

# CITATION ANALYSIS OF DOCTORAL THESES IN LIBRARY AND INFORMATION SCIENCE ACCEPTED BY NORTH EASTERN HILL UNIVERSITY DURING 1995 TO 2018

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## ABSTRACT

*The study is a citation analysis of LIS Ph.D thesis submitted to North Eastern Hill University, India during 1995-2018. A total of 5044 citations from 34 theses were studied with the objective of determining the nature and characteristics of the citations. Most of the citations are journal articles, single authored documents are more, more than 2/5<sup>th</sup> of the documents referred are from USA, lion's share of the citations are print documents, almost cent percent are in English language, publications from 2000 to 2009 are cited more, the journal 'College and Research Libraries' is the most cited journal, researchers depend upon foreign journals than Indian. The study is useful to the researchers as well as librarians in streamlining library collections.*

**Keywords :** *Bibliometrics, Informetrics, Citations, References, Citation Analysis, Doctoral Theses, Doctoral Dissertations, Ph.D thesis, Library Science, Library and Information Science, Journals, Authorship Pattern, North Eastern Hill University.*

## 1. Introduction

The anglicised term 'Bibliometrics' was adopted and popularised by Alan Pritchard in 1969 and later developed by various bibliometricians. It is the quantitative analysis of publications in order to identify and ascertain the nature and characteristics of literature and media of communication. One of the most important tools is citation analysis. It is measuring the impact of authors, documents and communication by counting the number of citation in their works. Now the advancement and use of ICT tools has profoundly impacted the scope of the subject.

A research scholar can do his/her research sincerely only after understanding the previous research works done in the area by other

researchers. They will get novel and innovative ideas only through delving the past studies on the subject. These references are cited by the researchers in their documents and thus gives credit to the previous studies which is ethically essential. Thus citation analysis (a subdivision of bibliometrics) playing a significant role in it. Research scholars refer a wide variety of documents and is cited in their doctoral dissertations. An analysis of these references are useful in decision making for collection development and also for acquiring materials to be acquired in the library. Libraries are spending a huge amount for purchasing documents in the libraries. Further citation analysis help in weeding library documents.

North Eastern Hill University (NEHU) is a central university set up in 1973 in Shillong, capital of Meghalaya state, India. The university has eight schools and under that several departments. Department of Library and Information Science comes under the School of Economics and Management. LIS department was established in 1985 offering Masters and Ph.D programmes.

## 2. Review of Literature

There are plenty of bibliometric studies pertaining to doctoral dissertations on a wide variety of subjects and all of them are not dealing with citation aspects. Further there are citation analysis studies on Ph.D theses on a plethora of subjects. Since the present study deals with the citation analysis of LIS Ph.D theses, the authors have reviewed those previous studies on citation analysis of Ph.D theses in LIS only. Selected recent studies are reviewed here and a few others are listed in the reference. Reviews are given in reverse chronological order.

A recent study by Mir and Sevukan (2021) analyses the availability, visibility, impact and trend of LIS Ph.D theses deposited in Shodhganga ETD repository. A paper jointly authored by Kaur and Seghal (2021) deals with the citation analysis of Ph.D theses in LIS of Panjab University, Chandigarh during 1976-2017.

Wardikar and Gudadhe (2020) attempts to discover the obsolescence rate of LIS literature in doctoral theses of 1982-2010 in nine universities in Maharashtra. The study by Ali (2020) analyses the citations in the LIS doctoral theses in the University of Kashmir during 1994-2018.

Citation analysis of doctoral thesis in LIS submitted to the University of Maiduguri, Nigeria between 2014 to 2018 were analysed by Abba et al. (2019). Citation analysis of references of Ph.D theses in Knowledge &

Information Science at Ahwas Shahid Chamran University, Iran has been studied by Malekmohammadi (2017). A Nigerian study on citation analysis is by Adu and Mabawonku (2017) in which the authors studied on the doctoral thesis on LIS of University of Ibadan. Sinha and Singha (2016) reported a study on the citation analysis of MLIS dissertations submitted to Assam University, Silchar during 2012-13.

