

INFORMATION USE PATTERN OF LIBRARY AND INFORMATION SCIENCE PROFESSIONALS: A BIBLIOMETRIC STUDY OF CONFERENCE PROCEEDINGS

By

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ABSTRACT

Bibliometric study of all the conference papers published in National Convention on Knowledge, Library and Information Networking (NACLIN) from 2001 to 2008 was carried out. 300 conference papers are published in the NACLIN proceedings during the eight years. Highest number (54) of articles is published in 2007. The conference volumes contained 3001 references for the study period of which 1709 are p-citations and 1292 are e-citations. Each conference volume published approx. 38 papers and each paper has an average of 5.7 p-references and 4.3 e-references. Among the p-citations, journals accounted for 40.08%, books 33.88%, and seminar/conference proceedings 17.44%. Among the e-citations, the .org websites are the most useful source of information. Contributions by single author and small teams comprising two or three authors account for about 82.67 percent of the authors. More than fifty percent of the papers contributed from New Delhi, Maharashtra, Tamilnadu, Andhra Pradesh and Kerala. The weekly higher education journal “University News” gets first rank for being cited more number of times.

KEY WORDS: Bibliometrics, Citation analysis, Print citations, Electronic Citations,

1. INTRODUCTION

In recent years, interest in scholarly publications in electronic forms has boomed, and several large scale electronic digital libraries and citation indices are now used every day by researchers. The fact that formal citation metrics have become an increasingly large factor in decision-making by universities and funding bodies worldwide makes the need for research in such topics and for better methods for measuring the impact of work more pressing. Web resources are an important source of scientific knowledge, the extent of their importance has not been measured in a systematic manner. Citations represent the pool of archival knowledge from which authors retrieve established ideas and, in turn, generate new research ideas. This knowledge may be disseminated within an area and across disciplinary boundaries. Such an exchange of knowledge represents the passage of ideas within and among academic disciplines. This exchange process has the potential to enhance or expand a field's knowledge development. Archival knowledge may be cited in a manuscript for reasons such as giving credit to related work, substantiating claims, and generally authenticating the manuscript's contribution to knowledge.

The most frequently used source material in bibliometric studies consists of published scientific papers; however, it has been shown by several researchers that other types of literature are often published and cited by researchers. A careful evaluation of conference proceedings literature may indicate a complete picture of the discipline. The present study has undertaken one of the renowned convention proceedings, NACLIN into consideration with an aim to analyze citations cited by various papers appeared in it. Citation analysis reveals interesting information about knowledge producers in terms their information seeking behavior and usage of various information sources. It can highlight the familiarity, awareness and usage of knowledge producers regarding the online and print information sources. The present studies choose National Convention on Knowledge, Library and Information Networking (NACLIN) Proceedings for citation analysis.

2. DELNET - DEVELOPING LIBRARY NETWORK

DELNET is a major resource-sharing library network in South Asia which covers a wide spectrum of member-libraries and their resources connecting over 1400 libraries in thirty states in India and six countries. Started in 1988 at the India International Centre in New Delhi it was registered as a society in 1992. DELNET is committed to pool the information about resources scattered in the libraries in the country and consolidate information through union catalogues, union lists and other databases. This is being done to satisfy the major information requirements of students, researchers, scholars and the public in the country. DELNET provides Interlibrary Loan and Document Delivery Services extensively to its member-libraries in and outside the country and is one of the most widely used and popular services of DELNET. DELNET databases have exceeded over Eighty Lakh records. The National Convention on Knowledge, Library and Information Networking (NACLIN) is being organized every year by DELNET in collaboration with the different

universities in different parts of the country, which has all the necessary facilities to demonstrate the use of the latest technologies.

3. OBJECTIVES

The main objectives of this study are:

- To identify the different types of bibliographic forms;
- To examine the authorship pattern of contributions;
- To understand distribution of references by article
- To examine the authorship pattern of books cited;
- To examine the domain wise use of websites;
- To identify the core journals; and
- To prepare ranking list of cited journals.

