

**CITATION ANALYSIS OF DISSERTATIONS SUBMITTED TO THE
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE GOA
UNIVERSITY**

**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE GOA UNIVERSITY THE
DEGREE OF MASTER OF LIBRARY AND INFORMATION SCIENCE**

BY

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ENROLMENT NUMBER

21P034015

UNDER THE SUPERVISION OF

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**DEPARTMENT OF LIBRARY AND INFORMATION
SCIENCE**

GOA UNIVERSITY, TALEIGAO PLATEAU, GOA 2021-2022

CERTIFICATE

This is to certify that dissertation entitled Citation Analysis of dissertations submitted to the Department of Library and Information Science Goa university submitted by Priya Deu Naik in partial fulfilment of the requirement of the degree of Masters of Library and information science of Goa University is her own work carried out under my guidance and worthy of examination.

Mr. Milind Mhamal

Research Guide

Department of Library and Information science

Goa University

DECLARATION

I State that the present dissertation Citation Analysis of dissertations submitted to the Department of Library and Information Science Goa University is my original contribution and the same has not been submitted on any occasion for any other degree or diploma of this university or other university /institution. To the best of my knowledge, the present study is the first comprehensive work of its kind from the area mentioned. The literature related to the problem investigation has been cited.

Place: Taleigao plateau

Date

ACKNOWLEDGMENT

I have received generous help from many people in process of compilation of this dissertation. Here I would like to appreciate and acknowledgment their kind generosity and sincere help.

In a very way, I would like to appreciate and thank my research guidance and coordinator, Mr Milind Mhamal From the very outset, he has taken interest in the study and provided the necessary encouragement and guidance.

I own a deep sense of gratitude to all the librarians and the staff of Goa libraries for their kind help and co-operation throughout my study.

This work would have not seen the light of day without sincere of all my friends and colleagues, to whom I own a debt of gratitude.

In a very special way, I am thankful to my parents for their immense trust and persistent support in all my endeavors.

Priya Deu Naik

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Information science

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CHAPTER -1

INTRODUCTION

1.1 Introduction

Citation analysis is new technique used to measure quantitative the value of document through arranging the citations in some kind of rank or order. It is also used to study the growth and structure of literature of any subject .This technique is helpful tool for the library management in the selection and weeding materials in the face of ever expanding information environment. Citation Analysis principally denotes statistical or mathematical analysis of references or citations appended to at the end of each scientific communication in dissertation or thesis and it is an essential and integrated component of it. The author or the scholar of a scientific paper as an authentic source of information having research value customarily presents the bibliography or a reference or to substantiate the point of view or ideas expressed in the cited paper. Much useful information for location and identification of existing and emerging knowledge of a discipline comes to limelight through both cited and citing papers. Baughman (1974) has viewed citation analysis as a systematic enquiry into structure growth of literature of the subject whereas, Eugene Garfield has advocated it as, an accepted practice in scientific communication to cite reference to work done earlier in that field (Parthasarthy, 1988). He, further ,added that , citations are the formal, explicit linkage between papers that have particular points in common (Garfield , 1983).According to Martyn, citation analysis is the analysis of citation or reference or both ,which form part of the scholarly apparatus of primary communication (Roy .1983).R. Paul Mohan Roy (1980) has opined that citation analysis is a *modus operandi* used to quantitatively the assessment of documents through arranging the citations of documents in some kind of rank or order .In view of the above discussions, citation analysis has now become entrenched part of information research, and quantitative approach to the description of document is gaining ground both in research and practice. It is one of area of bibliometrics which can be employed for discovering the core periodicals and for making out the characteristic feature of a discipline such as, Authorship pattern, Scatter of literature in different bibliographical forms and subjects, etc. Analysis, as a tools was for the first time used by gross and gross (1927) to identify that core periodicals in a subject, based on

counting the citation appended at the end of each article form a group of primary periodicals. Subsequently ,the scholars and authors have inducted several such intensive student in this field, based upon the citation found in dissertation ,books, periodicals of primary nature and reviewing periodicals like chemical Review the sociological reviews ,and the annual review of biochemistry etc. (Aravinda and reddy,1989).

1.2 Need for study

- The main purpose of this study is to determine the information material used in dissertations submitted in the period of 2013- 2021
- Identify the types of information materials cited by master's student in the department of library and information science.
- Determine the most frequently cited journals in library science and information department in dissertation.
- Examine the types of Authorships cited by the master's student.

1.3 Objectives of the study

- The study is based on citations analysis of masters Dissertation in the discipline of library and information science submitted to the Goa University 2002-2021.
- The objectives of the study are to
- To find out the various types of documents used by students.
- To analyze the authorship pattern of cited reference.
- To provide ranking of population of journals on the basis of citations
- To identify chronological distribution of citation.
- To identify the subject wise distribution of journals on the basis of citation.

1.4 Scope and limitation of study

Scope of the present study is limited to the study of general frequency distribution likewise, year wise etc. And determine the core journal of library and information science, testing graphical, verbal. The study also related to the test of authorship trends.

The main limitation of the study is the coverage of the source material from the 117 dissertation in the field of library information and science submitted to Goa University in year 2013 to 2021.

1.5 Methodology

Citation analysis is consequently taken to represent the analysis of bibliographic references which form part of the apparatus of scholarly communication. Bibliographic analysis has now become a well –established tool of research in information science. It is the application of mathematical and statistical methods to books and other media of communication. Citation approach, the methodology chosen for this project is based on the analysis, taken as the sample. The master's dissertations of library and information science accepted by Goa University during the 2013 - 2021 are taken as the source of data for the present study. Here bibliographic entries are considered as equal for the unit of count studying the cumulative total of all the citations and their distribution across the bibliographic variable for the analysis.

CHAPTER -2

LITERARTURE REVIEW

2.1 Introduction

In this chapter an attempt has been made to review the literature on the on the various aspects covered in this study vise ranking, Authorship pattern.

