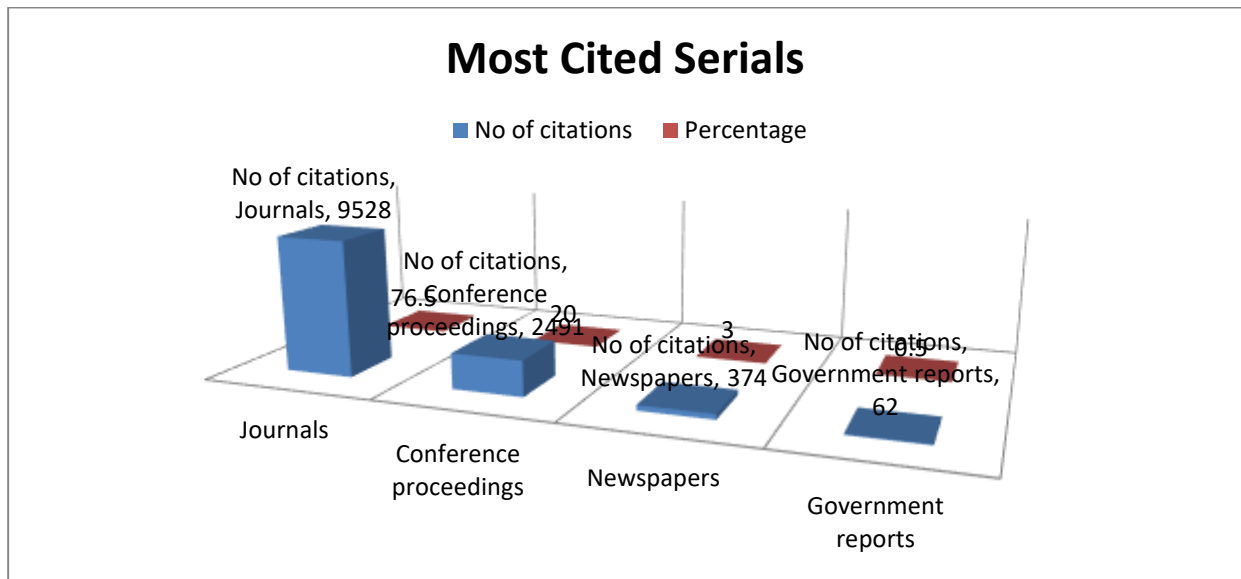


Figure 6: Most Cited Serials

As shown in tables 6 to 8 as well as figure 6, the most frequently cited type of serials in postgraduate thesis and dissertations from 2013 to 2021 in the other of ranking are journals with a total citing of 9528 .representing 76.5% followed by conference proceedings/Reports with 20% or 2491 cumulative citations, newspaper 3% representing 374 citations and government reports 62 cumulative citations or .5%. The result of this study agrees with the assertion that Journals are essential for research, but due to the ever increasing demands for the journals librarians are struggling to select most relevant titles by studying the quality, usefulness and suitability to particular group of users. The ranking list of journals is a practical tool that helps librarians to select journals of maximum utility in relation to their coverage of new and important literature in a particular subject area (Chamani, 2013). Furthermore high level utilization and preference for journals may be attributed to Adeoya (2004) assertion that journals are meant to fill a specific gap in communication. Newspapers and magazines treat news items with some sense of urgency, but journals later analyse the issues critically to the implication for specific industries noting that specialised journals are research – based depending on its areas of focus and that Journals, according to Serema and Mooko (2002), are regarded as primary sources of information on research undertaken in any given field.

The result of this study is also a confirmation of the previous studies carried out which found that journals were the most commonly cited type, with other type varying widely. (Rieb 1993; Kim 2002; Kushkowski et al. 2003) as well as that of Gooden (2001); Crawley-Low (2006) and Olatokun& Makinde (2019) This outcome also bears witness to the proclamation that scholarly journals are the principle medium for reporting research findings and used to assist in ongoing researches to identify topics for future researches (American Library Association, 2018).

Research question 5: What are the yearly distributions of serials citations in master’s and doctoral theses and dissertations in Library and Information Science in public universities in Southeast Nigeria?