4. EARLIER STUDIES

Roth and others (2000) have been studied a citation analysis of the ACR proceedings a knowledge development and social exchange perspective. They examine the citation analysis used in assessing the scientific status of consumer research publication. Lister and Illona Box (2007) have analyzed a study on citation analysis of the SIGCSE 2007 conference proceedings. They are examines most commonly cited references, journals and books among the 1398 citations made in the 122 publications of the SIGCSE 2007 proceedings. In these proceedings the authors cited a very large array of conferences, journals and books, but the majority is only cited within a single paper. Most books cited are concerned with technical information or are textbooks. Only 2% of books are concerned with computer science education and 23% with education in general. Cynthia Lisee and others (2008) have analyzed a study on conference proceedings as a source of scientific information: a bibliometric analysis. They examine the scientific impact and aging of conference proceedings compared to those of scientific literature in general.

5. SCOPE AND METHODOLOGY

The present study analysis 3001 citations from 300 conference papers published in the National Convention on knowledge, Library and Information Networking (NACLIN) conference proceeding from 2001–2008. All these citations were noted down such as books, journals, conference proceedings, websites, reports, theses/dissertations on slips which are cited in the conference papers. They are analyzed according to the objectives as stated above. The collected data have been analyzed and is presented in the form of tables and graphs as follows.

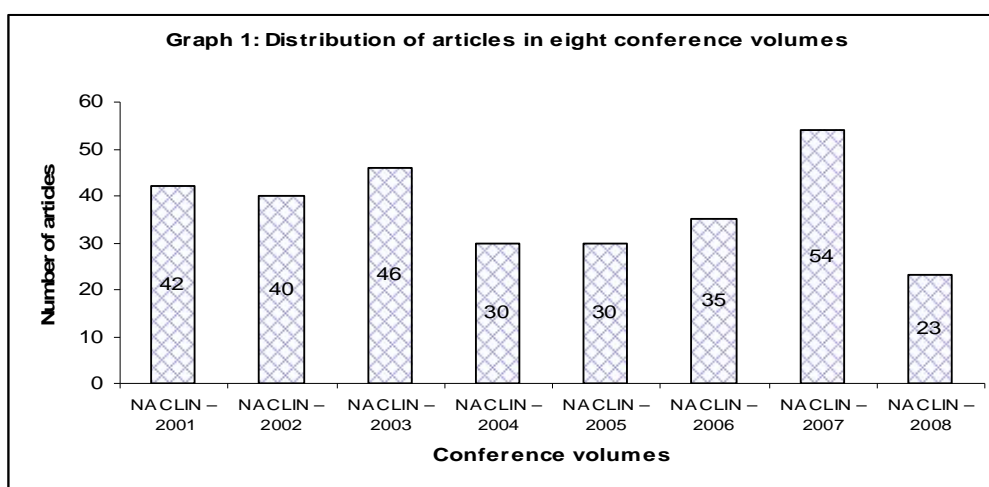
6. DATA ANALYSIS

6.1 Distribution of articles by conference volume

The distribution of articles according to the conference volume wise is shown in Table 1.

Table 1: Frequency distribution of articles by conference volume

Conference volume	No. of articles	Cumulative
NACLIN – 2001	42	42
NACLIN – 2002	40	82
NACLIN – 2003	46	128
NACLIN – 2004	30	158
NACLIN – 2005	30	188
NACLIN – 2006	35	223
NACLIN – 2007	54	277
NACLIN – 2008	23	300



It is evident from the table 1 that the total number of articles published from 2001 to 2008. From 8 conference volumes of the DELNET under study, the total number of articles published is 300, of which the highest number of articles is 54 in NACLIN 2007 and the lowest number of articles is 23 in NACLIN 2008. The range of articles published per conference volume during the period under study is between 23 and 54. It is noted that same number articles (30) got published in NACLIN 2004 and 2005.

6.2 Average number of contributions

The average number of articles per volume is shown in Table 2.