The paper by Gupta (2015) focuses on the research performance of the researchers of Jiwaji University, Gwalior using citation analysis. The objective of the study done by Angamma and Jayatissa (2015) is to analyse the MLS theses of two universities in Sri Lanka – University of Colombo and University of Kelaniya by analysing the list of references and bibliography.

Kannapanavar (1991) did a Ph.D research on the citation analysis of doctoral dissertations in LIS accepted by the University of Karnataka.

## 3. Methodology

A total of 34 doctoral theses accepted by North Eastern Hill University during the period from 1995 to 2018 were taken for the study. These 34 LIS theses has a total of 5044 citations. The sources of the data include title pages, reference cited at the end of each chapter as well as end references. Some of the theses were consulted from the University Library by taking permission. The data was complemented and supplemented with thesis information from Shodhganga of INFLIBNET. Scimago Journal and Country Rank, supplemented by World Cat, were used to identify the country. World Cat and Google Scholar were employed to confirm the sources of the documents, the type of documents, the number of authors' collaboration if any. References of each thesis were checked carefully and entered manually in separate sheets and arranged group-wise based on the

research objectives and then classified and analysed. A few cited sources were unidentified because it is incomplete and inconsistent.

#### 4. Objectives of the Study

The objectives of the study are to:-

- a) Identify the sources of citations.
- b) Determine the authorship pattern
- c) Find out country wise distribution
- d) Study the format of citations
- e) Analyse the languages of the citations
- f) Explore the period of citations.
- g) Find out the top ranked journals cited.

#### 5. Analysis of Data

##### 5.1. Source-wise Distribution of Citations

It is seen that a dozen type of sources cited in the doctoral dissertations. Among them majority are journal articles (58.74%). When you look into other previous studies, one can see that LIS research scholars are preferring journal articles for preparing their theses. Next in order are the books and book chapters (30.83%). Thus it is seen that these two sources together account to a lion's share of the sources (58.74% + 30.83%). Conference proceedings are 4.50% and websites 02.66%. All other sources are below 2% only. Number of citations, percentage and cumulation is given in table 1 also.

**Table 1**  
**Source-wise Distributions of Citations**

Sl.No.	Sources	No. of Citations	(%) Citations	Cumulative Citations
1	Journal Articles	2963	58.74	2963
2	Book & Book chapters	1555	30.83	4518
3	Conference Proceedings	227	04.50	4745
4	Websites	134	02.66	4879
5	Doctoral theses	84	01.67	4963
6	Reports	51	01.01	5014
7	Masters dissertation	09	00.17	5023
8	Newspapers	08	00.16	5031
9	Gazettes	04	00.08	5035
10	Lectures	03	00.06	5038
11	Speeches	02	00.04	5040
12	Others	04	00.08	5044
	Total	5044	100	—

### 5.2. Authorship Pattern

Single authored publications occupy a major share (60.67%) than collaborative authorship (see table 1). In the previous studies also one can see that single authored papers are more in LIS field than those of Science and

related fields. Number of publications with increasing collaboration are found to be decreasing. Two authored papers are 23.85%. Three authored ones are 7.3%. Other types of authorship are below 1% only. Number of authorship and citations are given in fig. 1.

**Table 2**  
**Authorship Pattern in Citations**

Sl. No.	Authorship	Citation	(%) Share	Cumulative Number
1	One	3060	60.67	3060
2	Two	1203	23.85	4263
3	Three	368	07.3	4631
4	Four	99	01.96	4730
5	Five	32	00.63	4762
6	Six	09	00.18	4771
7	Seven	05	00.1	4776
8	Eight	01	00.02	4777
9	Ten	02	00.04	4779
10	Thirteen	02	00.04	4781
11	Unknown	263	05.21	5044
	Total	5044	100	—