Table 9: Annual Distributions of Serials Citations in Masters’ theses in Library and Information Science in public universities in Southeast Nigeria from 2013 – 2021

Year	ABSU		IMSU		NAU		UNN		Total	
	F	%	F	%	F	%	F	%	F	%
2013	230	23.64	305	31.35	78	8.02	360	37	973	100
2014	320	30.45	91	8.66	279	28.26	361	34.36	1051	100
2015	129	13.6	218	22.97	201	21.18	401	42.26	949	100
2016	331	41.02	310	38.41	123	15.24	43	5.33	807	100
2017	372	27.33	308	22.63	360	26.45	321	23.56	1361	100
2018	237	28.9	260	31.71	163	19.88	160	19.51	820	100
2019	193	16.51	136	11.63	630	53.9	210	17.96	1169	100
2020	-		-		-		-			
2021	313	23.80	352	26.77	484	36.81	166	12.62	1315	100
TOTAL	2125	100	1980	100	2318	100	2022	100	8445	100

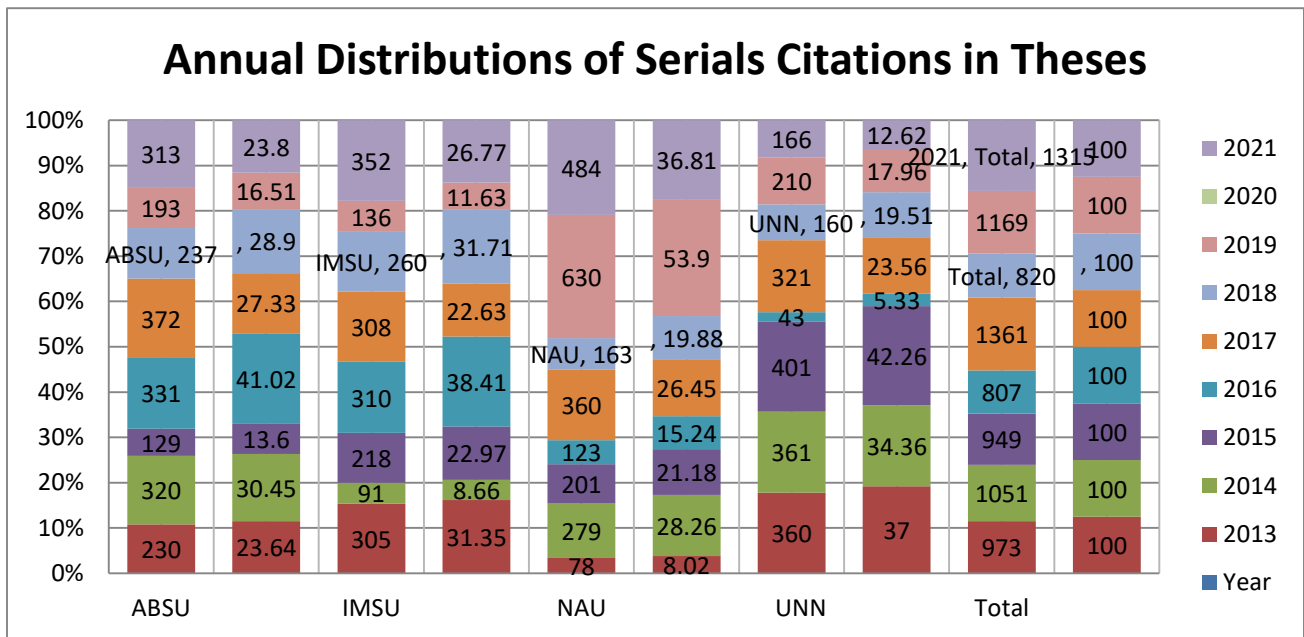
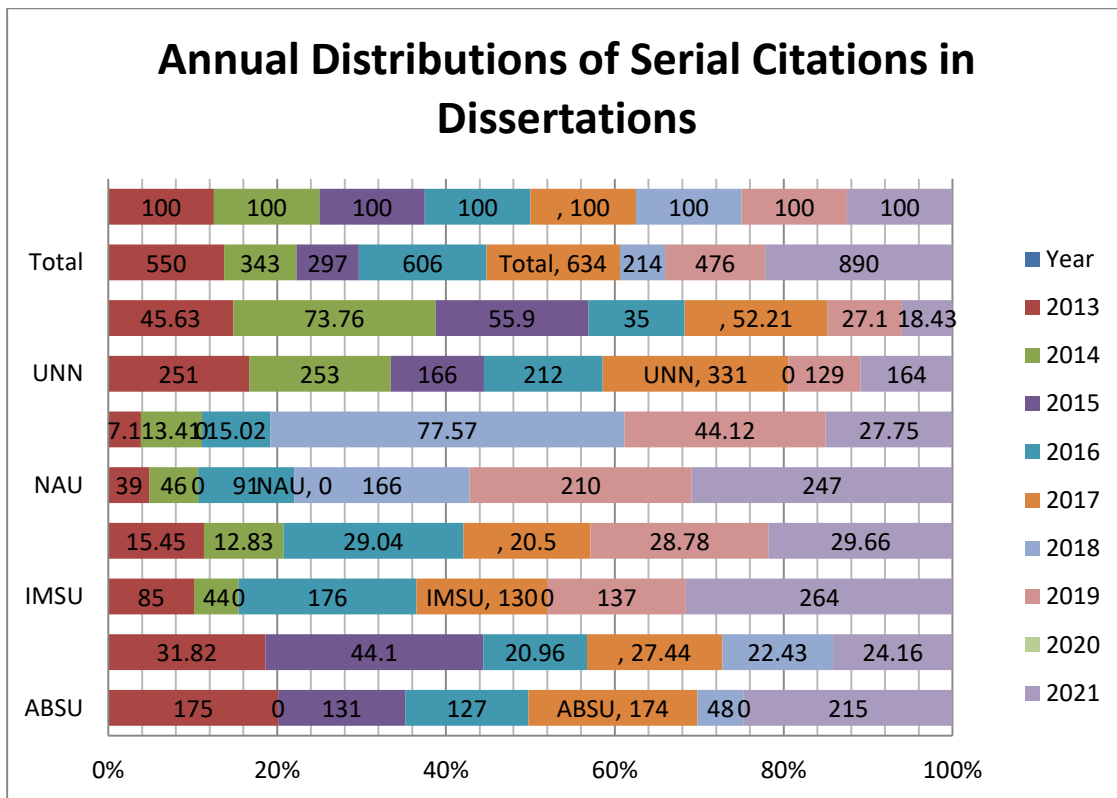


