

CITATION ANALYSIS OF ANNALS OF LIBRARY AND INFORMATION STUDIES (2007-2010)

Mr. Chaman Sab, M.

Librarian

SBC First Grade College for Women & Athani P.G. Centre
S.S. layout, 'A' Block, DAVANAGERE
<http://orcid.org/0000-0002-7918-2243>
Email: chamansabm@gmail.com

Dr. Dharani Kumar P

Asst. Professor

Dept. of Studies in Library and Information Science
Shimoga University, Shankarghatta, Shimoga
Email dr.dharanikumar@gmail.com

Dr. B. S. Biradar

Professor

Dept. of Studies in Library and Information Science
Shimoga University, Shankarghatta, Shimoga
Email: bsbiradar53@rediffmail.com

Abstract - *This paper deals with the analysis of the 140 contributions of the journal entitled 'Annals of Library & Information Studies' published during 2007-2010. It 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 2562 citations includes 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.*

Keywords: Citation analysis; Journals; Bibliometrics; Print-citations; Electronic-citations.

Introduction

Periodicals are sensitive indicators of the emerging new ideas in any discipline. A careful evaluation of periodical literature may indicate a complete picture of the discipline. The present study has undertaken one of the well-known journal, *Annals of Library and Information Studies* into consideration with an aim to analyze citations cited by various articles 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. Citation analysis examines the frequency, patterns and graphs of citations in articles and books (Garfield, 1983).

Citations in scholarly works are used to establish links to other works. It is one of the most widely used methods of bibliometrics or it is an aspect bibliometric, and studies reference to and from documents (Gooden, 2001). The benefit of bibliometric and citation analysis is expressed by (van Raan, 2003) which is reinforced by the studies (Lal & Panda, 1996; Aksnes, 2006) that have used this method of research enquiry to evaluate a library collection. The present study is related to Citation Analysis of Annals of Library and Information Studies (2008-2010).

Annals of Library and information Studies is published by the NISCAIR (formerly known as INSDOC), which is an apex body for the promotion of library and information science profession in India. INSDOC has started its publication long back in 1952 and its 54th volume is in market. It covers various current and burning issues related with library and information profession such as professional development, public and special library development, classification and cataloguing, IT and its application in libraries, digital and virtual libraries, bibliometrics, articles on standardization and international cooperation among various library associations and institutions.

Objectives

The main objectives of this study are:

- To examine authorship pattern,
- year-wise, institution-wise and geographical distribution of contributions of the journal;
- To examine the average length of articles and average number of citations per article in the journal;
- To estimate quantitative growth of articles by volume;
- To understand distribution of references by volume;
- To study the consultation frequency of print-citations or p-citations;
- To determine the consultation frequency of electronic-citations or e-citations; and
- To analyze the composition of citations.
- To prepare ranked list from journals cited in the contributions of the journal.

Literature Review

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, journal articles comprises 85.89% and monographs 10.1%. **Ramesh & Nagaraju (2000)** analyzed the citations provided in articles of Indian journal of Information, Library and Society. 138 citing articles have cited 901 citations i.e. on an average 7 citations were cited per article. About 67.5% of articles had 1-20 citations.

More citations were from the books and periodicals than the other type of materials. Similar type of study was performed by Koley & Sen (2003) covering 457 citations appended to 26 research articles published in the four issues of the quarterly Indian Journal of Physiology and Allied Sciences. Of the citations, 76.81% relate to journal articles, 18.59% to monographs, and the rest to conference papers, theses, etc.

Rethlefsen (2007) analyzed citation of journal articles authored by Minnesota Department of Health staff. Information on each cited reference was recorded, including reference type, relative age of citation, and journal name. Journals were the most heavily cited format (63%). Bhat & Sampath Kumar (2008) describes a citation analysis of research articles from scholarly electronic journals published in 2000-2006. The analysis focused on the extent to which scholars are using web-based sources in scholarly electronic journals. Results of the study shows that 81.49% of articles published in selected 9 electronic journals during 2000-2006 have web references. Out of 25,730 references 56.54 % of references are print journal references and 43.52% of them are web references. 437 citations in 32 research articles in two issues of the RMJ were collected by Javed & Shah (2008). The study revealed that 49.52 % citations pertained to journal articles and rest to other resource types. All the above studies except the last one reveals that journals are heavily cited and preferred source of information. In the above studies citations of journal articles were analyzed. Other studies have analyzed the citations of doctoral dissertations or masters' theses come up with the following results.

