

Citation Analysis of MLIS Dissertations Submitted to Assam University, Silchar During 2012-2013

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Abstract

Attempts to study the Citation patterns reflected in the Master's degree dissertations submitted to the Department of Library and Information Science, Assam University, Silchar during the period 2012 – 2013. This study is based on the 1,302 citations taken out from 62 dissertations of Library and Information Science which were tabulated and analyzed for finding possible relationships between citations, citation patterns of the authors, citing articles and other bibliographic forms. For this study frequency and percentage distributions were used to analyze the data. A total of 1,302 citations were collected and from those citations various aspects of citation studies have been carried out which include the observation of the distribution of authorship pattern, bibliographic form, determine the ranks of most popular scholarly journals, publisher, and geographical distribution of cited journals and ranking list of prolific authors. From the study it was deduced that journals are the most utilized reference materials in the dissertations which is followed by books and it was also observed that the highest numbers of citations are from single authored papers/publications. The place wise scattering of citation analysis reveals that about 126 (54.08%) citations are from India and which is followed by U.S.A and U.K. It is interesting to note that the 'Sinha, Manoj Kumar' occupies the first rank with (3.33%) of total citations which is followed by Thanuskodi, S (0.95%). The findings from this study could serve as a user study with implications for input for the librarians to develop library collection as per the requirements of the users / users demand of the learning resources and in designing of users' services in the Assam University Library in particular and other university libraries and institutional libraries in general.

Keywords: Citation analysis, Bibliometric Study, Master of Library and Information Science Dissertations, Department of Library and Information Science-Assam University, Silchar

Introduction

A Citation analysis is a bibliometric study that measures how often a published work is cited. Citation analysis is a worthwhile area of research. "Citation analysis" refers to references in one text to another text, with information on where that text can be found. Citation analysis is useful for understanding subject relationship, author effectiveness publication trends and so on. Citation and content analysis are commonly used bibliometric methods. Citation analysis is the study of the quantitative data derived from the use of citations (e.g. bibliographies, works cited, reference pages in books, articles or other publications) as a means of determining the scholarly impact or influence and assumed quality of a journal, an individual article, and an individual author/researcher. Citation analysis can be as simple as counting the number of times a person or article has been cited by others, a ratio of their citations to their output, or some other mathematical computation that relates their citation counts to other measures. There are multiple tools and resources that can be utilized for conducting citation analysis.

1 Concept of Citation Analysis

Citation Analysis is one of the most commonly forms of bibliometric studies. It makes use of bibliographic references that are essential part of the primary scientific communication. The technique of citation analysis involves the process of collection, counting, analysis and interpretation of citations given in various types of literature. Analysis of such references can reveal the relative use of different kind of documents, age of used documents, most frequently used items, preferences of country and language, authorship pattern and scattering of literature. It is often used for journal ranking and also for evaluation of individuals and departments. Studies of the nature helps the Librarian / Document analyst / library administration to solve problems regarding collection management which in view of rising cost of periodicals and shrinking fund position have been posing serious threat to present day library administration. Similarly other crucial problems like space management; judgment can be solved with the help of these studies. Citation analysis is one of the vital areas of Bibliometrics; hence, we must have a better understanding of Bibliometrics before study Citation analysis. Today citation analysis tools are easily available to compute various impact measures for scholars based on data from citation indices. These have various applications, from the identification of expert referees to review papers and grant proposals, to providing transparent data in support of academic merit review, tenure, and promotion decisions

Since the inception of Bibliometrics, citations have played a very important role in bibliometric research. At last, there were citation count which was used to indicate importance of journals; these counts being statistical did not consider the quality of a work. Ultimately, the citations themselves were closely examined as indicated in many research papers. Citation analysis is a branch of information science in which the way articles in a scholarly field are accessed and referenced is studied. It was developed to identify core articles, authors, or journals in a field (Meho, 2007). It reveals the relationships between works that are represented by references (Garfield, 2004), and thus can guide collection development in academic libraries (Johnson, 2000). Gross and Gross(1927) used for the first time the term citation analysis as a tool for

