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CITATION ANALYSIS OF INFORMATION SOURCES CONSULTED BY MASTERS' DEGREE STUDENTS OF LIBRARY AND INFORMATION SCIENCES DEPARTMENT, BAYERO UNIVERSITY, KANO 2001 – 2010.

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Abstract
The study was designed to analyze citation of masters' dissertations produced between the year 2001 and 2010 in the Department of Library and Information Sciences, Bayero University Kano, with a view to determining information sources consulted. Using a checklist, data contained in sixty-six (66) dissertations which were submitted in the University library between the year 2001 and 2010 were collated and analyzed using tables, frequency count and percentages. The result revealed that: the students demonstrated preference for journal to other information sources for research; citations from online sources were very low; academic library is most library widely focused; northwest is most geographical zone covered and male researchers are the majority. Recommendations were made based on the findings.

Keywords: Citation Analysis, Information sources, Types of Library.

Introduction

From the beginning of human civilization to the present day, information has been a component of growth and development in living standards of people. In modern societies, it is closely interlocked with growth and development of a particular country.

Libraries all over the world are custodian of valuable information. Information is preserved in various information sources. These information sources formed an essential part of the services provided by the academic libraries. However, due to increasing needs of the user communities, substantial increase in the cost of documents and inadequate financial resources,academic libraries find it difficult to meet up with information needs of their users. Librarians,on the other hand, must have a clear understanding of information needs and information sources used by researchers. One way to do this is by analysing theses and dissertations to discover what sources are cited most by researchers.

Citation analysis is a new technique used to measure quantitatively the value of a document through arranging the citations in some kind of rank or order. It is also used to

study the growth and structure in literature of any subject (Kumar and Reddy, 2012).This technique is a helpful tool for the library management in the selection and weeding of materials in the face of ever expanding information environment.The first recorded citation analysis was done by Gross and Gross (1927) who looked at citational patterns to determine the journals to be subscribed to and back volumes to be acquired for the library of Pamona College.

Citation analysis for the purpose of this study means analysis of bibliographic reference and citations which form part of the dissertations. It can be further understood that citation in a dissertation express a connection between two documents, the dissertation which cites and the article or book which is cited. This is a sort of a guideline to librarian in the formulation of acquisition policy for materials. This approach helps clarify both the information needs of researchers and what should be contained in a research library collection.

Objectives of the Study

The objective of the study is to analyse the Master of Library Science dissertations submitted to the School of Postgraduate Studies, Bayero University, Kano between 2001 and 2010, in order to determine the following:

I. Types of Information Sources consulted;
II. Amount of Online Sources Cited;
III. The type of Library focused;
IV. The Geographical Locations covered;
V. The Genders of the Researchers.

Literature Review

Kuruuppu & Moore (2008) examined the information sources used by doctoral students in agriculture and biological sciences, and found that journals had 24,072 out of 29,894 citations (80.5%). Maharana, Das & Sahu (2014) in their bibliometric analysis, shows that articles were the most dominant document type comprising of more than one third to the total documents; followed by reviews 9.05%; letters 8.02%; editorials 1.78%, Conference papers 1.75%.

Kumar and Reddy (2012) studied citations in master's degree dissertations submitted to the Department of Library and Information Science, Sri Venkateswara University, Tirupathi during the period 2000 – 2007. Findings showed that journals were the most utilized reference materials in the dissertations. Anunobi, Okoye and James-Chima (2012) analyzed citation of postgraduate masters' theses produced between 2000 and 2008 in the School of Agriculture and Agricultural Technology of Federal University of Technology Owerri to determine their resource preference. Thirty one (31) theses which were submitted to the University library were collated and analyzed and the result revealed that, number of cited resources for each of the theses is 75.8% out of which 34.12% are journals, the students demonstrated preference for journals to other resources for research; 53.23% of the resources cited were 20years older than the year the theses were produced.