Slutz (1997) did a citation analysis of 16 Master's theses. Each citation from the 16 theses was analyzed along the following criteria: gender of citation author; format of citation (book, article within book, journal article, thesis, dissertation); and place of publication. Findings indicated that more male authored citations were utilized; most sources were books, articles within books, and journal articles. Gooden (2001) performed citation analysis of dissertations. The 30 dissertations studied generated a total of 3,704 citations. It was found that Journal articles were cited more frequently than monographs: 85.8% of the citations were journal articles and 8.4% of the citations were monographs. A total of 4,012 citations in 70 postgraduate dissertations in education were studied by Okiy (2003). Most students in education used more textbooks (60.3 per cent), than other forms of library materials. Megnigbeto (2006) studied the citations of dissertations of library and information science undergraduate students and found that the number of citations to Internet resources was very low.

Methodology

For the purpose of this study, the journal *Annals of Library and Information Studies (ALIS)* has been selected as the source journal. 16 issues of 4 volumes from 2007 to 2010 have been selected for the study. Data concerning total number of articles, total number of references, total number of articles with electronic references, total number of print references were recorded along with the authorship pattern for each article such as author, author's affiliation, length of contributions, year-wise, institution-wise and geographical distribution of contributions of the journal. The gender of authors has been identified by looking at all the forename of the authors one by one. etc., was scanned, checked and examined carefully. Short communications are also included for the study. The collected data have been analyzed and is presented in the form of tables as follow.

Results and Discussion

Table -1: Year Wise Distribution of Articles

Year	No. of Volumes	No. of Issues	No of Contribution	%
2007	54	1- 4	28	20
2008	55	1-4	35	25
2009	56	1-4	34	24.28
2010	57	1-4	43	30.72
Total			140	100

Year-wise distribution

A total of 140 contributions have been published in four years (2007-2010), which consists of full articles, review articles and short communications. Table- 1 gives details regarding the distribution of 140 contributions published from 2007-2010. Maximum number of articles i.e., 43 (30.72 %) was published in 2010 and minimum number of contributions i.e., 28 (20%) in 2007.

Table -2: Articles Distribution by Gender (Male-Female)

Year	No. of Articles	No. of Authors	Male authors	Female authors
2007	28	48	38(79.16)	10(20.83)
2008	35	68	60(88.23)	8(11.76)
2009	34	69	62(89.85)	7(10.14)
2010	43	80	73(91.25)	7(8.75)
Total	140	265	233(87.92)	32(12.07)

Articles Distribution by Gender (Male-Female)

Table-2 finds male dominance in terms of contribution for majority of years but aggregated figures highlights female dominance with contribution of 12.07 % articles during 04 years. Males have contributed more than 85% during the year 2007, 2008, 2009, and 2010. While as female have contributed more than 7% during the year. 2008, 2009, 2010 but only 10% in 2007.

Table -3: Authorship Pattern

No of author(s)	No of Contribution	%
One	46	32.85
Two	63	45
Three	29	20.71
>three	02	1.42
Total	140	100.00

Authorship pattern of contributions

Table 3 gives the details about the authorship pattern. A total of 46 contributions (32.85%) out of 140 have been contributed by single author, 63 contributions (45%) by two authors and 29 contributions (20.71%) by three authors and 3 contributions (1.42%) by more than three authors.