Goa University was started from the year 2013- 2014. The master's degrees student dissertation student has one paper which has 12 credit paper till date there are more than 150 dissertation has been submitted to the department of library and information science. Goa University however no scholar has done proper study of citation analysis of this dissertation. This study has done the citation analysis of dissertation submitted to department of library science till date

2.2 Literature review

A literature review is the comprehensive composition form various documentary sources. They give different perspective and methodologies of the study and help to identify the possible variable that may need to investigate (Chawla & Sondhi, 2016) accordingly, the researcher had reviewed the various research articles from the published source published during last 20 years.

1. (Ksgra, 2016) examine twenty one research papers reviewed of citation analysis used literature in social science during period 1974 -2014 studies have been conducted in the field of history and political science subject carried out of studies was intended to ascertain the information sources of researchers in history and political science based on the citation in their doctoral theses and journal articles. It is an established tool to aid and formulation of various types of library policies and making decision about specific bibliographical form and publication. The based on study the analyzed data revealed numbers of significant aspects of the review of literature used of the universities researchers. The books and journals articles were major source of information used by researchers. Literature were compared by the books and journals citations cited in doctoral theses and articles on history and political science.

1. (Talawar, 2010) In his paper entitled 'Citation analysis of Education dissertations for collection development' evaluated 4,542 citations from 43 dissertations in Education during 2000-2002. The study found that majority (44%) of cited citations was from journals, followed by monographs and reports (56%). More than half of the cited literature (57%) was from books published during 1990-2002. His study also revealed that 'Educational Leadership' was the most preferred journal used by the researchers. The average number of citations was found to be 105 per dissertation.
2. (Simisaye, 2010) In their paper entitled 'Citation analysis of Journal of Library and Information Science (2004-2009)' analyzed 998 references from 72 articles published during 2004-2009. Their result show that journals were the most cited form of material (37.14%) followed by books (33.14%). The findings of their study revealed that 62 cited journals in Library and Information Science produced 172 citations. 'African Journal of Library, Achieves and Information Science' led the 10 highly cited Library and Information Science journals with 40 citations. Majority of the cited materials were published in 1995 or beyond. Their study also revealed that 79.85% of cited materials were written by the single authors, while only 8.8% of the total citations were to Internet resources. Journals published from Africa were rarely cited by authors
3. (Riahinia, 2010) In his paper entitled 'A citation analysis study of MA dissertations in the Library and Information Science field in universities in Tehran' reported that students' citation behavior was in favor of books and Farsi e-resources were lesser used by LIS students than the English e-resources. Highest numbers of book citations was more than the total number of citations in other formats. For electronic

citations, Power Point projects and official home pages were cited more (61%) than other formats, followed by electronically retrieved journals (29.7%)

4. (Klassen, 2011) In his paper entitled 'A citation study of Public Health masters' theses' analyzed 6291 references from 135 theses submitted in Southern Connecticut State University (New Heaven) during 1995-2007. He found that the majority of the citations (65.4%) were from journal articles, followed by monographs (13.5%). The top 20% journals accounted for 68% of citations; top hundred journals accounted for 54% of citations, two journals were cited more than hundred times during 2000. Journal citations percentage varied significantly by year from 78.2% to 52%. The result of their study also reveal that impact factor is not a valuable tool to be used in building the SCSU (Southern Connecticut State University) Public Health journal collection.
5. (Fasae, 2012) Given an overview of the study of citation analysis of dissertation and theses submitted to the development of agriculture economics and extension, federal university of technology akure, Nigeria. In this study, the highest came from journals with (34.97%) and the least come from web resources and revealed that the journals of agriculture economics was cited in 104 times highest from all journals and least journal were Nigeria agriculture development studies only 8 times.
6. (kumar K. a., 2012) In their paper entitled 'Decay and half-life period of online citations cited in open access journals' studied four open access journals published between 2000-2009. The results of their study show that 24.58% of articles had online citations. The 'HTTP 404 error message-page not found' is the overwhelmingly message encountered (67.79%). The average half-life for online citations was 11.5 years.

7. (Doraswamy, 2014)Examined the research activity of citation analysis of Ph.D. Theses in the psychology of selected university in Andhra Pradesh, India. The author found that Andhra University in Basic Psychology cited 177 journals. Dissertation abstracts international highly being cited more number of times with 5% of total journal citations, followed by education research with (3.25%) and psychology review with (2.77%). The first 9 journals in the rank list cover more than 25% of total journal of citations. Remaining citation.
8. (Gupta, 1983) Conducted a study on Citation Analysis of Ph.D. Theses of LIS in Dr. Harisingh Gour University, Sagar. A total of 28 doctoral theses were analyzed which yielded 7284 citations. The study showed that majority of researchers consulted journals i.e. 40.54%, followed by books with 30.08% as compared to other cited sources. As for the authorship distribution, the study showed that more than 75% of citations were single authored. The chronological distribution of cited books showed that 1986-1995 were the most productive years covering 749 citations (34.19%), and the year 1926-1935 were less productive years covering 11 citations i.e. 0.50%. The chronological distribution of cited journals showed that 1986-1995 were the most productive years covering 996 citations (33.73%) and the year 1936-1955 were less productive years covering 2 citations (0.27%) of the total cited journals.
9. (Harinarayana N, 2011)In their study entitled ‘A study of citation accuracy in Psychology theses submitted to the University of Mysore’ analyzed 923 references cited in 5 theses. Their findings indicate that 39.54 % references contained have major errors, misspelling of author(s) name were 21.77%, misspelling of titles were 37.93%, mistakes in volume numbers were 5.76% and mistakes in issue numbers

were 1.15%, mistakes in year were 37.66% and mistakes in page numbers were 62.33%.