Table 2: Average number of articles per volume

No. of volumes	Total No. of contributions	Average
8	300	37.5

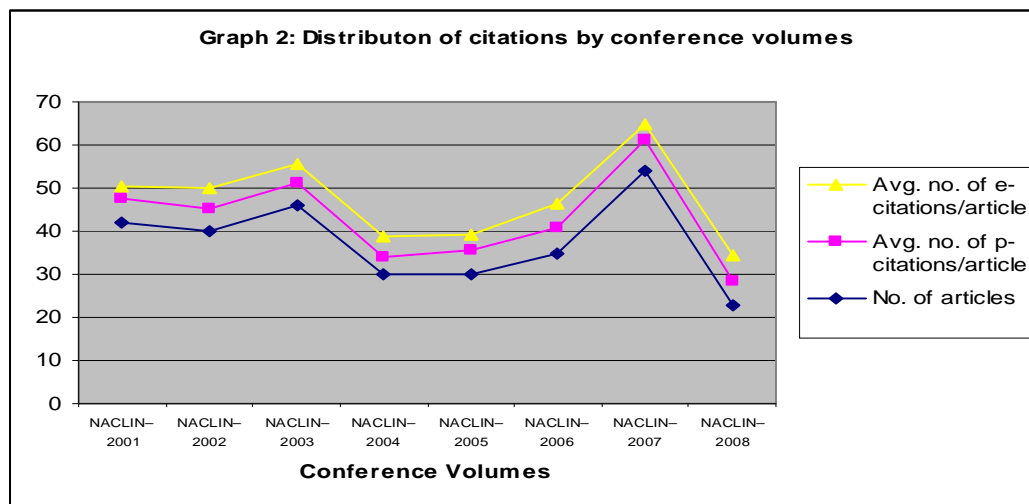
Table 2 indicates that the average number of contributions per conference volume is 37.5.

6.3 Distribution of citations by conference volume

The distribution of citations according to the conference volume wise is shown in Table 3

Table 3: Distribution of citations according to the conference volume

Conference volume	No. of p-citations	No. of e-citations	No. of articles	Avg. no. of p-citations/article	Avg. no. of e-citations/article	Total citations
NACLIN– 2001	230	132	42	5.5	3.1	362
NACLIN– 2002	218	185	40	5.4	4.6	403
NACLIN– 2003	240	208	46	5.2	4.5	448
NACLIN– 2004	126	141	30	4.2	4.7	267
NACLIN– 2005	168	109	30	5.6	3.6	277
NACLIN– 2006	206	188	35	5.9	5.4	394
NACLIN– 2007	397	188	54	7.4	3.5	585
NACLIN– 2008	124	141	23	5.4	6.1	265
Total	1709	1292	300	44.6	35.5	3001



It is evident from the table 3 that the distribution of citations indicate that the eight conference volumes of the DELNET contained 3001 references of which 1709 are p-citations and 1292 are e-citations in 300 articles which means that every conference volume published 37.5 articles and each article has an average of 5.7 p-citations and 4.3 e-citations. Volume wise analysis shows that the highest number of p-citations appeared in 2007 and least in 2008. Whereas highest number of e-citations in 2003 and least in 2005.

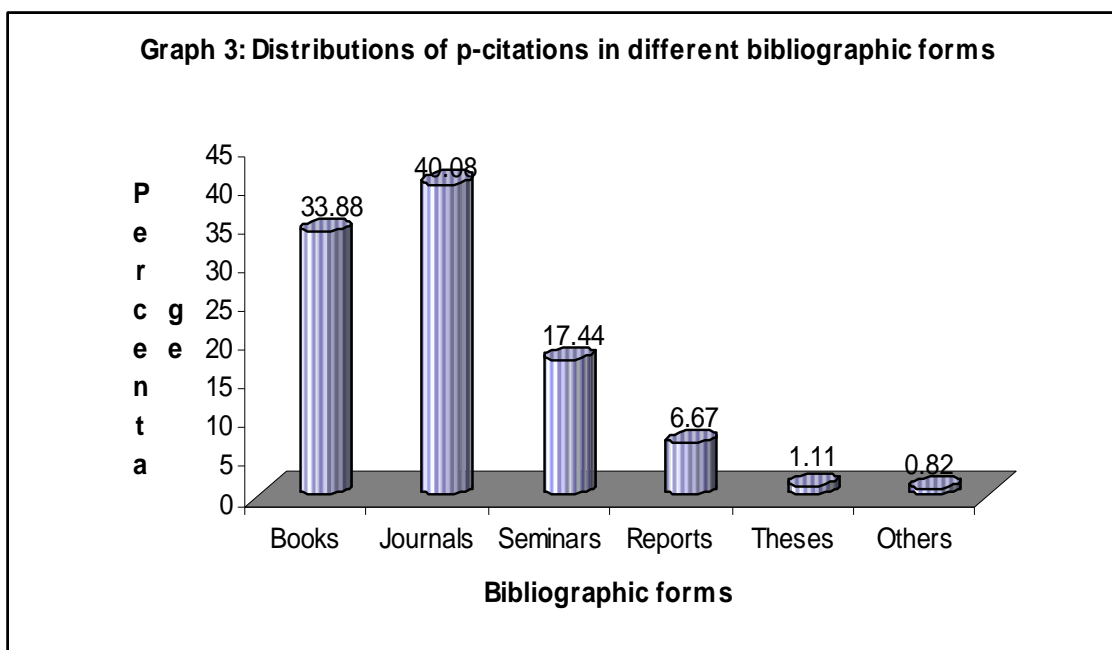
6.4 Distribution P- citations in different bibliographic forms