Table -4: Authorship Pattern of Contributions (Volume Wise)

Vol. No	One	%	Two	%	Three	%	>three	%
54	13	28.26	09	14.29	06	20.69	-	-
55	13	28.26	12	19.04	09	31.03	01	50
56	06	13.04	19	30.15	09	31.03	-	-
57	14	30.47	23	36.50	05	17.24	01	50
Total	46	100.0	63	100.0	29	100.0	02	100.0

Authorship pattern of contributions (volume-wise)

Table 4 gives authorship pattern of contributions volumewise. It indicates that out of the 46 contributions of single author, volumes 54, 55 and 57 has the highest number i.e., 14 (30.47%) and vol. 56 have the lowest number i.e. 6 (13.04%) contributions. Out of the 63 contributions by two authors, vol. 57 has the highest i.e. 23 (36.50%) and vol. 54 has the lowest number i.e., 9 (14.29%) contributions. Out of the 29 contributions by three authors, vol. 55 and 56 has the highest i.e. 9 (14.29 %) and vol. 57 has the lowest number i.e., 1 (17.24%) contributions. Out of 2 contributions by more than three author’s volumes 55and 57 have one each.

Table -5: Single Authored V/S Multiple Authored Papers

Year	With Single authored		With multiple authored		Total Contributions
	No. of papers	%	No. of papers	%	
2007	13	28.26	15	15.95	28
2008	13	28.26	22	23.41	35
2009	06	13.04	28	29.78	34
2010	14	30.47	29	30.85	43
Total	46	100.0	94	100.0	140

Single Authored V/S Multiple Authored Papers

The above table-5 shows the trends in authorship pattern, as multi authored papers are leading in frequency of occurrence in the journal “Annals of Library and Information Studies” throughout the study and more interestingly this growth is continuous which indication about the future pattern in authorship. The difference in frequency can be analyses easily by plotting a graph based on above data.

The highest numbers of contributions in the category of single authorship are contributed in 2010 which are 14 (30.47%) out of 46 single authored papers while in the category of multi authored

papers the highest number of contributions are contributed in the year 2009 and 2010 having 28 and 29 (29.78%) and (30.85%) contributions out of 94 contributions.

Table -6: Institution Wise Distribution of Contribution

Name of Institution	No. of Contributions	%
University and College Libraries	77	55
Institutions	22	15.71
Research Institutions/ Labs	18	12.85
Documentation/ Info. Centers	19	13.57
S/W & MNCs	02	2.14
Government Departments	02	2.14
Total	140	100

Institution Wise Distribution of Contribution

Table-6 indicates institution wise distributions of contributions in the journal. Out of 140 contributions, the highest number, i.e. 77(55%) has been contributed by the staff of university and college libraries. Institutes (Management, Medical and Others) have contributed 22(15.71%) contributions while contributions from the library staff of research institutes/laboratories and teaching faculty/research schools of various library schools are equal i.e. 18 (12.85%) each. Documentation and Information Centers have contributed 19 (13.57%) articles. The articles produced by the Software Professional /Multi National Corporations and Government Departments are 3 each.

Table -7: Geographical Distribution (International)

Country Name	No. of Contribution	%
India	137	97.86
Nigeria	01	0.71
Sri Lanka	01	0.71
Bangladesh	01	0.71
Total	140	100.00

Table -8: Geographical Distribution of Contributions

Name of State/ Country	No. of Contributions	%
New Delhi	38	27.14
Karnataka	23	16.42
West Bengal	15	10.71
Kerala	12	8.58
Uttar Pradesh	09	6.42
Maharashtra	06	4.28
Tamilnadu	06	4.28

Madhya Pradesh	04	2.85
Rajasthan	03	2.14
Orissa	02	1.42
Uttrakhand	02	1.42
Manipur	02	1.42
Haryana	02	1.42
Punjab	02	1.42
Himachal Pradesh	02	1.42
Nederland	02	1.42
Andhra Pradesh	02	1.42
Assam	02	1.42
Gujarat	02	1.42
Kashmir	01	0.71
Foreign Countries	03	2.14
Total	140	100.00

Geographical Distribution (International)

Table-7 shows that international contributions in the journal are very rare and mere 3 contributions are from abroad while the contributions from India constitutes 97.86% portion having 137 contributions out of 140. This shows that the coverage of the journal “Annals of Library and Information Studies” is not very broad and its scope is confined to the Indian continent only.