10. (singh.H, 2013) In his paper entitled 'Citation analysis of collection building during 2005-2012' analyzed the citation analysis studied of 2388 citations in 179 articles published during 2005-2012 in a journal entitled 'Collection Building'. He noted that mostly articles were contributed by single authors with (65.92%) and majority of the cited articles (69.96%) were published from USA, followed by Canada (3.95%) and India (3.95%). 42.71% citations were from journals, followed by online and electronic sources (25.80%). 'Collection Building' was the top ranked journal with 9.02% citations, followed by 'The Journal of Academic Librarianship' (5.0%), 'College and Research Libraries' (4.22%). The degree of authors' collaboration was found to be 0.34 and half-life of the journal citations was found to be 25 years.
11. (Bebi, 2013) In their study entitled 'Citation analysis of Ph.D. theses in Sociology submitted to University of Delhi during 1995-2010' analyzed 5766 citations from 25 theses during 1995-2010. Their study indicated that majority of the citations (83.94%) were single authored. The highest numbers of citations were from books, followed by journal articles, book chapters, encyclopedias and reports. The result of their study also show that Indian literature received highest citations (45.9%), followed by USA (26.8% citations) and UK (22.4% citations). They also revealed that most cited authors were from foreign countries, followed by Indian authors. 'Economic & Political Weekly' occupied the first rank, followed by 'Indian Journal of Psychiatry'.
12. (Dhaliwal k, 2014) in their paper entitled 'Citation analysis of theses submitted at the Gastroenterology department of the Postgraduate Institute of Medical Education and Research, India' evaluated 1930 citations from 30 theses submitted during

2000- 2010. Their study revealed that journals were the most cited information sources (94%), followed by books (3.69%), reports (1.24%), and conference/workshop proceedings (0.67%), websites (0.2%) and theses (0.1%). Their study revealed that ‘Gastroenterology’ was the most cited journal followed by ‘British Journal of Surgery’ and ‘American Journal of Gastroenterology’. Majority of the cited journals were found to be less than 5 years old. They also revealed that all the top cited journals were subscribed by the PGIMER library, except ‘Pancreas’ and ‘Hepatogastroenterology’.

13. (Sharma. s and Rani A, 2014) In his study entitled ‘Citation Analysis of Management Doctoral Dissertations Submitted to the Universities of Haryana, Punjab & Himachal Pradesh” analyzed 28,928 citations from 210 doctoral dissertations in the field of Management submitted at the Universities of Haryana, Punjab & Himachal Pradesh. His study revealed that majority (43.33%) of the cited citations was from journals, followed by books (31.58%) The finding of his study also revealed In Kurukshetra University, Kurukshetra the respective percentage for the single authorship for journal articles were 51.44% while it were 65.54% for books writings. His study revealed the authorship pattern in cited journals and books indicated that out of the total number of 12535 journal citations, 6121 citations were from single author accounting for 48.83%, followed by joint authors citations 4079 (32.54%).

14. (Veerabasavaiah M, 2014) Carried out on ‘Citation analysis of doctoral theses in Education submitted at the Bangalore University, Bangalore, during 2003-2012’. They found that the mostly theses (12, 28.57%) were submitted during 2009, followed by 11 theses (26.19%) in 2010 and 5 theses (11.91%) in 2004. They revealed that most of the cited journals were published from U.S.A., followed by India and UK. Most cited journal was the ‘Journal of the Applied Psychology’ with (5.20%).

15. (Kittur and Bankapur, 2017) In his study entitled “Citation Analysis of Doctoral Theses Submitted to Department of Agronomy in University of Agricultural Sciences Dharwad: Obsolescence Study”. The present study was to find the obsolescence rate of publications in the field Agronomy by using citation analysis of doctoral from the duration 1987 to 2013 were taken for the study. There were total 92 theses yielding 16976 citations. Analysis is also done to find out the Authorship pattern, Chronological distribution, forms of the information resources cited by researchers in their
16. (Harinarayana, 2012) In their study entitled ‘Citation analysis of publications of LIS teachers in South India’ examined the impact of research contribution of south Indian LIS teachers in using citation analysis method. The result of their study show that majority of the research contributions of South Indian LIS teachers were published in the form of journal articles, followed by conference proceedings, book chapters and editorials. Their study revealed that DRTC and Karnatak University occupied the highly two positions in number of articles published. They found that ‘Organization of information’ and ‘Bibliometrics’ were the most favored areas of research by South Indian LIS teachers. The research article ‘Classification of growth models based on growth rates and its applications’ and ‘Web OPAC interfaces: an overview’ were found to be the highly cited articles. They revealed that Neelameghan, Karissiddappa and Ravichandra Rao occupied the first, second and third positions in the h-index ranking of LIS teachers from South India.
17. (patil, 2017) In his study entitled Citation Analysis of Ph.D. Theses in Economics Submitted to University of Gulbarga, Karnataka during 1984-2002”. In this study 1190 citations were analyzed from economics department in Gulbarga University,

Karnataka. Mostly 6 (37.5%) theses were submitted in 2006, 5 (31.3 per cent) theses submitted in 1986-88 and 1989-2002 respectively.

18. (Chaubey, 2019) Analyzed the citation and authorship pattern of “Journal of Chemical Science (JLS)”, “Pramana Journal of Physics (PJP)” and “Proceedings Mathematical Science (PMS)”. The citation authorship pattern and type of documents were traced by going through the SCOPUS database. Total 18600 articles with citations from 262 issues of 62 volumes were analyzed. The study revealed that RJP and JCS had authorship by more than three authors while in PMS majority of the contributions were by two authors. Majority of the publications cited were journal articles i.e. 95.59%, 84.46%, and 61.32% in JCS, PMS and PJP, respectively.
19. (Olatokun, 2009) Completed a research on the topic “Citation analysis of Ph.D. Theses at Faculty of Science, University of Ibadan, Nigeria”. 124 theses with 21005 citations completed in the ten departments of science from 2006-2013 were analyzed. The study found journals the most cited sources as cited 66.6% times. Further, the accessibility of the cited journals in the Central library of University was evaluated and it was revealed that the library is not having sufficient number of journals for research.
20. (Thamaraiselvi M, 2016) Conducted a research on the topic “Citation analysis of Doctoral theses of Library and Information Science”. The study analyzed 674 citations appended in the six Doctoral. Thesis of Library and Information Science admitted to the Alagappa University from 2011 to 2015. It was revealed that 36.94% of citations per thesis were average number. Authorship pattern showed. 51.17% citations were by single author, followed by 28.43 % by 2 authors and 12.71% citations by 3 authors. Out of the total documents cited 79.67% were journals. “The Electronic Library journal” was ranked as first having 13.83% of total citations in the list of core journals in this area.