Fasae (2012) carried out citation analysis of dissertations and theses submitted to the

Department of Agricultural Economics and Extension, Federal University of Technology Akure, Nigeria. Findings revealed that journals were the most consulted information materials, accounting for 34.97%, closely followed by books 25.15% while resources from the web/Internet was least utilized having 1.49%. It was reported that one-third of the materials used were recent.

Ezema and Eze (2012) analyzed the types of information resources Nigerian agricultural science researchers (with particular reference to animal health and production) use in their scholarly communication process. A total of 8,328 citations were harvested from the journals out of which 58% of them are journal citations while books and monographs accounted for 24%. There is also a very low citation to electronic sources which would have provided citations to more current materials.

Banateppanvar, Biradar and Kannappanavar (2013) studied citation analysis of doctoral theses in biotechnology submitted to Kuvempu University, Karnataka. The authors found that journals were the most preferred sources of information used by the researchers in the field of biotechnology, accounting for 79.72% of total citations. Citations from books, proceedings, theses, reports and patents are also found. Megnigbeto (2006) studied the citations of dissertations of library and information science undergraduate students and found that the number of citations to Internet resources was very low. Jena (2006) revealed in his study "A bibliometric analysis of the journal Indian Journal of Fibre and Textile Research, 1996-2004" that regarding the bibliographical distribution of citations, journal form is predominant at 73.92%.

In a similar study Gohain & Saikia (2014) analysed 10,983 citations, appended to 30 PhD theses of chemical sciences submitted to Tezpur University, 2008-2012. The study revealed that journals were the most preferred sources of information used by the researchers in the field of chemical sciences, accounting for 78.83% of total citations, followed by books with 15.57 % citations. Harande and Ladan (2013) carried out a study on "Scholarly communication trends through the literature of Mathematics Education". Citation analysis was used and the study confirmed that Journal articles were found to be the most cited materials with 38.5%, followed by books with 28.6%. Somashekara and Kumbar (2014) carried out citation analysis of science doctoral theses in Physics submitted to Bangalore University Bangalore, Karnataka, India. The study covers 2,485 citations. The study found out that the major part of citation is Journal citations (80.68 %) followed by books (10.99%) and E-resources (1.21 %).

Devi &Sankar (2014) assessed information use pattern of researchers in commerce using citations of doctoral dissertations in Commerce awarded by University of Kerala, India from 2001 to 2010. Findings showed that journal articles were cited more with 38.79%. Followed by books 37.64%, reports 13%, theses and dissertations 5.36%, conference proceedings 2.53%, newspaper articles 2.14% and electronic documents 0.545% of the total documents cited. The latest document used was published in the year 2007 and the oldest one in the year 1923. Iroaganachi, Iteskor, &Osinulu (2014) studied citation analysis of research project reports of Social Science Bachelor degree graduates between 2009 and 2013 submitted to the Covenant University Library, Nigeria. It was revealed that books have the highest citation, accounting for 69.4% followed by journals 16% and Internet/ E-Resources 8% among others.

Oduwole (2000) conducted a citation analysis of agricultural theses accepted at University of Agriculture, Abeokuta, Nigeria. The study identified and grouped the various sources of information used by researchers into three classes namely:

(1) Primary sources (periodicals, monographs, patents, trade literature, research reports, dissertations and theses).
(2) Secondary sources (indexes and abstracts)
(3) Tertiary sources (encyclopaedias, reviews, and dictionaries).

The study further revealed that Internet services were other means of communication used by researchers to disseminate their ideas.

In a study of 79 postgraduate theses, Echezona, Okafor & Ukwoma (2011) using citation analysis found that of the 4,814 citations that were analyzed, journal articles (53.8%) were most cited of all the information sources by the postgraduate students, followed by books in all forms, including monographs and encyclopedias (30.8%) and online sources (15.4%). They posited that the results from the analysis of citations in research papers or dissertations can guide librarians to base their acquisition policies on actual usage. The technique involves counting how many times a paper or a researcher is cited, assuming that influential scientists and important works are cited more often than others.