State wise distribution of contributions

Table 8 gives the state wise distribution of contributions in the four volumes of the journal. Out of 140 contributions, the highest number i.e. 38 (27.14%) has been contributed by Delhi and only 3 foreign contributions are there. Karnataka, West Bengal and Kerala are on second, third and fourth place having 23, 15 and 12 contributions respectively.

Table -9: Distribution of Citations (Volume Wise)

Vol. No.	No. of Citations	%
54	387	15.10
55	568	22.17
56	627	24.47
57	980	38.26
Total	2562	100.0

Numbers in parentheses indicate percentage.

Table -10: Average Citations per Contribution in Each Volume

Vol. No.	No. of Contributions	No. of Citations	Average
54	28	387	13.82
55	35	568	16.22
56	34	627	18.44
57	43	980	22.79
Total	140	2562	18.3

Distribution of citations

Table- 9 indicates that the 4 volumes have 2562 citations appended to the 140 articles. Out of 2562 citations, vol. 57 has the highest number i.e., 980 (38.26%) and vol. 54 has the lowest number i.e. 387 (15.10%). Total 2562 citations have been recorded in 140 contributions therefore the average number of citations per contribution is 18.3 which is good enough (Table- 10).

Table -11: Distribution of Citations by Volume

Vol. No.	Year	No. of p-citations	No. of e-citations	No. of articles	Avg. no. of p-citations/ Article	Average no. of e-citations / Article	Total citations	Cumulative References
45	2007	355	32	28	12.67	1.14	387	387(15.1)
55	2008	471	97	35	13.45	2.77	568	955(37.2)
56	2009	579	48	34	17.02	1.14	627	1582(61.7)
57	2010	825	155	43	19.18	3.60	980	2562(100)
Total		2230	332	140	15.92	2.37	2562	2562(100)

Numbers in parentheses indicate percentage.

Distribution of Citations by Volume

The volume-wise distribution of references indicate that the four volumes (16 issues) of the journal contained 2562 references of which 2230 are p-citations and 332 are e-citations in 140 articles and each article has an average of 15.92 p-references and 2.37 e-citations. Year wise analysis shows that the highest number of p-citations appeared in 2010 and least in 2007. Whereas e-citations are frequently cited in 2010 and least in 2007 and 2009 (Table 11).

Table -12: Composition of P-Citations

P-citations							
Year	Total citations	Books	Journals	Conference proceedings	Reviews	Reports	Others *
2007	387	28(7.23)	293(75.71)	14(3.61)	05(1.29)	13(3.35)	34(8.78)
2008	568	34(5.98)	443(77.99)	20(3.52)	06(1.05)	06(1.05)	59(10.38)
2009	627	71(11.32)	463(73.84)	16(2.55)	09(1.43)	23(3.66)	45(7.17)
2010	980	89(9.08)	612(62.44)	70(7.14)	15(1.53)	92(9.38)	102(10.40)
Total	2562	222(8.66)	1811(70.68)	120(4.68)	35(1.36)	134(5.23)	240(9.36)

Numbers in parentheses indicate percentage.

Others include Magazines, Newspaper Articles, Thesis and Dissertations, and Reference sources.

Composition of Print-Citations or P-Citations

Table -12 indicates that the books are the preferred cited sources in each the year with the highest percentage (11.32) in 2010. While as journals are also cited most in the each year with highest percentage (77.99) consulted in 2008. Although journals over numbered the books and other sources in most of the years but aggregated figure shows the difference of books and journal citation is in decimal fraction. Largest numbers of conference proceedings are consulted in the year 2010 and least in the year 2009. Largest numbers of reviews and reports are consulted in the year 2010 and least in the year 2007.and 2009.