21. (Ahmadiéh Dima, 2016) Conducted a study entitled “A comparative Citation analysis study of master’ theses at the American University of Beirut, Lebanon.” The citations of theses submitted in three disciplines, i.e. Mechanical Engineering, Biology and Political Science completed from 2004-2013 were analyzed. The findings revealed that out of 247 theses 96 were of Biology, 91 of Mechanical Engineering and 60 of Political Science and out of 23,316 citations 13,463 are of Biology, 3395 are of Mechanical Engineering and 6458 of Political Science. The finding shows that in Biology and Mechanical Engineering 95.14% and 61.03% citations were from journal Articles whereas in Political Science citations from monographs were cited the most, i.e. 39.90%. Ranked list of the core journals was prepared in each discipline which revealed that “Journal of Biological Chemistry”, “Energy and Building”, and “Journal of Palestine Studies” were the mostly cited journals in Biology, Mechanical Engineering and Political Science as cited 619, 100 ,58 times respectively.
22. (Geetha, 2016) Analyzed 4490 citations of Computer Science thesis, which was submitted to the top five contributing Universities in Shodhganga electronic theses repositories during the period 2014-15. The study analyzed the pattern of authorship, types of literature, subject wise distribution of citations, rating of the journals. Findings of the study revealed journals as the most preferred source of information “Journal of IEEE” was cited 332 times. The present study will help to recognize the information needs of researchers in the field of computer science and will be helpful to the librarians during the process of selection and acquisition of useful journals.
23. Kolle and Thyavanahalli (2016) undertook a bibliometric study entitled “Global research on air pollution between 2005 and 2014: a bibliometric study”, in which they had to go through a large number of articles, approximately 4424 which were published in various journals and were not confined to one language. No doubt, the number of articles in English were more than any other language as English language publications

were 4276 out of 4424. The number of articles published in 2013 and 2014 increased substantially and were 563 in 2013 and 638 in 2014. As a consequence of this, number of the pages also increased proportionately. It would be worth mentioning here that the articles published on environment science were found to have increased in large numbers. It was also noticed from this study that the researchers had broken the previous record, and the number of cited articles had touched the limit of 1743. Another very prestigious journal dealing with this subject named Atmosphere Environment & Environmental Health perspective also contained a very high number of the citations which constituted 11.79% of 4424 articles remaining.

24. (AJayatissa, 2015) Analyzed 4,901 citations of 50 thesis to the Colombo University for Master in LIS and 20 theses submitted to the Kelaniya University for the Masters in Social Science in LIS. It was found that books (39%) were highly used source as compared to Journals (34%). The book entitled “Organizational Behavior” by Robbins (2001) and the journal “College and Research Libraries” were used to the maximum. Further, the mean half-life of books and journals was 13 & 7 years respectively.
25. (Borthakur, 2015) Performed a study entitled “Citation analysis of Theses and Dissertations in Chemistry” admitted to the LNB Library of Dibrugarh University, from 2009-2013. The study indicated that 36.96 % (1902 out of 5145) citations are by more than three authors followed by 32.49% by 2 authors and 14.92% by a single author. Further, number of journals cited is highest i.e. 82.68% followed by books (14.90%), technical reports (0.79%), web resources (0.66%), seminar conferences (0.62%) and Ph.D. theses (0.33%) “Journal of American Chemical Society” has been ranked at first among the 24 core journals in Chemistry.
26. (B.U, 2015) Completed a study entitled “Citation analysis of Doctoral Dissertations in Commerce submitted to Goa University, Goa: A bibliometric study. The study analyzed 2431 citations appended to 19 Doctoral theses in Commerce completed and submitted

to Goa University from 1998 to 2012. The study shows the collaborative trend among authors as the 52.16 % citations were the contribution of multiple authors. 1505 citations out of 2431 were from journals followed by 490 and 115 citations which were from books and reports respectively. “Journal of Finance” was ranked first among the list of various refereed journals. Further, the study revealed that 96.17% of citations were from printed sources, and 3.82% citations were from electronic sources which means that the majority of the scholars of commerce preferred to use printed documents than the electronic ones.

27. (Banateppanvar, 2013) Studied “the citations of 12 Doctoral theses of Zoology, submitted to the Kuvempu University, India during the year 2002 to 2006”. The main aim of the study was to assess an average number of references per thesis, form, authorship pattern, subject wise distribution, chronological distribution of citations, geographical distribution, rank list of core journals and application of Bradford’s law. The findings of the study show that the maximum theses, i.e. 33.34% were submitted in 2005, and on an average, 184.08 citations were cited per thesis. The study revealed that maximum citations were of journals accounting to 74.47% citations. 35.75% citations were by dual authors, and overall contribution shows that 64.98% of the citations were by foreign authors while the 35.02% were by Indian authors. The study shows that 38.88% of citations were from the documents published from USA. “Mutation Research” and “Journal of Experimental Zoology” were the most preferred journals in the field. Subject wise analysis of citations revealed that Entomology and Ecology were the main subjects constituting 18.78% and 12.76% citations respectively.

28. (Jadhav, 2011) Analyzed 49566 citations given in 224 theses of Physical Science submitted to the Babasaheb Ambedkar Marathwada University, Aurangabad from Jan 2001 to Dec 2010. The study indicated a heavy dependency on journal literature, i.e. 15506 (79.20%) in Physics and 24965 (83.25%) in Chemistry. Further, in both the

subjects printed literature is more used than the electronic form as 60 (0.31%), and 16 (0.17%) citations were in electronics form in Physics and Chemistry as compared to 19518 (99.9%) printed citations in Physics and Chemistry respectively. Further, in Physics maximum number of citations are of the year 1991-2000 accounting to 5380 (27.47%), and least are from 1901-1910 accounting to 47 (0.24%).