identifying the core journals in a subject based on counting the citations given at the end of each article from a group of a primary journals. Afterwards, a number of such studies were carried out for citation analysis in dissertations/theses, books, primary journals and reviewing journals (Chikate and Patil, 2008). Citation analysis is a technique of bibliometric research. It is an important research tool understanding the subject, which we analyze the structure and direction of the subject. It measures the utility of documents and relationship between their author and their documents through arranging the citation in some kind of rank or order. It helps to study the growth of literature of any subject (Zafrunnisha, 2012). Citation analysis is the examination of the frequency, patterns, and graphs of citations in articles and books. It uses citations in scholarly works to establish links to other works or other researchers. Citation analysis is one of the most widely used methods of bibliometric. For example, bibliographic coupling and co-citation are association measures based on citation analysis (shared citations or shared references) (Kumar and Raghunadha Reddy, 2013).

1.1 Need of Citation Analysis

Citation of a document, author, journal etc., reflects the merits (quality, significance, impact) of that document (author, journal etc.) Why do authors cite? Why do scientists quote precedence? There may be number of reasons for an author to cite an authority. In the 5th volume of Encyclopedia of Library and Information Science, Weinstocks in his article “*Citation Indexes*” identified some of the specific reasons which are as follows:

- Paying homage to pioneers;
- Giving credit for related work;
- Identifying Methodology, equipment etc;
- Providing background reading;
- Correcting one’s own work;
- Correcting the work of others;
- Criticizing previous work;
- Substantiating claims;
- Asserting researchers to fourth- coming work;
- Providing leads to poorly disseminated;
- Authenticating data and classes of fact-physical constants etc;
- Identifying the original publications in which an idea or concept was discussed;
- Disclaiming work or ideas or others;
- Disputing priority claims of others; and
- To check it further.

Study of citation analysis helps us in studying how a scientist interacts with his colleagues. Two assumptions can be made when a scientist cites another’s work too often:

- The papers selected for citation are those which have been important to a research activity.
- Citations are indicative of influence via the literature, in other word materials.

2 Statement of the Problem

Though the researchers of library and information science and other disciplines have been using different books, journals and periodicals etc. for their research purposes, they are generally using the references to establish their study. There is much confusion how to quote the references along with proper citation which may lead to non authenticity of their work. In order to bring out meaningful suggestions to the library for developing collection development policy, the research work carried out in the form of dissertations submitted to the Department of Library and Information Science during the time span of two years of 2012 and 2013 have been taken into account for the Citation Analysis. This is new department and MLIS Programme has been started in the year 2010-11 and during the period of study , only dissertations submitted during 2012 and 2013 are available for the present investigation..

3 Objectives of the Study

The following are the main objectives of the study:

- To determine the principle form of literature used in research work by LIS student/scholar 2013 in their dissertation submitted ;
- To identify the core and essential journals in the field of Library and Information Science;
- To prepare a list of ranked journals based on its frequency of use ;
- To examine the authorship pattern in citations; and
- To determine publisher wise distribution of citations

4 Scope and Limitation of the study

The study is based on the references appended in the dissertation / research work of Library and Information science student of 2012-2013 batch which composes of 62 dissertations.

- The study is completely confined to the documentary;
- The study area of research is limited to the sources available in references cited dissertation by the library science students of Assam University Silchar 2012-2013 in their dissertations;

5 Methodology

Total number of 1302 citations were found in the 62 dissertations during the year of 2012 and 2013 submitted to the Library and Information Science Department of Assam University, Silchar. Taking those citations in consideration a detailed study is made and a systematic result

is produced with showing the maximum citation of journal, publisher, author, editor, books and websites. All references (bibliographies) were photocopied and each reference was categorized according to format or genre, i.e., book, journal, report, conference proceedings, newspaper, thesis/dissertation, and reference book. A list of periodicals was compiled and data have been entered. Quantitative Research Method was adopted for the Citation Analysis of dissertations which were submitted during the study period. Altogether sixty two (62) number of MLIS dissertations submitted to the Assam University Silchar during the period of 2012 and -2013 were selected a source of data and were examined for data analysis. The citations collected and tabulated for the analysis includes year of publication of articles, journal subject, language of journal, publication status, place of publication, publisher of the journal and authorship pattern etc. All references (bibliographies) were enter/noted down in Ms-Excel and each reference was categorized according to format or genre, i.e., book, journal, report, conference proceedings, newspaper, thesis/dissertation, and reference book and data analysis has been done to find out inferences. On the basis of data entry in MS-Excel, data analysis was done and results were shown in graphical and tabular format.