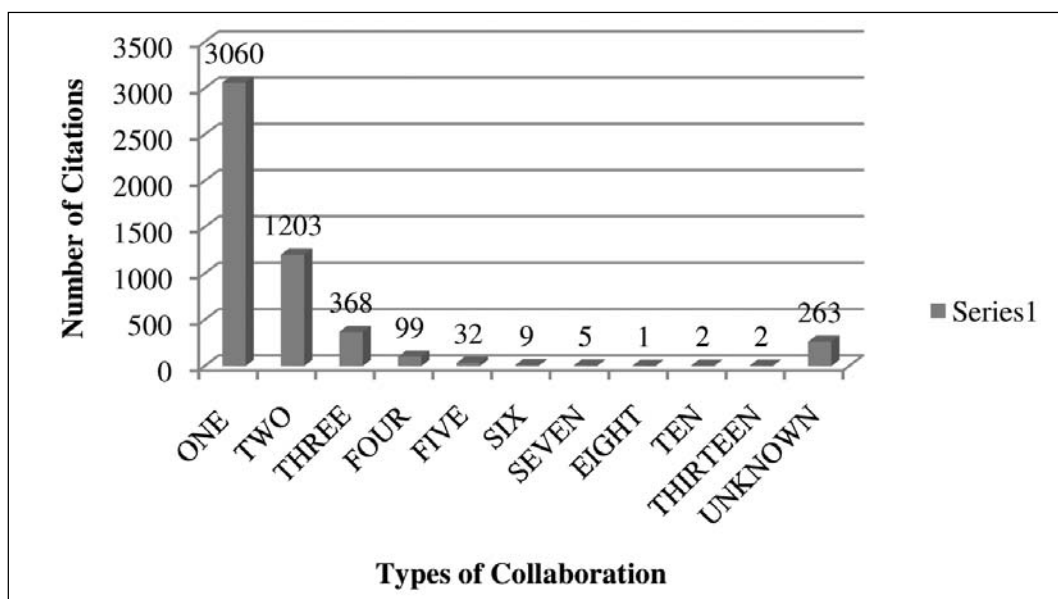


Fig.1. Authorship pattern

### 5.3. Country-wise Distribution of Citations

Publications from sixty countries are seen in the citations. Among this more than 2/5<sup>th</sup>(42.25%) of them are from USA. Publications from UK accounts to 21.57% and those from India comes to 19.55%. Publications

from other countries are less. List of the countries of the publications in the citations analysed are arranged in alphabetical order are given in table 3 and fig.2. Thus it can be seen that the research scholars are consulting those documents published from USA more for their research work.

**Table 3**  
**Country-wise Contribution of Citations**

Sl. No.	Country*	No. of Citations	(%) Citations	Cumulation
1	Argentina	2	0.04	2
2	Australia	50	0.99	52
3	Bangladesh	26	0.52	78
4	Barbados	1	0.02	79
5	Belgium	1	0.02	80
6	Bosnia	1	0.02	81
7	Botswana	2	0.04	83
8	Brazil	1	0.02	84
9	Canada	62	1.23	146
10	China	13	0.26	159
11	Costa rica	2	0.04	161
12	Croatia	1	0.02	162
13	Czech republic	6	0.12	168
14	Denmark	6	0.12	174
15	Egypt	3	0.06	177
16	Ethiopia	1	0.02	178
17	Finland	5	0.10	183
18	France	45	0.89	228
19	Germany	106	2.10	334
20	Ghana	1	0.02	335
21	Hungary	2	0.04	337