29. (Olatokun W. M., 2009) in their study entitled “ Citation analysis of dissertation submitted to the Department of Animal Science, University of Ibadan, Nigeria” examined the citation of Master degree dissertations of Department of Animal Science submitted to the University of Ibadan, Nigeria from 2000-2007. The study evaluated the age of cited documents and rank list of core journals. This study showed journals as the most handpicked source having 55% citations and “Poultry science” as the highly preferred journal in this subject area having 926 citations followed by the journal “Animal feed science and technology” having 707 citations and has been ranked second in the list of twenty core journal cited in the theses.
30. (Vallmitjana, 2008) In their research entitled “Citation analysis of Ph.D. Dissertation References as a Tool for Collection Management in an Academic Chemistry Library” analyzed 4203 citations appended to 46 Ph.D. theses submitted to Quimic de Sarria (IQS) during 1995 to 2003. Findings of the study indicated that use of scientific paper was 79%, and they are the most frequently used documents. 50% citations were not older than nine years. “Journal of the American Chemical Society” was found as the most preferred Journal.

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2.4 Ranking procedure

Various journal ranking methods have been proposed and cited in literature. The use of citation analysis is well known and is used in a wide variety of applications. Citation offers an unobtrusive quantitative measure. According to Alan Singleton, there are three main methods of ranking citation analysis: use or user judgment and size or productivity. Kessler and Narin and Carpenter showed interesting techniques for mapping certain subject fields and for journal selection. Inhaber has used the JCR data to do an analysis for physics journals. Derik's analyzed citation data of physics journals from six countries and studied from several viewpoints – age country citing and cited etc. He also compared the ranking of journals derived from one source country with the overall list. Sengupta has suggested a new offsetting weight age formula, help in developing a revised rank order list of journals of any discipline. Dhawan and Pull suggested the set intersections of journals under citation analysis of primary literature, citation analysis of secondary literature and use or pattern studies respectively.

CHAPTER -3
DATA ANALYSIS AND
FINDINGS

3.1 Introduction

In this chapter, techniques are used for putting items of reference in some kind of rank or order to study their relative degree of importance, whether they are journal or author cited.

3.2 Forms of documents cited

A total number of citations of 150 Dissertations are distributed among different form of source as shown in the table – 1 . In the analysis of citations on the basis of its forms, it has been found that variety of documents sources are used by the library science student in their pursuits .

TABLE-1
Form-wise Distribution of Cited Literature

sr.no	Forms of literature	No. of citation	Percentage
1	Journal articles	1756	52.1997622
2	Websites	822	24.4351962
3	Books	414	12.3067776
4	Periodicals	161	4.78596908
5	Conference	69	2.05112961
6	dissertation	58	1.72413793
7	series	44	1.30796671
8	encyclopedia	40	1.18906064
	total	3364	100

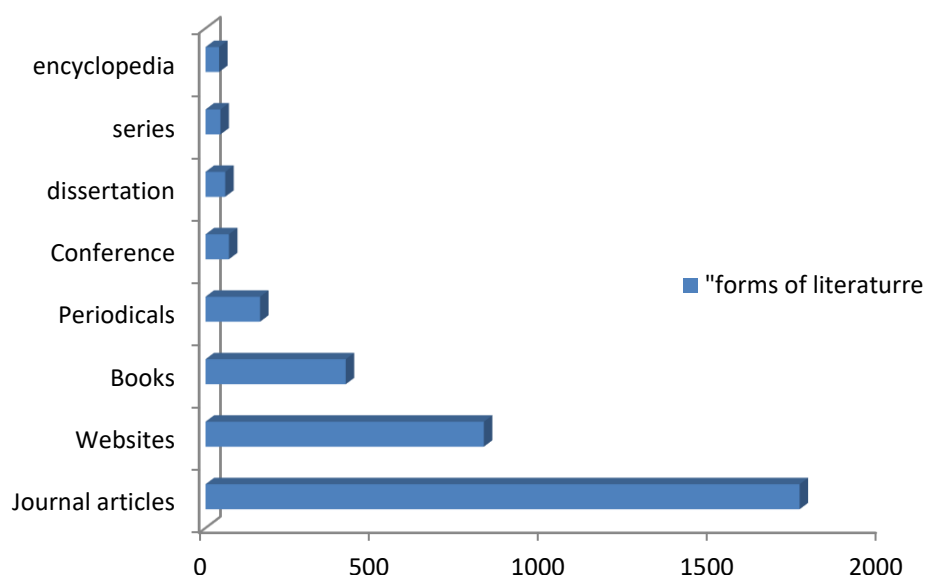


Figure 1: Form wise distribution of cited literature

Table 1 gives the data relating to the distribution of citation among the different documentary form such a journal article, websites, books and periodicals etc. As one of the objective of study is identify the different document forms of the literature used by the library science student . It is observed form study as indicated in table- 1 that the number of citations to journal articles and websites are of higher order than others. It is found form the study , that the journals articles are the major forms of media for citation count of 52.19 % of the total literature used . Followed by websites count of 24.43 %. The contributions of the literature form like books in edited work is 12.30% periodicals is 4.78% conference 2.05% Dissertation 1.72% series 1.30% encyclopedia 1.18%. The relatively high percentage of citation to journal articles edition. websites , books and periodicals and low percentage to conference , series, encyclopedia etc. Indicates that journals article and websites are the most of information.

Books and periodicals etc. Citation are found to be very low for information. Figure 1 shows form wise distribution of cited literature.

3.3 Authorship pattern

With a view to identify the extent of research conducted by individual in collaboration with each other's. The number of authors from bibliographic reference append to dissertation is counted and analysis. The study of Authorship pattern reflects the research trends in library science table 2 gives the distribution of articles on the basis of the number of authors. It is found from this study that largest number of contributions have been made by single authors (57.32%) with 1307 citations.