Table -13: Composition of Electronic-Citations or E-Citations

E-citations				
Year	Total citations	Journals	Books	Others *
2007	32	23(71.87)	0	09(28.12)
2008	97	78(80.41)	0	19(19.58)
2009	48	38(79.16)	0	10(20.83)
2010	155	135(87.09)	0	20(12.90)
Total	332	274(82.53)	0	58(17.46)

Numbers in parentheses indicate percentage.

*Others include General Web Sites, online Newspapers, Discussion Forum Postings and online Reference Sources

Composition of Electronic-Citations or E-Citations

Table -13 reveals the reliance of author on e-resources. There is 0% usage of e-books by the researchers. Huge number 82.53% of e-journals are cited against 17.46% of other resource types during 4 years. 87% e- journals are cited in 2010 and 80% usage in the next consecutive year 2008 while as least percentage (71.87) is used in 2007.

Table -14: Length of Articles

No. of pages	2007	2008	2009	2010	Total	% age
1-5	10	05	02	10	27	19.28
6-10	06	21	27	20	74	58.86
11-15	11	07	04	11	33	23.57
16-20	01	02	01	02	06	4.28
21-25	-	-	-	-	-	-
26-30	-	-	-	-	-	-
Total	28	35	34	43	140	100.00

Length of articles

Table 14 indicates the details about the page length of the contributions. Out of 140 contributions, 27 contributions (19.28%) have page length of 1-5 pages while 73 contributions (58.86%) have length of 6-10 pages. 33 contributions (23.57%) have length of 11-15 pages. There are only 6 contributions that have page length between 16-20 pages i.e., (4.28%).

Table 15: Ranked List of Cited Journals

S. No.	Name of the Journal	No. of Citations
1	Annals of Library & Information Studies	205
2	Scientometrics	125
3	Journal of the American Society for Information Science and Technology	103
4	Journal of Documentation	71
5	Indian Journal of Library, Information & Society	53
6	Malaysian Journal of Lib. & Info. Science	52
7	Journal of Information Science	47
8	ILA Bulletin	43
9	SRELS Journal of Information Management	40
10	IASLIC Bulletin	36
11	Information Processing and Management	33
12	Current Science	24
13	DESIDOC Bulletin of Information Technology	29
14	The International Journal of Scientometrics & Informetrics	27
15	College and Research Libraries	27
16	Herald of Library Science	18
17	Kelpro Bulletin	14
18	Library Herald	22
19	International Forum on Information and Documentation	12
20	Research Evaluation	10

Table-15 shows that Annals of LIS is leading journal next to this comes Scientometrics having (125) citations. Journal of the American Society for Information Science and Technology, Journal of Documentation and Indian Journal of Library, Information & Society comes on 3rd, 4th & 6th rank.

Table-16: Top 10 Indian Journals

S. No.	Name of the Journal	No. of Citations
1	Annals of Library & Information Studies	205
2	Indian Journal of Library, Information & Society	53
3	ILA Bulletin	43
4	SRELS Journal of Information Management	40
5	IASLIC Bulletin	36
6	DESIDOC Bulletin of Information Technology	29
7	Current Science	24
8	Library Herald	22
9	Herald of Library Science	18
10	Kelpro Bulletin	14

Top 10 Indian Journals

Table-16 shows that ‘Annals of Library and Information Studies’ is on top having 205 citations out of total 1811 citations received by the all journals. It is far ahead of its competitor journal Indian Journal of Library, Information & Society which has total 53 citations. While ILA Bulletin and SRELS Journal of Information Management on 3rd and 4th rank having 43 and 40 contributions respectively. IASLIC Bulletin and DESIDOC Bulletin of Information Technology are on 5th and 6th rank having 36 and 29 citations respectively.