Figure 7: Annual Distributions of Serials Citations in Library and Information Science Theses

The data displayed in table 9 and figure 7 revealed the yearly distributions of serials citations in theses of Library and Information Science students from 2013 to 2021. The data showed that in 2013, a total of 973 serials were cited representing 11.52% of the serials cited in master's theses in library and information science for the 9 years under study. Of this number, University of Nigeria, Nsukka (UNN) had the highest citations of 360 or 37% of the annual citations followed by Imo State University, Owerri (IMSU) with 305 citations representing 31.55% of the annual citations, while Abia State University, Uturu (ABSU) with 230 citations or 23.64% to the 3rd position with Nnamdi Azikiwe University, Awka (NAU) taking the rear with 78 citations or 8.02% of the annual serials citations. It is pertinent to state, that the number of citation by each university is as a result of number of theses analyzed for the year and not as a result low usage of serials. For instance, NAU, Awka had 78 citations derived from two theses with a mean serials citations of 39. In 2014, a cumulative of 1051 serials citations was recorded in library and information science theses of the four universities. Out of this number, UNN also had the highest serials citations of 361 representing 34.35%, ABSU-320 or 30.45%, NAU- 279 or 26.55% and IMSU- 91 or 8.66%. 2015, a total of 949 serials were cited as shown in the table 9 and figure 7, UNN had the highest annual citations of 401 or 42.26% followed by IMSU with 23% or 218 annual serials citations while, ABSU had the least serials citations of 129 or 13.6%. In 2016, the annual serials citations in library and information science theses were 807. Of this number, ABSU had the highest citations of 331 representing 41.02% of the annual citations whereas the least for the year, was UNN with 43 serials citations or 5.33%, IMSU and NAU had 310 and 123 serials citations respectively for this particular year. 2017 had a total of 1361 annual serials citations in respect of the four universities with 372 or 27.33% recorded under ABSU; NAU – 360 or 26.45%, UNN – 321 representing 23.57% of the annual serials citations and 308 or 22.63%. The annual serials citations for 2018 stood at 820 with IMSU having the highest citations of 260 representing 31.71% of the year's serials citations and UNN 160 or 19.51% being the least for the year. In 2019, the four universities had a sum of 1169 serials citations, while IMSU had the least citations of 136 or 10.78%, NAU had the highest of 630 or 53.9%. 2020 had a zero record of serials citations in library and information science theses. This may be attributed to the outbreak of Covid-19 which paralyzed global educational activities. In 2021, a total of 1315 serials citations were recorded with NAU topping the list with 484 or 36.81% citations while UNN took the rear with 166 serials citations representing 12.62%.