TABLE 2

Authorship pattern in library science and information

sr.no	Number of Authors	Number of citation	cumulative of citation	Percentage %	cumulative of percentage %
1	single	1307	1307	57.3245614	57.3245614
2	two	706	2013	30.96491228	88.28947368
3	three	169	2182	7.412280702	95.70175439
4	four	47	2229	2.061403509	97.76315789
5	five	42	2271	1.842105263	99.60526316
6	six	3	2274	0.131578947	99.73684211
7	seven	4	2278	0.175438596	99.9122807
8	Eight	2	2280	0.087719298	100
		2280			

The next highest score is two authors papers (30.96%) with 706 followed by the three authors papers 169 (2.06%) four authors contributed 47 (1.06%) which is followed by five author paper 42 (1.84%) six author paper 3 (0.17%) seven author paper is 4 (0.17%) eight authors paper is 2 (0.08 %).

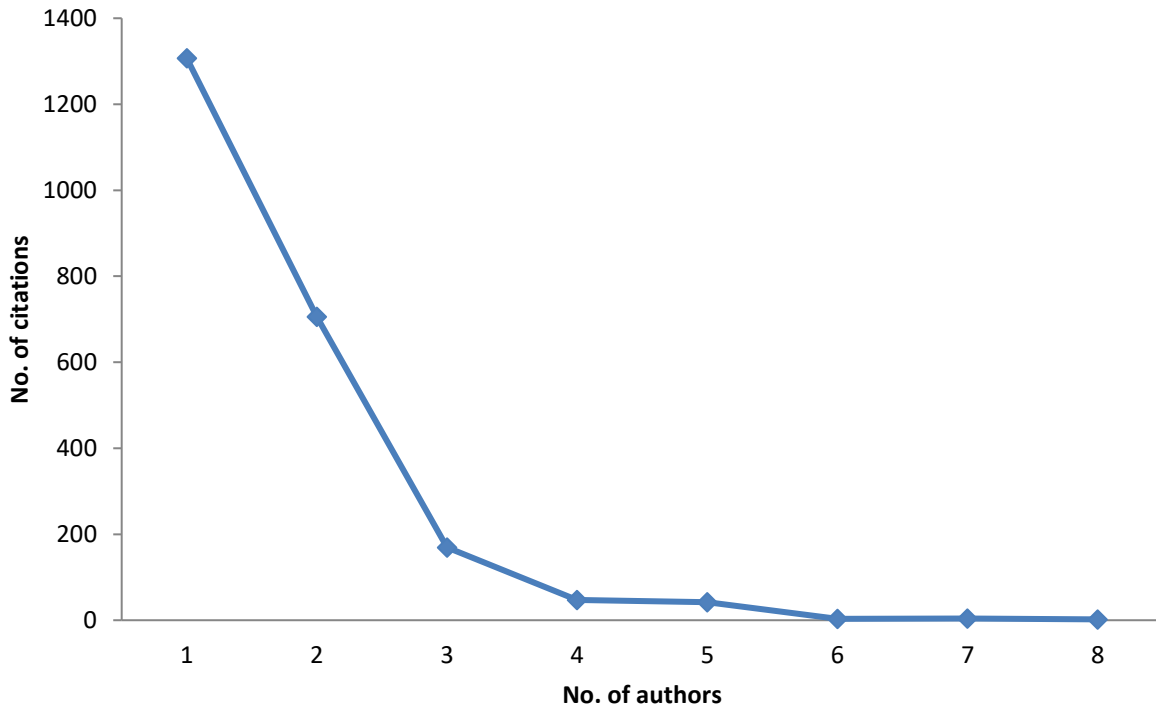


Figure 2 :Graph showing authorship pattern in library science and information

Graph plotted (fig 2) number of author (x- axis) versus number of citations (y – axis) on the basis of data from table 2 show that single authored contribution is more in library science than multi authored papers.

3.3.1 Proportion of multi – author versus single author papers

TABLE-3

Proportion of Multi-author versus Single Authored Papers

	Number of citation	Percentage %
Single author	1307	57.32
Multi author	973	42.67
	Total 2280	99.99%

As show in table-3 authorship pattern out of 2280 paper 1307 (57.37%) of cited papers were single author. When multiple authored(more one author) paper calculated as shown in table 3 together it from 973 (42.67%) citation from this result it indicates that contribution of single author all together is more that of multi author.

3.4 Chronological distribution of Citation

Table -4
Year-wise distribution of citation

year of publication	No. of citation	year of publication	No. of citation
1959	109	1998	43
1961	78	1999	89
1970	112	2000	59
1972	49	2001	93
1974	48	2002	85
1975	81	2003	74
1976	67	2004	125
1977	69	2005	123
1978	117	2006	92
1979	54	2007	78
1980	45	2008	102
1981	47	2009	64
1982	49	2010	107
1983	108	2011	114
1984	111	2012	115
1985	81	2013	161
1986	78	2014	113
1987	142	2015	82
1988	48	2016	80
1989	61	2017	117
1990	71	2018	112
1991	129	2019	68
1992	57	2020	13
1993	113	2021	10
1994	73		
1995	118		
1996	38		
1997	70		

The objective of this analysis is to find which year publication got highest citation, indicating the highly productive year for library information and science literature. For this study data is collected from the bibliographical references of master's dissertations from the year 2002 -2021.

All the 150 citations referred to by student in their research output masters dissertations are from 1959 – 2021. Publication year of cited periodicals or document are arrange in descending order in table.

Graph plotted on the basis of data tabulated in table 5 indicates that 2013 is highly productive year for library information and science.