The distribution of p-citations in different bibliographic forms is shown in Table 4.

Table 4: Distribution of p-citations in different bibliographic forms

Bibliographic forms	No. of citations	Percentage
Books	579	33.88
Journals	685	40.08
Seminars/Conference Proceedings etc	298	17.44

Reports	114	6.67
Thesis/dissertations	19	1.11
Others	14	0.82
Total	1709	100.00



It is evident from the Table 4 that the journals are the cited highest number of citations amounting to 40.08%, and next preferred by citations cited in books (33.88%). Similarly, 17.44 percent of citations dealing with conference proceedings, seminars, workshops etc. however reports and thesis/dissertations (6.67 % and 1.11%) have also been referred for citing the conference papers. It is clear that the books, journals and conference proceeding volumes are the major source of information.

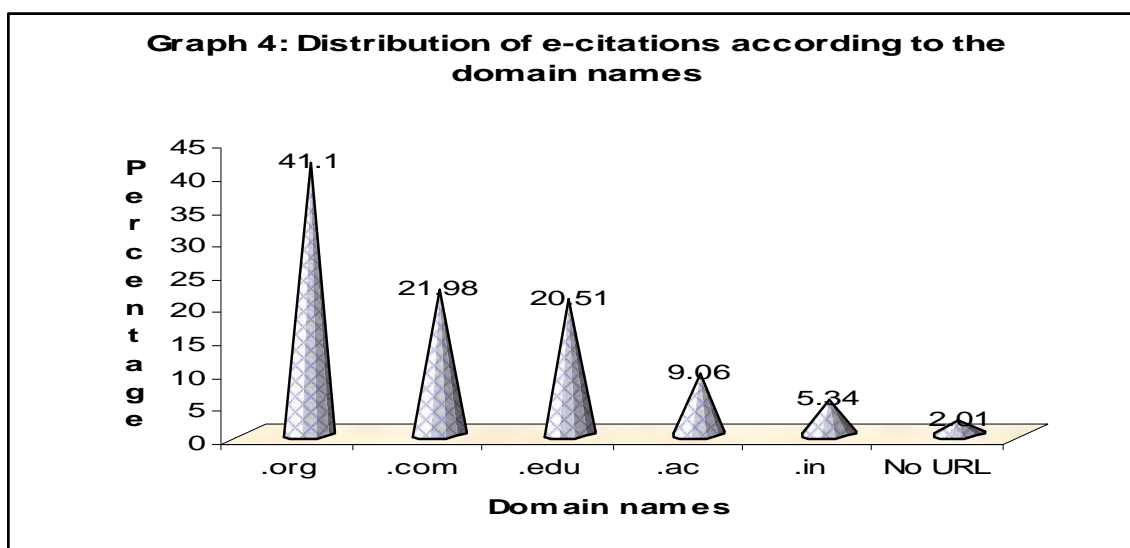
6.5 Distribution of e-citations in different website domains

6.6

The distribution of e-citations according to the website domains is shown in Table 5.