22	India	986	19.55	1323
23	Indonesia	1	0.02	1324
24	Iran	3	0.06	1327
25	Ireland	2	0.04	1329
26	Israel	4	0.08	1333
27	Italy	20	0.40	1353
28	Jamaica	2	0.04	1355
29	Japan	14	0.28	1369
30	Jordan	1	0.02	1370
31	Kenya	5	0.10	1375
32	Korea	4	0.08	1379
33	Lithuania	1	0.02	1380
34	Malaysia	12	0.24	1392
35	Malta	1	0.02	1393
36	Mexico	5	0.10	1398
37	New Zealand	10	0.20	1408
38	Nigeria	44	0.87	1452
39	Norway	2	0.04	1454
40	Pakistan	6	0.12	1460
41	Philippines	1	0.02	1461
42	Poland	1	0.02	1462
43	Portugal	1	0.02	1463
44	Russia	15	0.30	1478
45	Singapore	60	1.19	1538
46	Slovakia	2	0.04	1540
47	Slovenia	1	0.02	1541
48	South Africa	22	0.44	1563
49	Spain	4	0.08	1567
50	Sri Lanka	1	0.02	1568
51	Sweden	21	0.42	1589

52	Switzerland	8	0.16	1597
53	Taiwan	8	0.16	1605
54	Tanzania	4	0.08	1609
55	Thailand	2	0.04	1611
56	The Netherlands	93	1.84	1704
57	The UK	1088	21.57	2792
58	The USA	2131	42.25	4923
59	Turkey	4	0.08	4927
60	Ukraine	1	0.02	4928
61	Yemen	1	0.02	4929
62	Zimbabwe	2	0.04	4931
63	Unspecified	113	2.24	5041
	<b>Total</b>	<b>5044</b>	<b>100.00</b>	