Table 10: Annual Distributions of Serials Citations in Doctorate dissertations in Library and Information Science from 2013 – 2021

Year	ABSU		IMSU		NAU		UNN		Total	
	F	%	F	%	F	%	F	%	F	%
2013	175	31.82	85	15.45	39	7.1	251	45.63	550	100
2014	-	-	44	12.83	46	13.41	253	73.76	343	100
2015	131	44.1	-	-	-	-	166	55.9	297	100
2016	127	20.96	176	29.04	91	15.02	212	35	606	100
2017	174	27.44	130	20.5	-	-	331	52.21	634	100
2018	48	22.43	-	-	166	77.57	-	-	214	100
2019	-	-	137	28.78	210	44.12	129	27.1	476	100
2020	-	-	-	-	-	-	-	-	-	-
2021	215	24.16	264	29.66	247	27.75	164	18.43	890	100
TOTAL	870	100	836	100	798	100	1506	100	4010	100



Figure

8: Annual Distributions of Serials Citations in Library and Information science Dissertations

Table 11: Annual Distributions of Serials Citations in Library and Information Science Theses and Dissertations

Year	Annual Distributions Serials citations in Theses		Annual Distributions Serials citations in Dissertations		Total	
	F	%	F	%	F	%
2013	973	63.89	550	36.11	1523	100
2014	1051	75.4	343	24.6	1394	100
2015	949	76.16	297	23.84	1246	100
2016	807	57.11	606	42.89	1413	100
2017	1361	68.22	634	31.78	1995	100
2018	820	79.30	214	20.70	1034	100
2019	1169	80.9	276	19.1	1445	100
2020	-	-	-	-	-	-
2021	1315	59.64	890	40.36	2205	100
Total	8445		4010		12455	

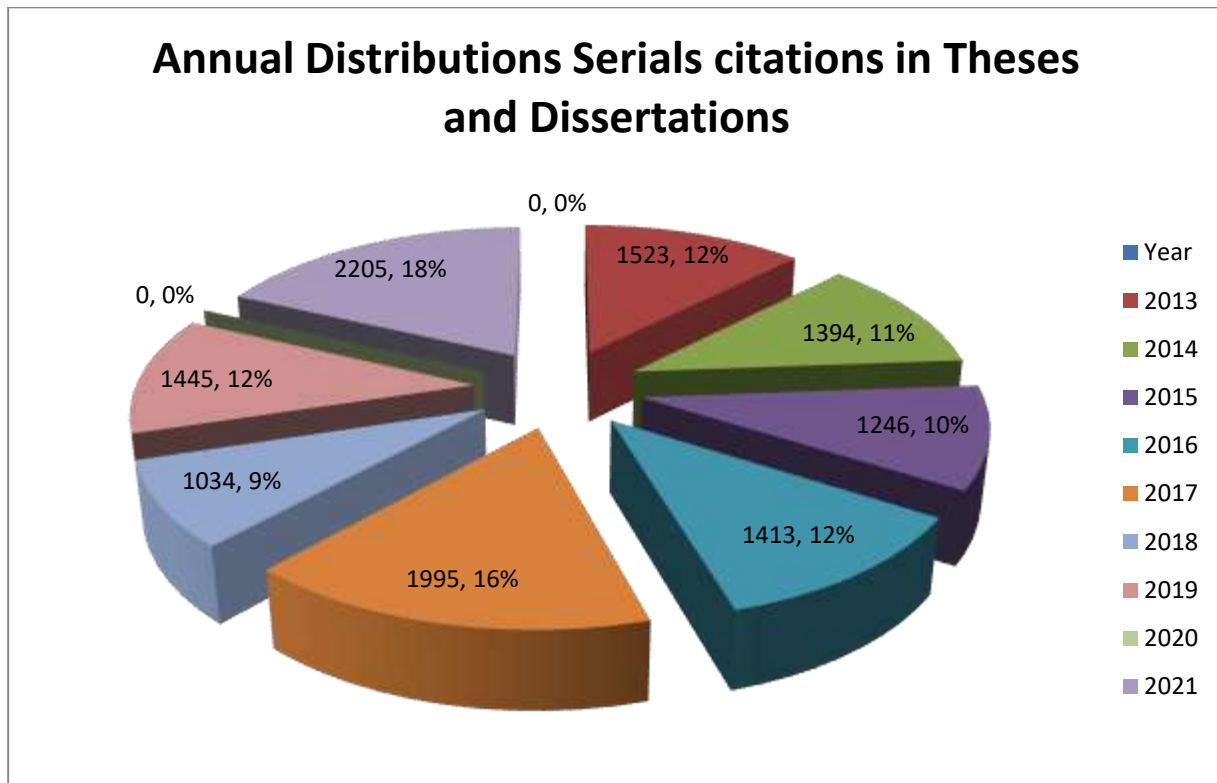


Figure 9: Annual Distributions of Serials Citations in Library and Information Science Theses and Dissertations from 2013 to 2021