Harande (2016) carried out citation analysis of 17 theses in Electrical and Electronic Engineering submitted for the award of masters' degrees in Abubakar Tafawa Balewa University, Bauchi during the period of 1990-1998. A total of 373 citations were recorded from the theses. Findings revealed that, journals and books were found to be cited heavily and more than other sources of information. This finding showed clearly that journals and Books were the major sources of pertinent information for research by the Electrical and Electronic Engineers.

Methodology

Descriptive survey method was adopted to determine the information sources used by Masters' student of Library and Information Sciences Department, Bayero University Kano. Citation analysis was carried out for all the masters dissertations produced between 2001 and 2010 in the School which were submitted to the University library. A total of sixty-six (66) masters dissertations were sampled at the time of this study. All the resources consulted for each of the dissertations which were documented as references were copied and data extracted with the aid of observation checklist. Results were presented with Tables, frequencycounts, graphs and percentages.

Results and Discussions

Table 1: Types of information sources consulted

Information sources	Citations	Percentage of citations
Journals	1367	31.67
Books	1088	25.20
Online sources	317	7.34
Conference Proceedings	211	4.88
Theses and Dissertations	160	3.71
Reference Materials	107	2.48
Others	1066	24.69
Total	4316	100

The analysis revealed that a total of 4,316 citations were made in the 66dissertations analyzed. This consists of 31.67% (1367) Journals, 25.20% (1088) Books, 7.34% (317) Online Sources, 4.88% (211) Conference Proceedings, 3.71% (160) Theses and Dissertations, 2.48% (107) Reference Materials and 24.69% (1066) forother sources as shown in Figure 1. Other sources citedinclude newspaper/magazines, handbooks, government publications, bulletins and newsletters, technicalreports, manuscripts, pamphlets, personal communication, manuals, lecture notes, prospectus, speeches, monographs, brochure, undergraduate and diploma projects.

The revelation that journals are used more than other information sources corroborates with works of previous researchers such as: Gohain and Saikia (2014) who did a citation analysis of 30 PhD theses of Chemical Sciences and discovered that journals were 78.3% cited more frequently than books 15.57% and other sources.Somashikara and Kumbar (2014) also studied 2485 citations of doctoral theses in Physics and found that journal citations 80.68% accounted for more than half of the total citations to other sources followed by books 10.99%. Also, Ezema and Eze (2012) and White (2013) in a separate works revealed that researchers cite more journal articles than other information sources.

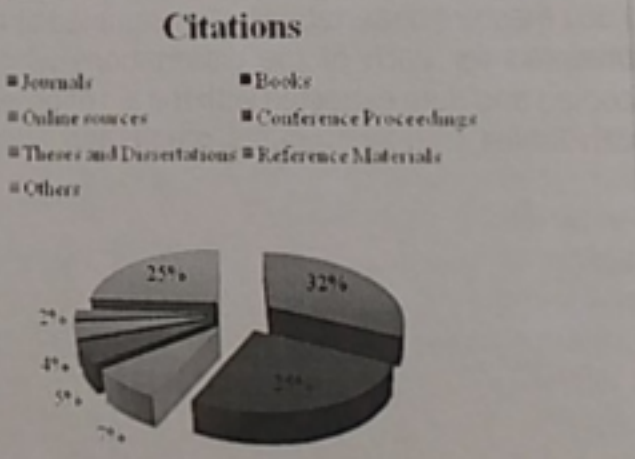

Fig. 1: Pie chart showing percentage of citations of information sources

Online Sources Cited

Citations from online sources recorded only 317 (7.34%) of total citations, which is below average, especially in this era of information explosion where Internet is taking over everything. This finding supports the work of Iroaganachi, Iteskor and Osinulu (2011) that studied citations of research reports of social science bachelor degree graduates and found out that the number of citations to Internet sources was very low 8%. A related study which analysed doctoral theses of Physics Somashekara and Kumbar (2014) revealed that there were a total of 2485 citations, of which 80.68% came from journals, 10.99% form books and just 1.21% from Internet sources. This could imply that the masters degree students did not know how to use the web for their researches or did not appreciate online sources in their works.