\*Countries arranged alphabetically

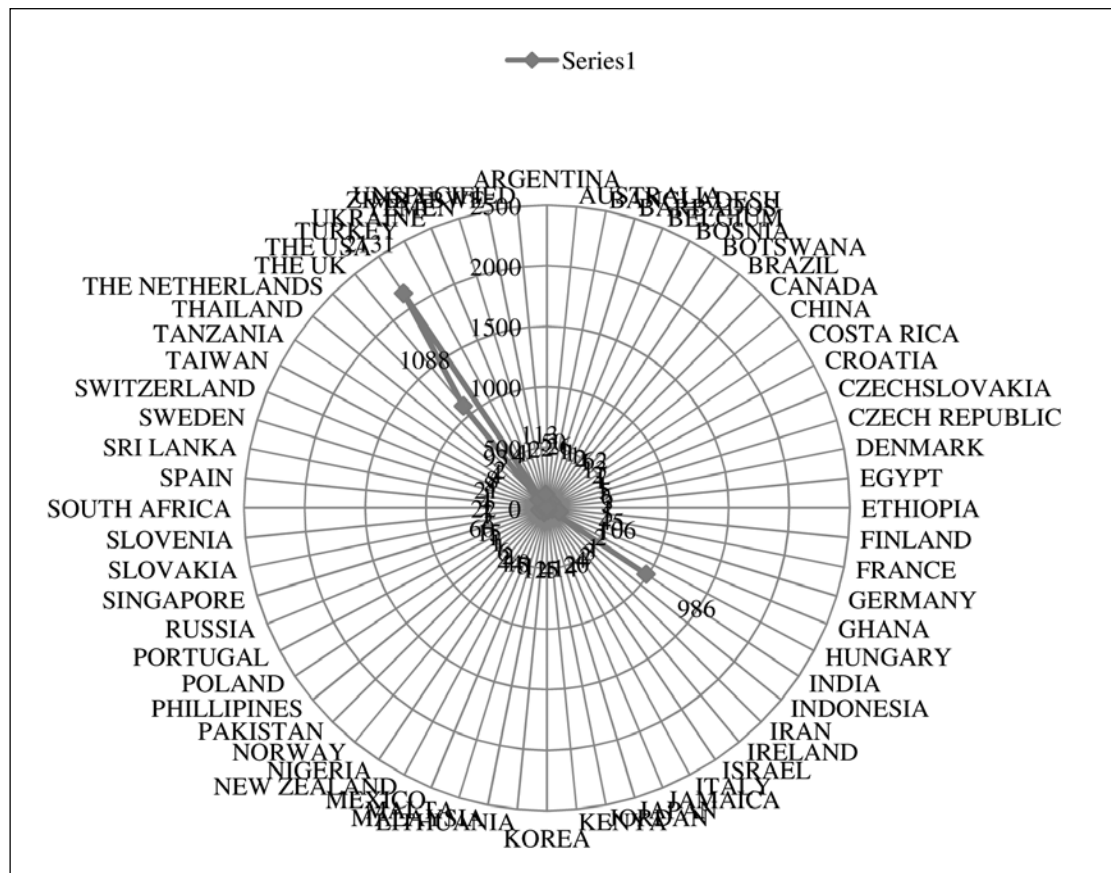


Fig. 2. Country-wise Distribution of Citations

### 5.4. Format of the Citations

References with Uniform Resource Locator or Digital Object Identifier attached with them are considered as digital format and the rest are treated as print format. It is seen

that lion's share (86.80%) of the citations are in the print format and the remaining 13.20% are in digital format (see table 4). Even though plenty of documents in digital format are publishing in LIS, it seems the researchers have not much access to it.

**Table 4**  
**Format of the Citations**

Sl.No	Format	No. of Citations	(%) Citations
1	Digital	666	13.20
2	Print	4378	86.80
	Total	5044	100.00

### 5.5. Language-wise Distributions of Citations

Citations are found to be in twelve languages. It is found that almost cent percent of the citations are in English language

(99.15%). All other languages are less (see table 5). It is believed that the researchers might have translated those publications in languages other than English for their research purpose.

**Table 5**  
**Language-wise Distributions of Citations**

Sl. No.	Language*	No. of Citations	(%) Citations	Cumulation
1	Arabic	1	0.02	1
2	Chinese	1	0.02	2
3	Czech	2	0.04	4
4	English	5001	99.15	5005
5	French	4	0.08	5009
6	German	17	0.34	5026
7	Italian	4	0.08	5030
8	Malay	1	0.02	5031
9	Portuguese	1	0.02	5032
10	Russian	7	0.14	5039
11	Spanish	3	0.06	5042
12	Turkish	1	0.02	5043
13	Uncertain	1	0.02	5044
		5044	100.00	—

\* Languages arranged alphabetically



### 5.6. Chronological Distribution of Citations

The period of the citations were grouped into groups of ten years (decade) (table 6) shows that publications during the period from 2000 – 2009 are cited more (28.69%). Those

publications in the period from 1990–1999 cited are 26.39% and from 1980 –1989 are 17.13%. Thus it is seen that more than half of the citations are from a period ranging from 1980 to 2009. Citations of the most recent decade are less.

**Table 6**  
**Decade-wise Distribution of Citations**

Sl. No.	Decades*	No. of Citations	(%) Citations	Cumulation
1	Prior-1899	4	0.08	4
2	1900-1909	5	0.10	9
3	1910-1919	6	0.12	15
4	1920-1929	11	0.22	26
5	1930-1939	21	0.42	47
6	1940-1949	39	0.77	86
7	1950-1959	127	2.52	213
8	1960-1969	266	5.27	479
9	1970-1979	476	9.44	955
10	1980-1989	864	17.13	1819
11	1990-1999	1331	26.39	3150
12	2000-2009	1447	28.69	4597
13	2010-2019	412	8.17	5009
14	No Date	35	0.69	5044
	Total	5044	100.00	—

\* Arranged according to increasing chronological order

### 5.7. Top Ranked Journals Cited

A total of 790 journals are cited by the researchers during the study period. The journal ‘*College and Research Libraries*’ are cited more with a share of 3.91%. This journal is the official scholarly journal of the Association of College & Research Libraries, a division of the American Library Association.