6 Review of Literature

Maheswarappa and Prakash (1982) studied the literature use pattern by researcher in the field of botany by analyzing 2,726 citations appended to 15 doctoral theses accepted by the University of Mysore during 1973 to 1980. The bibliographic wise distribution of citations showed that journals occupied the first place accounting for 75.61 percent of citations, followed by books (12.42%) and conference proceedings (4.55%). The country wise distribution of theses revealed that USA occupied the first place accounting for 29.25 percent of the total citations, followed by India (14.65%) and UK (13.29%). The half-life of botanical literature was found to be 12 years. Sangam (1985) studied the citations in 131 doctoral dissertations in social sciences accepted by the Karnataka University during the period 1964 to 1982. The findings show that books are highly cited (56.17%) which was followed by journal literature (32.57%). The country-wise scatter of citations showed that India occupied the first position with 86.73 percent of total citations, followed by USA (7.35%) and UK (4.76%). The researchers preferred documents published in the English language (95.75%) and 34.5 percent of the cited literature was available in the Karnataka University Library. Das & Sen (2001) analyzed 1049 citations appended to 34 research articles of journal of Biosciences; 2000. It was found that out of the total citations, journals articles comprises of 85.89% whereas 10.1 % monographs were consulted. Sylvia and Leshner (1995) studied the citations appended to thesis and dissertation of graduate students in the psychology and counseling departments of St. Mary's University, Texas, and prepared a rank list of journals in counseling of psychology. The top 75 titles contributed 62 percent of the total citations. Sangam and Prakash (2006) in their study reveal about the Open Access movement which comprises of many complementary initiatives, including digital scholarly journals, discipline-specific e-print servers, institutional repositories, and author self-archiving. Researchers are extensively using these repositories to publish their research outputs. Bibliographic control of scholarly literature of commercial publications is mostly available in the form of Abstracting, Indexing and Citation sources. But in the similar way for the open access publications it not the same case. Bibliographic control of open access e-resources is a major

issue. The rapid growth of scholarly information resources available in electronic form and their organization by digital libraries is proving fertile ground for the development of sophisticated new services, of which citation linking will be one indispensable example. Many new projects, partnerships and commercial agreements have been announced to build citation linking applications. Authors made an effort in this paper to articulate few bibliographic and citation resources. Kaliammal and Thamaraiselvi (2007) in their paper mentioned that the most innovative online journals are maturing rapidly and distinctive new knowledge portals are emerging day by day. Foremost among the features of the portals is the hypertext link, popularized by the World Wide Web and which will form the basis of a new, highly integrated scholarly literature. Journal integration in this instance seeks to recognize, extend and exploit relationships at the level of journal content—the papers—while maintaining some of the familiar contexts. Links are a powerful tool for journal integration, most immediately in the form of citation linking. The paper defines what knowledge portals are and describes a new system, a link service, which is being developed to support novel and flexible linking mechanisms on the Web. The main aims and objectives of the study and the definitions of citation linking of journal articles and the importance of the citation linking are also discussed in this article with reference to the e-journal Knowledge portal of ACM. The methodology used in the JACM to link the citations is explained with figures.