Based on these findings, Library and Information Sciences department need to encourage upcoming master degree students to develop the habit of consulting e-sources regularly to acquaint themselves with current trends in their discipline.

Table 2: Type of Library Focused

Types of Library	Citations	Percentage
Academic Library	31	46.97
None	17	25.76
Public Library	8	12.12
School Library	7	10.61
Special Library	2	3.03
National Library	1	1.51
Total	66	100

The type of Library focused as shown in Table 2 revealed that Academic Library is the type of Library most widely focused in the dissertations. The interests in the academic library could be attributed to the fact that majority of these students are working in Academic Libraries in institutions of higher learning, this finding corroborates the work of Abba and Aliyu (2009) on Analytical Study of Master of Library Science Dissertation of University of Maiduguri, Nigeria.

Seventeen dissertations did not focus on any type of library, rather on other areas such as archival and records management, information needs of rural dwellers and so on. Public library had eight dissertations and school library had seven, while special and national libraries had least dissertations submitted. This may be due to the fact that, the students do not have interest in these libraries or they don't know the problem the libraries are facing.

Furthermore, Private Library is the type of Library that did not receive focus at all in the dissertations analysed, despite the fact that there are numerous private collections of Islamic Scholars and traditional rulers scattered everywhere inthe Northern part of Nigeria. Aguolu (1986) lamented that there are still many extant Arabic manuscripts, scattered here and there among Emirs, Alkalis and Mallams. Similarly, Mommoh (1993)

cited by (Abba and Aliyu 2009), on his study of Statistical Analysis of Final Year Undergraduate Library Science Projects at the University of Maiduguri, suggested that the Department of Library and Information Sciences should encourage students to bring such collections to the lime-light.There is the need for the department to encourage prospective students into the Master of Library and Information Science programme to take interest in conducting research on private collections or libraries.

Table: 3 Geographical Locations Focused

Geographical Locations	Frequency	Percentage
None	26	39.39
North – West	21	31.82
North – Central	11	16.67
North – East	5	7.57
South – West	2	3.03
South – South	1	1.52
South – East	0	0
Total	66	100

The researchers analysed its geographical location based on six geographical zones in Nigeria. Though findings revealed that 26 dissertations does not focus on a particular geographical location, but 14 focused on the entire Northern part of Nigeria, while 12 dissertations focused on the entire country. From the Table 3, it shows that Northwest is the most focused geographical location with 21 (31.82%) citations. This finding may be due to the fact that Master of Library Science programme attracts more students from this geographical location being where the university is situated or the university itself gives admission to more students from this geographical location than others. North central geographical location is the second location with citation frequency of 11 (16.67%), North east recorded 5 (7.57%), South west had 2 (3.03%), while South south had 1 (1.52%). South east is the geographical location that recorded zero citation, probably this may be that because of the distance or students from south east do not apply for Master of Library Science programme in Bayero University Kano.

Table: 4 Gender of Researchers

Genders of Researcher	Frequency	Percentage
Male	43	65.15
Female	23	34.85
Total	66	100

The gender of the researchers who submitted dissertations in the year under review, revealed that majority 43 (65.15%) were male, while 23 (34.85%) were female. This could imply, that there is no gender equality when giving admission, because the number of male students is higher than that of female students.

Conclusion and Recommendations

The researchers therefore conclude that, the data derived from the study revealed that the researchers prefer citing journals than other information sources. Number of

citations from online sources is discouraging, especially in this era of information communication technology. Academic library is most research library focused, northwest geographical zone is the most widely research zone and male researchers are the most dominant.

In view of the above findings, it is recommended that the Department of Library and Information Sciences should collaborate with the university management in acquisition of most consulted information sources, and also to encourage upcoming students on the importance of online information sources. There should be more awareness in areas of types of library for research concentration by students most especially private libraries.

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