Available data as shown in table 10 and figure 8 above revealed that a total of 550 serials were cited by the four universities in Library and Information Science dissertations. Of this number, UNN cited 251 or 45.63% which is the highest, followed by ABSU 175 or 31.82%, IMSU 85 or 15.45% and NAU 39 or 7.1%, 2014 had 345 serials citations with UNN contributing 353 or 73.76% which is the highest while ABSU had 0% contribution. In 2015, 297 serials were cited with UNN also having the highest citations of 166 or 55.9% and ABSU, 131 or 44.1 while IMSU and NAU had no citations, 2016, 606 serials were cited representing 15.11% of all the serials cited in Library and Information Science dissertations within the period under study. Out of this number, UNN cited 212 representing 35%, IMSU – 176 or 29.04%, ABSU – 127 or 20.96 and NAU, 91 or 15.02%. 2017 had a total of 634 serials citation with UNN citing 331 or 52.21 of the annual serials citations, ABSU- 174 or 27.44% and IMSU 20.5% or 130 serials citations while NAU had zero citation. 214 serials were cited in 2018 with NAU citing 166 representing 77.57 and ABSU, 48 or 22.43 which shows that both IMSU and UNN had no citations. In the year 2019, the annual serials citations from the four universities' library and Information Science dissertations stood at 476. While NAU cited 210 or 44.12%, IMSU cited 137 or 28.78% and UNN cited the remaining 129 representing 27.1. In this particular year, ABSU had no serials citations recorded under her as there was no dissertation submitted same applied to other universities were zero serials citations were recorded. There were no research reports analyzed in 2020 as the data showed that none of the universities graduated students in 2020 and this is attributed to the corona virus (Covid-19) pandemic outbreak in that year. Finally in 2021, 890 serials were cited in Library and information Science doctorate dissertations of the four universities with IMSU leading the path with 264 citations or 29.66% followed by NAU with 247 citations or 27.75% then, ABSU- 215 serials citations or 24.16 and least citations coming from UNN with 164 representing 18.45 of the annual serials citations. It is imperative to state that the numbers of serials citations recorded for each year were based on the number of dissertations accessed in each of the universities studied and they formed the basis of the analyzed data.

The sum of the data collated, analyzed and displayed in table 11 and figure 9 did reveal that in 2013, 1523 or 12% serials were cited in theses and dissertations, 2014, 1394 serials cited or 11% of serials cited, 2015 or 10%, 1246 serial citations, 2016, 1413 citations representing 12%, 2017, 1995 serials citations or 16%, 2018, 1034 citations representing 8% of total cited serials, 2019, 1445 serials citations or 12% and 2021, 2205 serials citations or 18% of the entire serials citations from 2013 to 2021.

The analyzed data indicated that the year with the highest serials citations in library and information science theses was in 2021 with 1315 citations or 15.57% while 2015 was the least with 807 citations or 9.56% of the entire serials citations in library and information science theses in the four universities from 2013 to 2021. In doctorate dissertations in Library and Information Science within the years studied was 2021 with 890 citations representing 22.19% of the total serials citations from 2013 to 2021, while the least serials citations of 214 or 5.34% was recorded in 2018. This was as result of the fact that only two universities ABSU and NAU had or graduated doctorate students in 2018 whereas, in 2021, the four universities studied after the relaxation of covid-19 restrictions graduated more

doctorate students in Library and Information Science that formed the submission of the dissertations. Generally, 2021 with total serials citations of 2205 or 18% in theses and dissertations had the highest number of serials citations of the entire years studied (2013 – 21) which stood at 12455, followed by 2018 with 1995 serials citations representing 16% while 2018 with a total serials citations of 1034 or 8% was the least

In fact, this result shows that the use of serials as source of information for research by postgraduate students is in the progressive as every year records an increase in cited articles published in serials going by the number of theses and dissertations submitted by year and their mean serials citations (see tables 9, 10 & 11 as well as figures 7, 8 & 9). This study outcome is related to that of Jan (2009) though on a yearly distribution of articles who conducted a citation analysis of all the journal articles published in the Library Trends from 1994-2007 in which a total of 593 articles were published in the journal during 14 years. Highest number (52) of articles was published in 2004.

Research question 4: How recent are the serials cited in the postgraduate theses and dissertations by Library and Information Science students in public universities in SEN from 2013 to 2021?

In this study, percentages were used to describe items to make the data more meaningful while Figure10 and tables 12 and 13 show the percentages of age of cited serials by master and doctorate students in their theses and dissertations from 2013 to 2021.