Table 5: Distribution of e-citations according to the website domain

Website Domain	No. of citations	Percentage
.org	531	41.10
.com	284	21.98
.edu	265	20.51
.ac	117	9.06
.in	69	5.34
No URL	26	2.01
Total	1292	100.00



It is evident from table 5 that out of 3001 citations, the number of e-citations are 1292. It can be seen from the table that most of the e-citations of websites are from organizational websites. It contributed the highest number of citations accounting for 531 (41.10%). Organizational websites are the most useful source of information. Commercial websites are contributed to the second highest number of citations accounting for 285 (21.98%). It is also the most preferred source of getting information for the library and information science professionals. Educational websites are the third highest group accounting for 265 (20.51%) of total website citations. .ac domain websites contribute to citations accounting for 117 (9.06%) of the total citations. The lowest number of citations of .in websites contributed citations accounting for 69 (5.34%) of total website citations. In some of the web citations URL is not mentioned. It means authors used the URL but forgot to mention the citation. Its percentage of citations is 26(2.01%).

6.7 Authorship pattern of articles

The distribution of articles according to authorship pattern in eight conference volumes is shown in Table 6.

Table 6: Distribution of articles according to number of authors

No. of authors	No. of contributions	Percentage
Single	158	52.67
Double	90	30.00
Triple	40	13.33
More than triple	12	4.00
Total	300	100.00

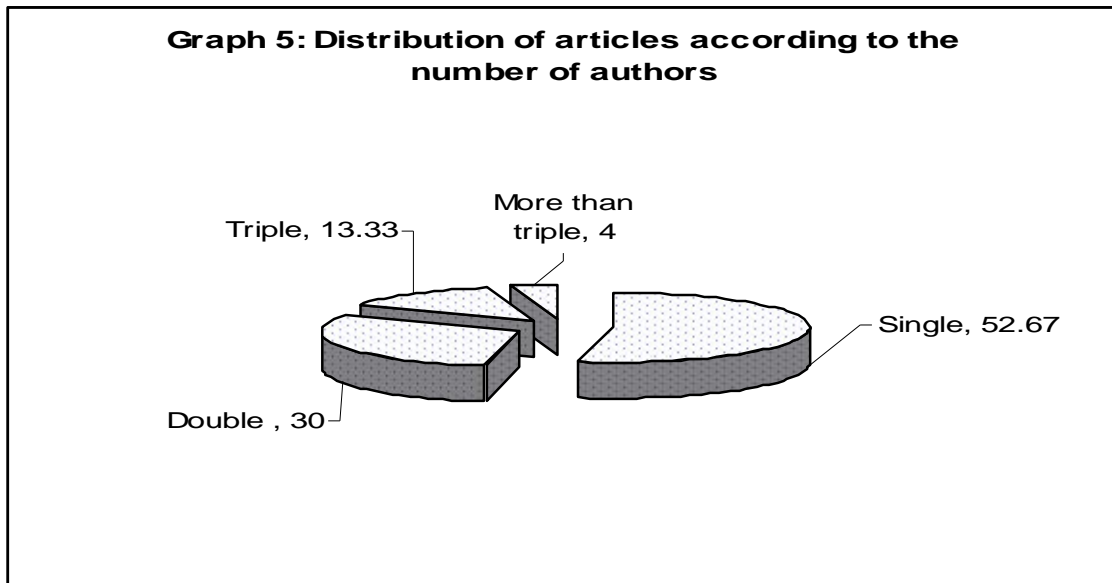


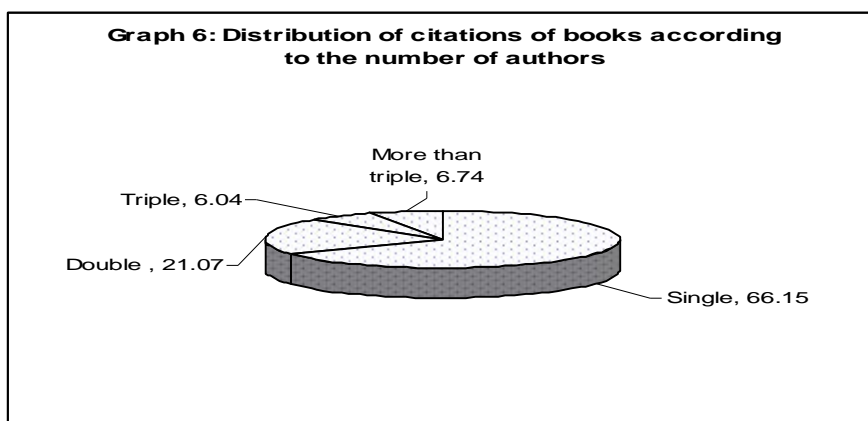
Table 6 shows that out of the 300 contributions, 158 (52.67%) was contributed by single authors, 90 (30%) by double authors 40 (13.33%) by triple authors, and 12 (4%) by more than triple authors.