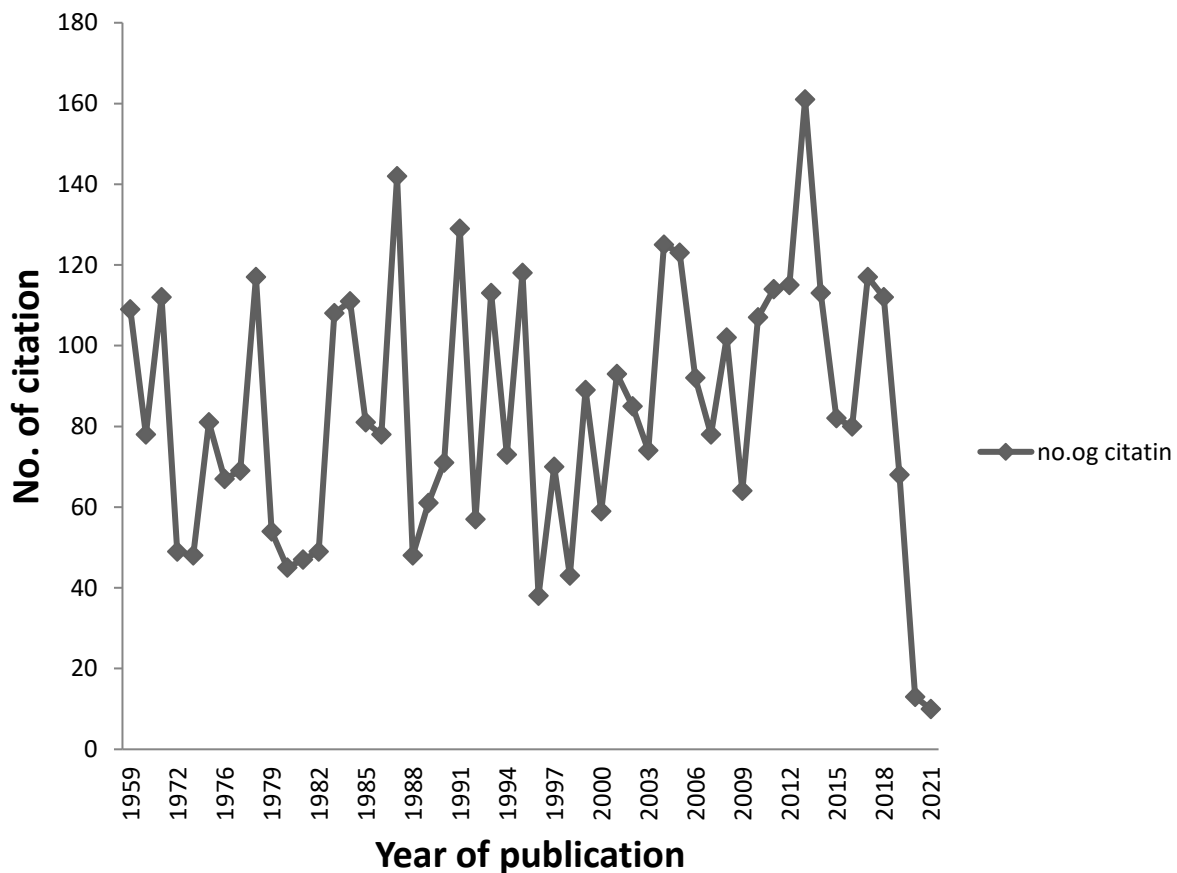


Figure 3: Graph showing productive year for library science and information

3.5 Core journal of library and information science

Student or the information use pattern of research need of research need of research scholars. Ranked list of journal are prepared according to the number of citation received, based on the citation analysis Ranking of journal can also help in evaluating the importance of journals, indicating their popularity of journal among research scholars for their research purpose. It gives the evidence of user's preference to on journal over the other, showing the usefulness in their field of interest. The ranking studies help research scholars reading to know the names of journals, which is importance source of information in their subjects. The selection of periodicals is made on the basic of ranked list of on periodicals prepared through the bibliometric study. In this study articles cited more than 1 times have only been considered with this view a ranked list of periodicals is prepared for the subject of library and information science.

TABLE-5

Ranking of Journals cited by research scholar of library science and information

sr.no	Title of journal	No of citation	Rank	cumul. citation	percentage	cumul. of percentage
1	Library philosophy and practice	46	1	46	9.292929293	9.29292929
2	Library philosophy and practice E - journal	41	2	87	8.282828283	17.5757576

3	SRELS journal of information management	37	3	124	7.474747475	25.0505051
4	DESIDOC journal of library and information technology	30	4	154	6.060606061	31.1111111
5	International journal of library and information science	29	5	183	5.858585859	36.969697
6	International journal of information dissemination and technology	25	6	208	5.050505051	42.020202
7	The journal of academic librarianship	22	7	230	4.444444444	46.4646465
8	Journal of documentation	17	8	247	3.434343434	49.8989899
9	International journal of digital library services	14	9	261	2.828282828	52.7272727
10	International journal of library and information studies	12	10	273	2.424242424	55.1515152

11	chinese librarianship an internationals electronic journal	11	11	284	2.222222222	57.3737374
12	International journal of library and information science	9	12	293	1.818181818	59.1919192
13	University of Chicago press journal	8	13	301	1.616161616	60.8080808
14	journal of advance library and information science	7	14	308	1.414141414	62.2222222
15	Journal of advances in library and information science	6	15	314	1.212121212	63.4343434
16	Journal of library and information science	6	15	320	1.212121212	64.6464646
17	International journal of advance and innovation research	6	15	326	1.212121212	65.8585859
18	International journal of information library and society	6	15	332	1.212121212	67.0707071

19	Journal of intellectual property right	5	15	337	1.01010101	68.0808081
20	International journal of humanities	5	15	342	1.01010101	69.0909091
21	Journal of electronic resource in medical libraries	5	15	347	1.01010101	70.1010101
22	Journal of American There are no sources in the current document. society of information science	5	15	352	1.01010101	71.1111111
23	International journal of library science	5	15	357	1.01010101	72.1212121
24	International journal of information movement	5	15	362	1.01010101	73.1313131
25	Journal of information and knowledge management	5	15	367	1.01010101	74.1414141
26	IP Indian journal of library science and information technology	4	13	371	0.808080808	74.9494949