It is published online-only. In a few other citation studies also this journal is found to be among the first five list of top journals. Second in the list is “*Journal of Documentation*” with 72 citations (2.54%). This journal is a double-blind peer reviewed academic journal published by Emerald Group Publishing. It is a bimonthly journal on Information Science and Library Science. Next

in order is the journal “*Library Trends*”. It is a quarterly journal by the John Hopkins University Press (United States). JASIST has 1.87% of citations and “*Journal of Academic Librarianship*” with 1.83% of citations. These two journals are also from USA. Thus it can be seen that the first five journals in the list are USA and UK. Among the twenty journals in the top ranked journals only two Indian

journals are found. They are ‘*Annals of Library and Information Studies*’ (0.81%) and ‘*Herald of Library Science*’ (0.81%). This shows that LIS researchers are depending on good quality foreign journals than Indian journals for their research work. Therefore the journals which are seen in the top of the list must be acquired in the library for the benefit of the researchers.

**Table 7**  
**Top Twenty Ranked Journals Cited**

<b>Sl. No.</b>	<b>Name of the Journal*</b>	<b>No. of Citations</b>	<b>Rank</b>	<b>Citations (%)</b>
1	<i>College and Research Libraries</i>	111	1	3.91
2	<i>Journal of Documentation</i>	72	2	2.54
3	<i>Library Trends</i>	56	3	1.97
4	<i>Journal of the American Society for Information Science and Technology</i>	53	4	1.87
5	<i>Journal of Academic Librarianship</i>	52	5	1.83
6	<i>Media Asia</i>	48	6	1.69
7	<i>Library Management</i>	47	7	1.66
8	<i>Library Philosophy and Practice</i>	42	8	1.48
9	<i>ASLIB Proceedings</i>	41	9	1.45
10	<i>Annals of Library and Information Studies</i>	39	10	1.38
11	<i>Library and Information Science Research</i>	39	10	1.38
12	<i>Journal of Broadcasting And Electronic Media</i>	38	11	1.34
13	<i>Library Review</i>	35	12	1.23
14	<i>Journal of Librarianship And Information Science</i>	34	13	1.2
15	<i>Library Quarterly</i>	32	14	1.13
16	<i>Electronic Library</i>	29	15	1.02
17	<i>Libri</i>	27	16	0.95
18	<i>Herald of Library Science</i>	23	17	0.81
19	<i>Indian Journal of Extension Education</i>	23	17	0.81
20	<i>Annual Review of Information Science and Technology</i>	22	18	0.78

\*Journals arranged rankwise

## 6. Findings

Major findings of the study are:

- a) Majority of the documents used by the LIS researchers are journal articles (58.74%).
- b) Single authorship is predominant (60.67%) in the citations than collaborative authorship.
- c) More than 2/5<sup>th</sup> of the publications used by them are of USA origin and 1/5<sup>th</sup> from UK.
- d) Lion's share (86.80%) of the citations are print documents.
- e) Citations in 12 languages are found among which almost cent percent of them are in English language.
- f) Researchers mostly cite documents published during the period of 2000–2009.
- g) A total of 790 journals are cited. Out of which the journal 'College and Research Libraries' publishing from USA is cited more.
- h) Researchers consult good quality foreign journals than Indian journals.

## 7. Conclusion

Citations are best performance indicators for evaluating research. Citations in Ph.D thesis of researchers shows the amount of usage as well as nature and character of documents. Librarians have limitations in delving into the quality of the documents cited, but quantitatively they can assess the type of information resources used. The present study will greatly help in deciding what type of documents should be acquired in libraries for the benefit of the research scholars in Library and Information Science. The acquisition policies in the university libraries should be restructured in the light of citation analysis studies.

Training programs on literature search should be done as a part of the Master's Program. Not only that it has to be incorporated into the curriculum. Orientation programs should also be conducted for research scholars not only in LIS, but also on other subject areas. Such programs will benefit the research scholars to effectively harness the information sources acquired in the library as well as those available through electronic and cyber sources. Library professionals should occasionally conduct bibliometric and citation studies so that current trends in various subjects revealed. Such information is of great use in decision making on continuation or discontinuation of document subscription or purchase.

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