Table 12: Age of cited Serials

No of Years	No of Citations	Percentage (%)	Cumulative Percentage
Same year	149	.4	0,4
1 year	212	1.7	2.1
2-5 years	1918	15.4	17.5
6-10 years	2740	22	39.5
11-20 years	3973	31.9	71.4
21-30 years	1781	14.3	85.7
31-40 years	835	6.7	92.4
41-50 years	411	3.3	95.7
51- 100 years	161	2.9	97.9
More than 100 years	149	.4	99
Unknown	125	1.0	100
Total	12455	100	

Table 13: Timeliness of cited Serials

Years	No of Citations	Percentage (%)	Ranking
0-10	5019	39.5	1 st
11-20	3973	31.9	2 nd
21-30	1781	14.3	3 rd
31-40	835	6.7	4 th
41-50	411	3.3	5 th
51-100	161	2.9	6 th
More than 100 years	149	0.4	8 th
Unknown	125	1.0	7 th
TOTAL	12455	100	

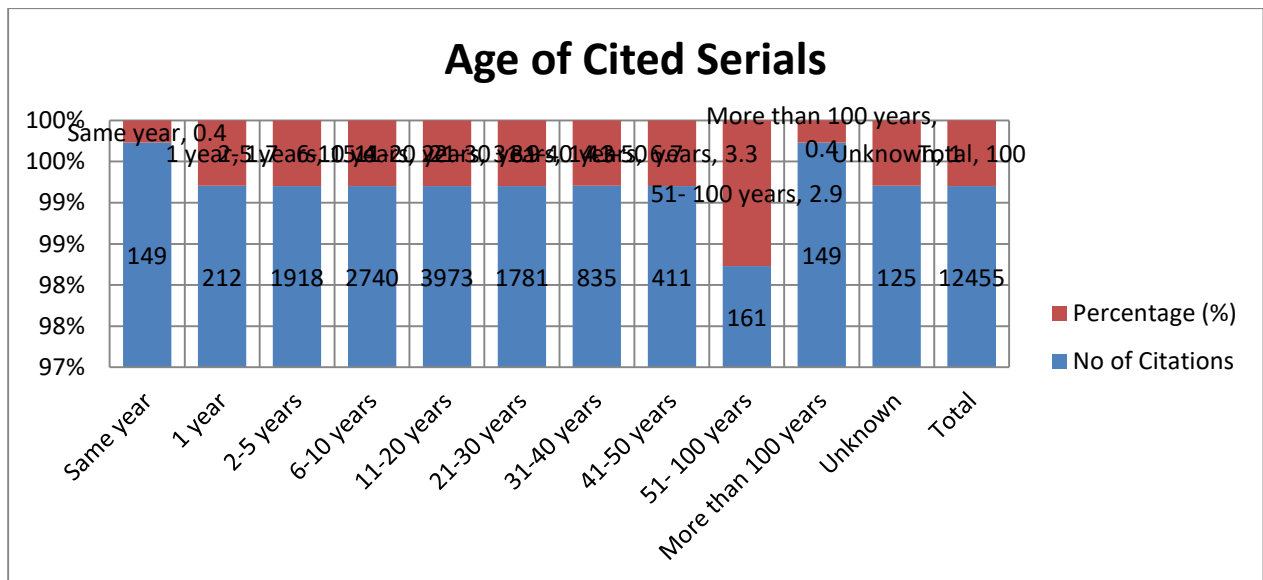


Figure 10: Age of Cited Serials

Tables 12 and 13 shows the data collected in respect of ages of serials also known as timeliness or recency of serials cited. As indicated in the table 13 and figure 10 39.5% or 5019 of serials cited were published within 0-10 years while 31.9% or 3973 serials cited were published within 20 years. It further revealed that 14.3% or 1781 of serials were published within the last 30 years and 6.7 % or 831of serials were within the last 40 years among others.

The analysis of citations by age of cited documents reveal useful life of documents. This period of citation of the serials are popularly referred as “half life of periodicals” or often quoted as “obsolescence of use of literature” (Shafi, 2001) For calculating the citation age, the difference

between the date of the citation and the date of the publication in which it was cited is considered rather than simply analyzing publication date.

The essence of this area of this study is built on the premise that understanding the extent to which library users rely on older materials can be useful in determining which materials can be moved to remote storage (Ackerson 2001). This outcome is therefore in tandem with that of Musser and Conkling (1996) and Kushkowsi et al. (2003) who in their separate studies found that the majority of materials cited in research works were less than eight years old.

Research question 6: Which authorship patterns are most frequently cited in the postgraduate theses and dissertations?