Verma, Tamrakar and Sharma (2007) analyses 131 contributions of the journal entitled ' *Annals of Library & Information Studies published during 1999-2005*'. The paper examines year wise, institutions wise, state wise distribution of contributions, authorship pattern, citation analysis, length of the contributions etc. The study shows that most of the contributions of this journal are contributed by single author and state wise distribution shows that most of the contributions are contributed from New Delhi. Citation analysis of 1456 citations to find out average number of citations per contribution, types of publications cited and preparing of ranked list of cited journals in contributions of this journal. The study reveals that journals are the most cited publication amongst the library and information scientists and the source journal i.e. *Annals of Library and Information Studies* is the most cited journal in the contributions of this journal. Jan (2009) in her work done Citation Analyses of Library Trends from 1994-2007 comprises of 593 articles and each articles published were examined and highest number (52) number of articles were published in 2004. The journals contained 15662 references. 13783 were p-citations and 1879 were e-citations. Jan (2009) examined 44.51% print books were consulted by the authors and 0% e-books were accessed. Findings indicated that authors consulted 44.04% p-journals and 11.82% e-journals. It was found that email contribution (52.34%) accounted more than mail contribution.(44.66%). Nosrat Riahinia (2010) analyzed a total of 259 MA dissertations in Library and Information Science submitted to five universities in Tehran during 2003-2008 are examined. These universities were selected based on their location and the authors' accessibility to their university libraries. Overall, five out of nine universities in Iran which have Masters Courses in Library and Information Science were selected for this study. The data were gathered using a checklist by the author, who personally attended in university libraries and counted all dissertation references. Verma and Thakur (2010) in their research paper "*Citation Analysis of Doctoral Dissertations in Botany Submitted to Pt. Ravishankar Shukla University*", studied 35 doctoral dissertations in the area of Botany awarded during the period of 1966-2004. The study has been carried out to determine the use pattern of literature in the area. A total of 7,916 references were analyzed for identifying their bibliographic form, authorship pattern, and ranking

of journals. Doraswamy (2011) analysed all the conference papers published in the Convention on Automation of Libraries in Education and Research Institution (CALIBER) 2005 and 2006 was carried out. This paper examines the different bibliographic forms, average number of citation per paper, authorship pattern, different website domains, different types of conference proceedings, geographical distribution and rank list of cited journals. Raman and Varghese (2011) in their study examined the dissertations submitted to the Department of Soil Science and Agricultural Chemistry, College of Agriculture, Vellayani, Thiruvananthapuram which is one of the constituent colleges of the Kerala Agricultural University, has been offering M Sc Degree in Soil Science since 1963. As part of the programme the students have to carry out research on an approved topic and submit the thesis. During the period of 1963 to 2010, 129 theses have been submitted in soil science. A study of the citations in a sample of 18 theses, selected at 10 year intervals is carried out with a view to ascertaining the characteristics of the information sources used by the scholars. The 18 theses selected as sample, altogether carries 1794 references distributed among different categories such as monographs and reference books (8.58%), papers in learned journals (68.84%), conference papers/ proceedings (4.12%), government publications (4.35%), theses (6.4%) and other (7.69%) which include technical reports, statistical bulletins and research reports. Analysing the age of cited items, the obsolescence rate of literature in soil science was calculated. Median citation age is found to be 11.13 years. Chronological variation in the various characteristics of the cited literature was also examined.

Majority of the studies reported in the literature are concerned with the application of citation analysis to study the pattern of literature use and its impact on authors and institutional productivity. The source documents used for citation analysis included mostly journals, books, theses, dissertation and databases. It is observed from the literature review that active research has been done and also it continues applying citation analysis in various subjects with different objectives but, in the field of library and information science there are very few works on citation analysis which has been done in India in general and particularly in North East India there were no study done by any a researcher. So, there is a need to conduct elaborate in-depth research in these areas in the future.

7 Data Analysis

7.1 Bibliographic Form –Wise Distribution of citation.

The distribution of citations on the basis of the different bibliographic form may be cited in the Table 1

Citations from the references in each dissertation were extracted for content analysis. The citations were divided into eight categories viz., journals, books, conference paper, web resources, technical reports and standards, government documents, theses and dissertations and miscellaneous (e.g., patents, personal communications, product literature, software and software manuals, university extension documents, unpublished materials, and others). The data extracted

were entered were into an MS-Excel worksheet to obtain the frequency, distributions and percentage. Altogether 1302 number of citations was collected for analysis. Due to paucity of space details of data analysis and interpretations could not be presented here. Only important findings have been given

Table 1 : Bibliographic Form –Wise Distribution of citation.