27	The Australian library journal	4	13	375	0.808080808	75.7575758
28	Malaysian Journal of library and information science	4	13	379	0.808080808	76.5656566
29	Journal of access services	4	13	383	0.808080808	77.3737374
30	Asian journal of information science and technology	4	13	387	0.808080808	78.1818182
31	Indian journal of library and information science	4	13	391	0.808080808	78.989899
32	Journal of medical library association	4	13	395	0.808080808	79.7979798
33	Health information and library journal	3	12	398	0.606060606	80.4040404
34	IOSR journal of research and method in education	3	12	401	0.606060606	81.010101
35	Journal of the international	3	12	404	0.606060606	81.6161616

	association of low libraries					
36	Journal of librarianship and scholarly communication	3	12	407	0.606060606	82.2222222
37	Journal of librarianship and information science	3	12	410	0.606060606	82.8282828
38	Indian journal of traditional knowledge	3	12	413	0.606060606	83.4343434
39	Professional journal of library and information science	3	12	416	0.606060606	84.040404
40	IOSR Journal of humanities and social science	3	12	419	0.606060606	84.6464646
41	library and information science research	3	12	422	0.606060606	85.2525253
42	professional journal of library information technology	3	12	425	0.606060606	85.8585859
43	International journal of humanities and social science invention	2	11	427	0.404040404	86.2626263

44	International journal on computer and engineering	2	11	429	0.404040404	86.6666667
45	The international journal language and culture	2	11	431	0.404040404	87.0707071
46	Academic journals	2	11	433	0.404040404	87.4747475
47	Canadian library journal	2	11	435	0.404040404	87.8787879
48	Journal of American society of information science	2	11	437	0.404040404	88.2828283
49	Journal of social science	2	11	439	0.404040404	88.6868687
50	Journal of library development	2	11	441	0.404040404	89.0909091
51	Information management in a knowledge society	2	11	443	0.404040404	89.4949495
52	International journal of library and information science	2	11	445	0.404040404	89.8989899

53	Pakistan journal of library and information science	2	11	447	0.404040404	90.3030303
54	DESTDOC Bulletin of information technology	2	11	449	0.404040404	90.7070707
55	Indian journal of information library and society	2	11	451	0.404040404	91.1111111
56	Journal of Balkan library union	2	11	453	0.404040404	91.5151515
57	International journal of librarianship and administration	2	11	455	0.404040404	91.9191919
58	International journal of education research studies	2	11	457	0.404040404	92.3232323
59	International journal of Engineering and computer science	2	11	459	0.404040404	92.7272727
60	Journal of the art libraries society of north America	2	11	461	0.404040404	93.1313131

61	European journal of business economic and accountancy	2	11	463	0.404040404	93.5353535
62	IOSR journal of computer Engineering	2	11	465	0.404040404	93.9393939
63	Online international interdisciplinary research journal	2	11	467	0.404040404	94.3434343
64	International journal of multidisciplinary	2	11	469	0.404040404	94.7474747
65	library and information science research electronic journal	2	11	471	0.404040404	95.1515152
66	International journal of scientific and engineering research	2	11	473	0.404040404	95.5555556
67	Journals books and case studies	2	11	475	0.404040404	95.959596
68	International journal of library and information science	2	11	477	0.404040404	96.3636364

69	Journal of interlibrary loan document delivery and information supply	2	11	479	0.404040404	96.7676768
70	DESTDOC Journal of library and information society	2	11	481	0.404040404	97.1717172
71	International journal of library science and research	2	11	483	0.404040404	97.5757576
72	Journal of research method in education	2	11	485	0.404040404	97.979798
73	Journal of interactive online learning	2	11	487	0.404040404	98.3838384
74	journal of Research and Method education	2	11	489	0.404040404	98.7878788
75	International journal of arts science and humanities	2	11	491	0.404040404	99.1919192
76	The Australian library journal	2	11	493	0.404040404	99.5959596
77	ILIS journal of librarianship and information	2	11	495	0.404040404	100

		495				
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Table 5 provides an overall ranking list of journals in the field of library and information science prepared on the basis of the number of grand total of citation of individual journals counted in the source document. Ranking list of core journals is arranged in the descending order of the number of citations. That means the journal with the highest numbers of citations occupies first rank. That journal is the core journal in the field of library and information science.

Among the cited journals, the entitled library philosophy and practice occupies the first place with 46 (9.29%) citations, followed by library philosophy and practice E- journal 41 (8.28%) and SRELS journal of information management stand on third rank with 37 (7.47%) citations. DESIDOC journal of library and information technology 30(6.06%). International information science 29 (5.85%) and international journals of information dissemination and technology 25 (5.05 %) received fourth, fifth and sixth rank with citations respectively the journal of academic librarianship 22(4.44%) Journal of documentation 17 (3.43%) International journal of digital library services 14 (2.82) and International journal of library and information studies 12 (2.42%)

Thus it is noted that a few journals yielded few Citations. A high concentration of citation in a few periodicals is evident

The core or productive journal can be identified on the basis of the ranked list.

3.6 Findings

The findings is based on the analysis of 3364 citations of dissertation of library information and science department.

1. In form wise distribution of citations it was seen that researcher were heavily depend on journal articles sources for their research. It was also found that the journals are the major form of media used with citation count, of 1756(52 .19 %) of total literature used. Followed by websites count of 24.43 %. Therefore journal articles are the first hand original and latest information in the subject and are most preferred channel of information use.
2. In authorship pattern of citations The table indicates that out of the total of 2280 citations 1307 citation were cited by Single Author, were as 937 citations were cited by multi authors which indicates that single-authors were predominant than multi author.
3. Year wise distribution of citations all the 150 citations referred to by student in their research output masters dissertations are from 1959 – 2021. From data tabulated in table indicates that 2013 is highly productive year for library information and science.
4. Ranked list of journal are prepared according to the number of citation received, among the cited journals, the entitle library philosophy and practice occupies the first place with 46 (9.29%) citations, following by library philosophy and practice E- journal 41 (8.28%)

3.7 Conclusion

From the point of view of the library and information centers, it is essential to evaluate and study the research trends from time to time, so that it would be quite easy for designing, organizing and managing the various information services. These findings have thrown much light on variety of information sources on which the researchers depend on, which in turn help to provide better information services to the scholars concerned and also improving the existing services.

Regarding bibliographical form of the cited documents, journal articles are found as the chief information sources followed by websites. Regarding authorship pattern of the citations it can be concluded that researchers followed fairly more single authored publications than collaborative ones.

Among the cited journals, the entitle library philosophy and practice occupies the first place with 46 (9.29%) citations, following by library philosophy and practice E- journal 41 (8.28%).

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