Table 14: Most cited Authorship Pattern

AUTHORS	No of Citations	Percentage	Ranking
Single Author	1865	15	3 rd
Co- Authors	4733	38	2 nd
Corporate Authors	623	5	4 th
Multiple Authors	5231	42	1 st
Total	12455	100	

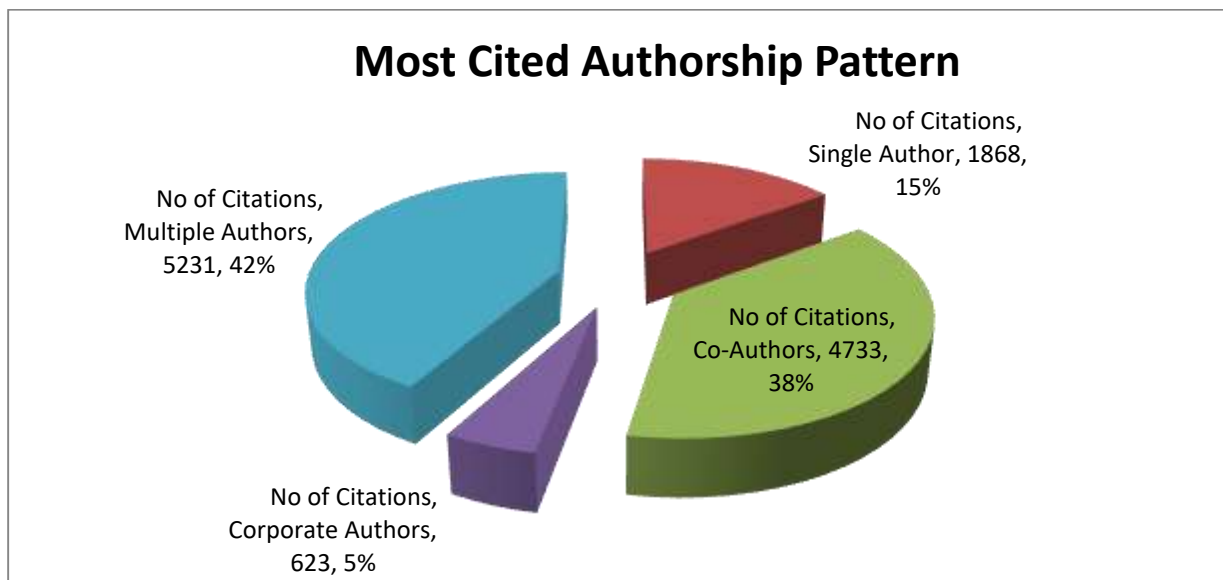


Figure 11: Most Cited Authorship Pattern

Data in table 12 above indicate that 15% representing 1865 serials citations in postgraduate theses and dissertations of Library and Information Science students of public universities in Southeast Nigeria within 2013 to 2021 were that of single authors while articles written by two authors were cited 4733.times or 38%, corporate authors had 623.citations representing 5% of the total serials citations in both theses and dissertations within the period under study, whereas multiple authors had a total of 5231 serials citations which stands for 42% of all the serials citations in master's theses and doctorate dissertations within the period. The data therefore showed that the most frequently cited authorship pattern by ranking were multiple authors as they were cited 5231 times or 42%. This was followed by co-authors with 38% of the citations while single authors with 1868 or 15% took the third position. Corporate authors took the rear with 623.citations representing 5% of the total serials citations of 12455.

This result agrees with that of Tiew, Abdullah and Kaur (2002); Park (2010), Pradhan; Panda and Chandrakar (2011) among others. It is also in line with the historical construction theory of citation to interacting networks of authors and has a position for multi-dimensional space (Leydesdorff, 2006).

CONCLUSION AND RECOMMENDATIONS

Implications of these findings

This citation analysis of serials study on postgraduate research reports in Library and Information Science of public universities in Southeast Nigeria has many implications to research in this academic discipline. If this study was not done, the nature, trend and influence of research and interest of researchers in Library and Information Science for the period under study will not be known. There would be continued repetition of areas that have been over-researched and some areas will be neglected and this will cause lopsided research in this field of knowledge.

This study should be important in recommending for selection and deselecting of materials. Findings should be relevant to librarians in developing collection development policies and in their budget planning. Examining age of cited references to help develop storage and retention policies. If the need arises to make cuts to serials budgets and if the collection managers are forced to cancel titles, this data can be used to find the least cited material. This method may also be used if the library needs money to purchase back issues of more heavily used journals. Understanding the extent to which library users rely on older materials can be useful in determining which materials can be moved to remote storage (Ackerson 2001).

The outcome of this study will help in analyzing university library resources as to determining actual uses of these documents and through which, the libraries and information system designers will be helped into providing ideas for acquisitions of important serials to plan their products, services and analysis using bibliographic references which help to identify materials which are related to a particular topic and are worth reading (a veritable tool for SDI).

Furthermore, the result will help to determine serials being used by postgraduate students in academic libraries as it will serve as invaluable tool in the assessment of the library collections in this area as well as helps in understanding of subject relationship, author effectiveness, publication trends and user behaviour. Just as observed by Gooden (2016) citation analysis will be used by librarian in different fields to eliminate costly low use/unused journals, identify core journals needed for use and to purchase the needed materials.