Sl. No	Source	No of citations	Percent	Cumulative citations	Cumulative percent
1	Journals	319	24.50	319	24.50
2	Books	289	22.20	608	46.70
3	Conference	77	5.91	685	52.61
4	Thesis/dissertation	89	6.84	774	59.45
5	Reports	48	3.69	822	63.13
6	Websites	301	23.12	1123	86.25
7	others	179	13.75	1302	100.00
	Total	1302	100.00		

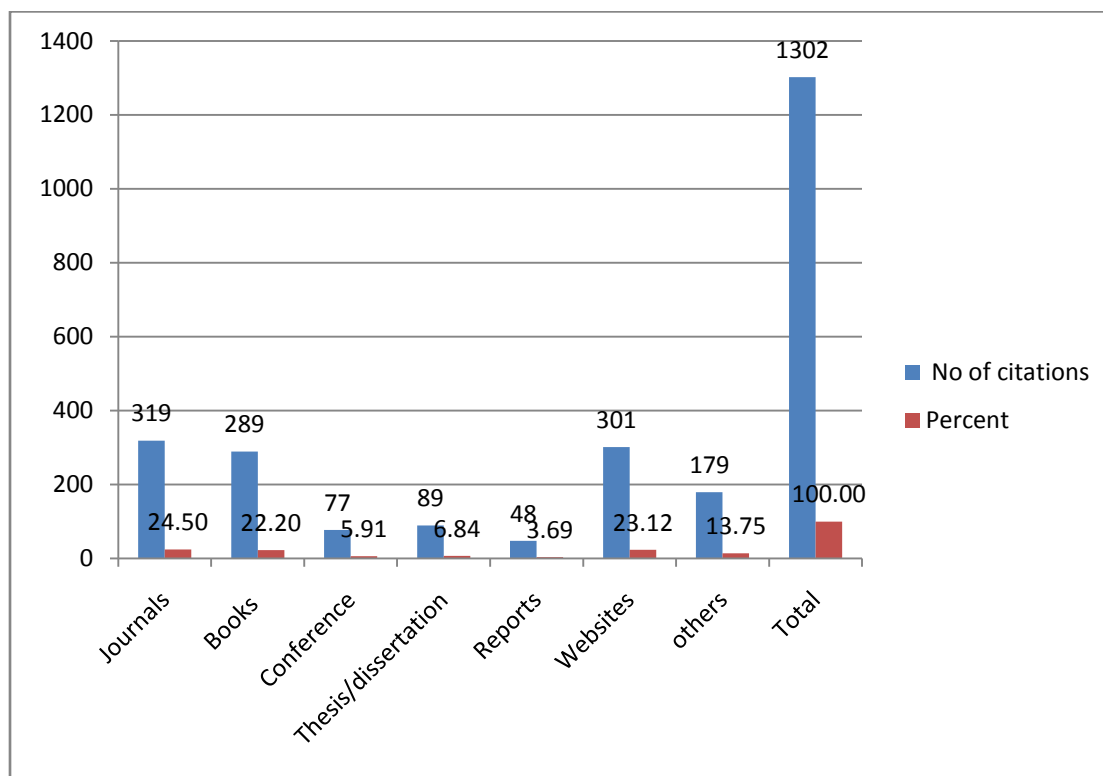


Fig- 1: Percentage distribution of sources used

Table 1 and Fig. 1 shows distribution of different forms of cited literature used by the Library and Information Science students in their dissertations. Analysis of data indicated that highest citations are from journals. Out of the total number of 1302 citations, 319 (24.50%) are from journals, followed by 301 websites (23.12%), 289 books (22.20%), 89 thesis/dissertations (6.84%), 77 conference proceedings (5.91%), 48 reports (3.62%). The type of “Others” includes database, databank, manual, unpublished work, patents, commentary, survey and research bulletin.