6.8 Authorship pattern in books

The distribution of citations of books according to the number of authors in eight conference volumes is shown in Table 7.

Table 7: Distribution of citations of books according to the number of authors

No. of authors	No. of citations	Percentage
Single	383	66.15
Double	122	21.07
Triple	35	6.04
More than triple	39	6.74
Total	579	100.00



It is evident from the Table 7 that the authorship pattern of citations of books in eight conference volumes according to the number of authors. It indicates that out of 579 citations, 383 (66.15%) was contributed by single authors, 122 (21.07%) by double authors, 39 (6.74%) by more than triple authors, and 35 (6.04%) by triple authors.

6.9 State wise distribution of contributions

The distribution of contributions in eight conference volumes according to the state wise is shown in Table 8.

Table 8: Distribution of contributions according to the sate wise

S.No	Name of the Sate	No. of contributions	Percentage
1	New Delhi	57	19.00
2	Maharashtra	42	14.00
3	Tamil Nadu	32	10.67
4	Andhra Pradesh	26	8.66
5	Karnataka	26	8.66
6	Kerala	17	5.67
7	West Bengal	15	5.00
8	Punjab	13	4.33
9	Gujarat	11	3.67
10	Uttar Pradesh	10	3.33
11	Jammu	6	2.00
12	Madhya Pradesh	6	2.00
13	Hariyana	5	1.67
14	Uttaranachal	5	1.67
15	Manipur	5	1.67
16	Assam	4	1.33
17	Bihar	2	0.67
18	Orissa	2	0.67
19	Rajasthan	2	0.67
20	Mizoram	2	0.67
21	Himachal Pradesh	1	0.33
22	Jharkhand	1	0.33
23	Sikkim	1	0.33
24	Other countries	9	3.00
	TOTAL	300	100.00

Table 8 shows the state wise distribution of contributions in eight volumes of the NAACLIN proceedings. Out of 300 contributions, the highest number i.e. 57 (19%) was contributed by New Delhi, 42 (14%) by Maharashtra, 32 (10.67%) by Tamilnadu, 26 (8.66)

each by Andhra Pradesh and Karnataka, 17 (5.67%) by Kerala, 15 (5%) by West Bengal etc. It is also evident from it the 9 contributions i.e. (3%) were contributed by other countries.

6.10 Rank list of cited journals

The rank list of cited journals is shown in Table 9.

Table 9: Rank list of cited journals

S.No	Name of the Journal	No. of citations	% age	Cumulative	Cumulati ve % age	Rank
1	University News	17	2.48	17	2.48	1
2	Library Trends	14	2.04	31	4.52	2
3	Journal of Academic Librarianship	14	2.04	45	6.56	2
4	Journal of documentation	14	2.04	59	8.60	2
5	ILA Bulletin	14	2.04	73	10.64	2
6	DESIDOC bulletin of information technology	13	1.90	86	12.54	3
7	IASLIC Bulletin	13	1.90	99	14.44	3
8	Library Herald	12	1.75	111	16.19	4
9	Annals of library science and documentation	11	1.61	122	17.80	5
10	D-Library magazine	10	1.46	132	19.26	6
11	Journal of library and information science	10	1.46	142	20.72	6
12	Online information review	9	1.31	151	22.03	6
13	Herald of library science	9	1.31	160	23.34	6
14	College and research libraries	9	1.31	169	24.65	6
15	SRELS journal of information management	8	1.17	177	25.85	7
16	Journal of information science	8	1.17	185	26.99	7
17	Information studies	7	1.02	192	28.01	8
18	ASLIB information proceedings	6	0.88	198	28.89	9
19	ACM Communications	6	0.88	204	29.77	9
20	IEEE Communication magazine	6	0.88	210	30.65	9
21	Nature	6	0.88	216	31.53	9
22	Library journal	6	0.88	222	32.41	9
23	IFLA journal	6	0.88	228	33.29	9
24	FID Review	5	0.73	233	34.02	10
25	Library information update	5	0.73	238	34.75	10
26	Library magazine	5	0.73	243	35.48	10
27	Information outlook	5	0.73	248	36.21	10
28	Library Hi Tech	5	0.73	253	36.94	10
29	New library world	5	0.73	258	37.67	10
30	The electronic library	5	0.73	263	38.40	10
35	5 journals cited in 4 times	20	2.92	283	41.32	11
36	19 journals cited in 3 times	57	8.32	340	49.64	12
37	64 journals cited in 2 times	128	18.69	468	68.33	13
38	217 journals cited in 1 time	217	31.68	685	100.01	14