Conclusion

The evidence from this study suggests that graduate students' citations of serials favour current research as the average age of citations in the sample decrease for most topics; indicating that the current researches are being used when writing theses and dissertations. Furthermore, in as much as Doctoral dissertations are consistently longer than Master's theses over times, the number of serials citations in both varies by topic of research.

The study discovered that most of the cited serials were journals, over 76% of the total citations for graduate works were journals which were affirms previous findings that journal are the most commonly cited type of serials. Since more than 60% of resources cited were 0-10 years old, it meant that postgraduate students prefer to use current materials than old resources. By examining the age of the cited references, data can be used to develop storage and retention policies of the library.

Recommendations

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

1. The need for documentation in any library cannot be under estimated. This is because it is one of the core functions of librarians and libraries. But it is disheartening to state that most libraries especially academic libraries cannot boast of functional documentation unit. Indeed, there should be documentation librarian in each university library whose duty should be tracking down research reports, ensuring proper documentations of their citations for upward delivery to the university library acquisitions and circulation units.
2. Automation of the serials units: The emergence of information and Communication technology (ICT) has transformed the way information is acquired and enhanced its utilization by users. There is no international serial especially scholarly journals apart from being in print form do not have the electronic version and it is rear to see anyone that is not open access (AO). For any academic library to enjoy the benefits of OA, its serials unit must be fully automated. With an automated serials unit, such journals' URL can be pasted on the library portal thereby making them easily accessible by the students.
3. Furthermore, the university management should see as a necessity and a call to duty the integration of highly cited open access journals into the library. The university librarians are advised to liaise with international academic publishers such as IGI Global and Emerald Insight who are ever willing to collaborate with academic libraries to the success of such project.

4. The university library is also advised to create an Online Public Access Catalogue (OPAC) for serials that will allow remote use by students using wireless fidelity (Wi-Fi) network or Hotspot using students' registration numbers as password.
5. Subscription to serials inclined databases: Common knowledge in most of our university libraries that databases subscriptions are only seen as a serious matter only during accreditations and ones over, comes the of the discussions. To this end, the suggestion is that university librarians, should as professionals, get rid of this Nigerian factor and ensure that money released for subscriptions are tailored towards subscribing for serials (Journals in particular) inclined databases in line with departmental and faculty needs.
6. The university management should formulate policy that will promote bibliographic control of theses and dissertations. This is based the on the experience of the researcher that none of the university libraries could at a glance state the number of postgraduate reports available. The art of bibliographic does not only help in organizing knowledge, but will also help postgraduate students know areas covered so far in their fields and areas that need to be researched upon
7. The worth of any information material is weighed by the extent of utilization. This implies that information is worthless unless it gets to the hands of the final users who utilize it to solve the problem of uncertainty. Suffice it to say, that the availability of serials in any university library remains a heap of materials until its availability is made known to the final users. The underline factor is that university librarians should take it as a primary function to provide for postgraduate students Current Awareness Services (CAS) applying selective dissemination of information (SDI) in accordance with the profile of the students, which must be obtained immediately such students are registered for the programme and their topic of research submitted with a view to informing them of availability of current serials that suit their areas of research.
8. In modern librarianship, marketing of services to users and potentials users has become one of the veritable tools for promoting the worth of any library which university library is inclusive. One of the means of doing this is exhibitions. To this end, university management should as a matter necessity regularly carry out exhibitions of newly acquired materials including serials both in their print and electronic forms indicating URL and databases were e-serials can be located and retrieved. This may be carried out by having at the entrance of the main library an awareness board where list of newly acquired and abstracted serials will be displayed.
9. There should be a reduction in the amount of money budgeted for daily newspapers as the best choice should be e-newspapers which are freely available online so as to save cost and space.
10. Research centres for Library and Information Science or departmental library should be established in all departments of library and information science in SEN public university as to improving documentation of theses and dissertations.
11. Postgraduate students should be encouraged by supervisors to carryout researches in citations analysis as there are many areas uncovered. Research has not been conducted on other regions

of the nation. Effort should be made to conduct studies on such areas, to shed light on their postgraduate students' information materials utilizations.

12. More researches should be carried out in other types of libraries apart from university, such as special, public libraries etc in order to shed light on their situations. This will also help policy makers show more interest in improving these types of libraries and also de-emphasize studies on academic.
13. Government and university management should ensure adequate release of fund for the acquisitions of required print serials as well as for subscriptions of faculty recommended databases while the university librarian should ensure judicious appropriation of fund allocated.

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