7.2 Ranked List of Cited Journals

Journals are essential for research, but their increase demands that librarians study their quality, usefulness and suitability to particular group of users. The ranking list is a practical

tool to help select journals of maximum utility in relation to their coverage of new and important literature in a particular subject area.

Table 2: Rank list of cited journals:

Sl. No	Rank	Name of the journal	No of citations	Countries	%	Cumulative citations	Cumulative %
1	1	DESIDOC Bulletin of Information Technology	54	India	16.93	54	16.93
2	2	Annals of Library and Information Studies	35	India	10.97	89	27.90
3	3	IASLIC Bulletin	14	India	4.39	103	32.29
4	4	SERLS Journal of Information Management	12	India	3.76	115	36.05
5	5	Library Herald	9	India	2.82	124	38.87
6	6	Bull. Med.Lib. Assoc.	7	U.S.A	2.19	131	41.07
7	6	ILA Bulletin	7	India	2.19	138	43.26
8	7	Cyber psychology & Behavior.	6	U.S.A	1.88	144	45.14
9	7	Library Trends	6	U.S.A	1.88	150	47.02
10	7	The Eastern Librarian	6	Bangladesh	1.88	156	48.90

11	8	Journal of Librarianship and Information Science,	5	India	1.57	161	50.47
12	9	Herald of Library Science	4	India	1.25	165	51.73
13	9	JASIS	4	U.K	1.25	169	52.98
14	9	Journal of Computer Mediated Communication,	4	U.K	1.25	173	54.23
15	9	Computers & Education	4	India	1.25	177	55.49
16	9	Journal of Documentation	4	India	1.25	181	56.74
17	10	Chinese Librarianship: an International Electronic Journal	3	China	0.94	184	57.68
18	10	PNLA Quarterly	3	India	0.94	187	58.62

7.3 Publisher Wise Scattering of Citations

Publisher wise citations has been analyzed to determine the percentage of publishers in Table 3

Table 3 : Publisher Wise Scattering of Citations

Sl. No	Name of the publisher	No of publications	%age
1	EssEss Publications	28	15.38
2	Indian Library Association	12	6.59
3	Excel Books	12	6.59
4	Vikas Publishing House	7	3.85
5	TERI the Energy & Resources Institute.	5	2.75
6	Prentice Hall of India Pvt Lmted.	5	2.75
7	New Age International (P) Ltd	4	2.20
8	Shipra Publication	4	2.20
9	Sage Publications India Pvt. Ltd	4	2.20
10	Gyan Publishing House.	3	1.65
11	Deep & Deep Publications Pvt. Ltd.	3	1.65
12	Abhijeet Publications	3	1.65
13	Akansha Publishing House.	3	1.65
14	Pearson Education	3	1.65
15	Computer Society	2	1.10
16	AnupamPrakashan.	2	1.10
17	Commonwealth Publisher.	2	1.10
18	Batam Books	2	1.10
19	Ablex Publishing	2	1.10
20	Ashgate Publishing Limited.	2	1.10

7.4 Ranking List of Authorship Pattern.

Ranking list of Authorship pattern has been analyzed to determine the percentage of authors in single, two, three and four and above authors in the Table 4.

Table 4: Ranking list of Authorship Pattern.

Sl.no	Rank	Name of the author	No of citation	% age
1	1	Sinha, Manoj Kumar	28	3.33
2	2	Thanuskodi, S	8	0.95
3	3	Kumar, Krishan	6	0.71
4	3	Kumar, Rajeev	6	0.71
5	4	Chand, Prem	5	0.59
6	4	Sharma, Dhiraj	5	0.59
7	5	Balasubramanian, P	4	0.48
8	5	Bhatt, R K	4	0.48
9	5	Kothari, C. R	4	0.48
10	5	Kumbar, B. D	4	0.48
11	5	Mishra, R. N.,	4	0.48
12	5	Singh, R. K.,	4	0.48
13	5	Singh, S S	4	0.48
14	5	Vishala, B. K.,	4	0.48
15	5	Devi, T. M.	4	0.48
16	6	Bharihoke, D	3	0.36
17	6	Boyd, D. M	3	0.36
18	6	Chatterjee, A	3	0.36
19	6	Choudhary, Shibojit	3	0.36
20	6	Free Software Foundation.	3	0.36