The ranking list is essentially a practical tool designed to help the librarians and research scientists to select the journals of maximum utility in relation to their libraries. The rank list of journals in the field of Library and Information Sciences based on the study are

presented in Table 9. All the cited journals were considered it. University News, 17 (2.48%) gets the first rank for being cited more number of times by the contributors in Library and Information Science followed by Library Trends, Journal of Academic Librarianship, Journal of Documentation, ILA Bulletin, 14 each (2.04%), DESIDOC Bulletin of Information Technology and IASLIC Bulletin 13 each (1.90%), Library Herald 12 (1.75%), Annals of Library Science and Documentation 11 (1.61%), D-Lib Magazine and Journal of Library and Information Science 10 each (1.46%).

7. FINDINGS

1. The frequency of contributions is found to be highest number is 54 in NACLIN 2007 and lowest number is 23 in NACLIN 2008.
2. The average number of article per conference volume is 37.5.
3. The analysis of the bibliographic form in NACLIN proceedings reveals that 1709 p-citations and 1292 e-citations are consulted.
4. An average of 5.7 p-citations and 4.3 e-citations are consulted for each conference article.
5. The analysis of the p-citations in NACLIN proceedings reveals that 685 (40.08%) of citations are contributed mainly in journals and 579 (33.88%) are contributed in books compared to other print bibliographic forms.
6. The analysis of e-citations in NACLIN proceedings reveals that the highest number of e-citations is 531 (i.e. 41.10%) are contributed mainly in organizational websites, is followed by .com (21.98%), .edu (20.51%), .ac (9.06%), .in (5.34%) and 2.01 percent are no URL.
7. The analysis of authorship pattern in NACLIN conference proceedings reveals that out of the 300 articles, 158 (52.67%) have been contributed by single authors, 90 (30%) by two authors, 40 (13.33%) by three authors, and the remaining 12 (4%) by more than three authors. It seems that most of the authors in NACLIN proceeding are contributed conference papers without any collaboration.
8. The analysis of the authorship pattern of citations in books reveals that out of 579 citations, 383 (66.15%) have been contributed by single authors, 122 (21.07%) by two authors, 39 (6.74%) by more than three authors, and 35 (6.04%) by three authors.
9. The analysis of the state wise distributions of contributions in eight NACLIN proceedings reveals that Out of 300 contributions, the highest number i.e. 57 (19%) are contributed from New Delhi, is followed by 42 (11%) are from Maharashtra, 32 (10.67%) are from Tamilnadu 26 (8.66%) each are from Andhra Pradesh and Karnataka, 17 (5.67%) are from Kerala.

10. The rank list of journals based on the analysis of citations reveals that the NAACLIN conference proceedings has scattered in 685 different journals. The periodical “University News” gets first rank for being cited more number of times, is followed by “Library Trends”, “Journal of Academic Librarianship”, “Journal of Documentation”, and “ILA Bulletin” (2nd rank), “DESIDOC Bulletin of Information Technology” and “IASLIC Bulletin” (3rd rank), “Library Herald” (4th rank) and “Annals of Library Science and Documentation” (5th rank) respectively.

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