8 Important Findings

- The present study analysed a total of 1302 citations form 62 Library and Information Science dissertations in Assam University Silchar;
- From the analysis of year wise distribution of citations, it is seen that highest number i.e. 431 documents or 33.10% consulted were published during the period of 2006-2010 and

lowest number i.e. 11 documents or 0.84% consulted which were published during the period of 1976-1980;

- The analysis of citations according to the bibliographic forms indicated that the journal source 319 (24.50%) is the most preferred source of information compared to other sources. Websites and books secure second (23.12%) and third (22.20%) places respectively;
- The most cited out of 319 journals. : ‘DESIDOC Bulletin of Information Technology’ (First rank with 16.93% of citations followed by ‘Annals of Library and Information Studies’ (10.97%) and ‘IASLIC Bulletin’ (4.39%) ;
- From authorship pattern : First Authors citations (56.06%) two (26.84%), three (12.35%), and four and above (4.75%) citations ;
- Analysis on distribution of publisher wise scattering of citations reveals that Ess Ess Publications ranked first with 28 publications (15.38%) followed by Indian Library Association with 12 publications (6.59%), and Excel Books with 12 publications (6.59%);
- The first place in the rank list cover more than 50% of total citations. The first 5 places in the rank list cover more than 75% of total citations. The remaining 25% of citations are scattered among 228 other places;
- Analysis on distribution of ranking list of authorship pattern of citations reveals that a total of 842 authors are cited. the ‘Sinha M.K’ occupies the first rank with (3.33%) of total citations, followed by Thanuskodi , S (0.95%), Kumar Kishan (0.71%), Kumar, Rajeev (0.71%), Chand, P (0.59%), Sharma, Dhiraj (0.59%). The first 4 authors cover nearly 5 % of total citations;
- The predominance of single authored papers over multi-authored papers is observed. The single authored papers accounting for more than 55%;

9 Suggestions

- It has been observed that some of the citations are not clearly understandable which may create biasness while quoting the same in the dissertations under the study.
- While writing citation, the researchers should take outmost care , so that the citations should be perfect ;
- False citations should be also stopped for better results and for accurate conclusions; and
- Putting an authentic reference after the text / paragraphs taken from any document should be the habit of the students and the reference should be in quotation.

10 Conclusion

Citation analysis of dissertations is a tool that academic librarians can use to develop an indicator of collection use by graduate students. Results can inform and support collection development decisions and be used effectively in liaison work. Those new to selection in a particular discipline or library may find this type of methodology to be a helpful tool for understanding the use of their collections. Dissertation citation information is not difficult to obtain and tabulate. Procedures could be established for collecting dissertation reference data routinely to establish a larger data set spanning a several years. Dissertation citations may predict faculty journal article citations, a finding that if replicated in different disciplines and studies, offers librarians opportunities to more readily assess faculty use. In particular, this study reveals a perceptible upward trend of single authorship in books and trend towards collaborative research in journals in Library and Information Science research. The result of this research efforts are being reported in all major LIS journals. Rank list of journals are very useful in the acquisitions of periodicals in the library and ranking of journals could also help in evaluating the importance of journals. This list will also help the researcher and scientist in selecting the most relevant journals in their research area.

To conclude, the citation analysis of MLIS dissertations follows the norms of other citation analysis research that has been done in other fields. It can also be concluded that the results of this type of study would be of great potential value in the library collection and management. This kind of studies would also be helpful to concerned users and contributors to recognize their information needs and requirement

There is ample scope for further study in this area of citation analysis. Further, the subject-wise distribution of citation, language-wise distribution of citations, self-citation rates etc. have been excluded, which can also be studied. In North-East India, particularly in Assam, except very few works on citation analysis, no significant work has been done in the area of Bibliometrics / Citation Analysis. Therefore, sufficient scope for further study on citation analysis is available here. Further study can be performed to analyse the literature use pattern among the research works which are carried out in the states of North-East India, particularly in Assam.

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