Table -17: Top 10 Foreign Journals

S. No.	Name of the Journal	No. of Citations
1	Scientometrics	125
2	Journal of the American Society for Information Science and Technology	103
3	Journal of Documentation	71
4	Malaysian Journal of Lib. & Info. Science	52
5	Journal of Information Science	47
6	Information Processing and Management	33
7	The International Journal of Scientometrics & Informetrics	27
8	College and Research Libraries	27
9	International Forum on Information and Documentation	12
10	Research Evaluation	10

Top 10 Foreign Journals

Table-17 shows that *Scientometrics* is the highest cited foreign journal in the field of library and information science while Journal of the American Society for Information Science and Technology is on 2nd rank having 103 citations out of total 1811 citations. Journal of Documentation Malaysian Journal of Lib. & Info. Science and Journal of Information Science are on 3rd, 4th & 5th rank having 71, 52 & 47 citations respectively.

Conclusions

The analysis shows that majority of the articles in the journal are two-authored and majority of the contributions are from New Delhi. Study of citations showed that *Annals of Library and Information Studies* received the highest number of citations, next to this comes *Scientometrics* having (125) citations. Journal of the American Society for Information Science and Technology, Journal of Documentation and Indian Journal of Library, Information & Society comes on 3rd, 4th & 6th place. Earlier studies on *Annals of Library Science and Documentation*, *IASLIC Bulletin* and *ILA Bulletin* showed that the *Annals* topped the list of highly cited journal and a citation analysis study of *Library Herald* showed that *Annals* ranked second on the list of highly cited journal (15-19). The present study shows that *Annals of Library Science and Documentation* that has been rechristened *Annals of Library and Information Studies* continues to be a prominent Indian library and information science journal, 2562 sources are consulted with greater reliance and usability of print sources with less consultation of e-citations (332). An average of 15.92 p-citations and 2.37 e-citations are consulted for each article. Further it was observed that the usage of print sources varies when compared and analyzed under various resource categories. The authors have relied much on books and journals with a difference of decimal fraction in their usage which varies heavily when compared to other resource types. Coming to usage of e resources here the shocking statistics is that there is 0% usage of e-books in 4 years and 82.53 % usage of e-journals as compared to 17.46 % of other types of e-resources consulted. Study reveals that Females occupy a very less elevated position in terms of contribution.

References

1. Aksnes, D.W. (2006). Citation rates and perceptions of scientific contribution. *Journal of the American Society for Information Science and Technology*, 57(2), 169-185.
2. Bhat, S.V.R., & Sampath Kumar, B.T. (2008). Web citation behaviour in scholarly electronic journals in the field of library and information science. *Webology*, 5(2), Article 57. Retrieved October 28, 2008 from <http://www.webology.org/2008/v5n2/a57.html>
3. Das, A.K., & Sen, B.K. (2001). Journal of Biosciences: an analysis of citation pattern. *Annals of Library and Information Studies*, 48(2), 59-63. Retrieved October 25, 2008 from <http://eprints.rclis.org/5648/>

4. Garfield, E. (1983). *Citation Indexing - Its Theory and Application in Science, Technology and Humanities*. Philadelphia: ISI Press. Retrieved November 4, 2008 from <http://garfield.library.upenn.edu/ci/contents.pdf>
5. Gooden, A.M. (2001). *Citation analysis of chemistry doctoral dissertations: An Ohio State University case study*. Retrieved October 13, 2008 from <http://www.istl.org/01-fall/refereed.html>
6. Javed, M., & Shah, S.S. (2008). Rawal Medical Journal - An Analysis of Citation Pattern. *Rawal Medical Journal*, 33(2), 254-257.
7. Koley, S., & Sen, B.K. (2003). Indian Journal of Physiology and Allied Sciences: An analysis of citation pattern. *Annals of Library and Information Studies*, 50(1), 23-26.
8. Lal, A., & Panda, S (1996). Research in plant pathology: A bibliometric analysis. *Library Science with a Slant to Documentation and Information Studies*, 33(3), 135-147.
9. Megnigbeto, E. (2006). Internet-based resources citation by undergraduate students: A case study of Library and Information Science students in Benin. *International Information and Library Review*, 38 (2), 49-55.
10. Chaman Sab,PD Kumar and BS Biradar (2016), "Assessment of Chemical Engineering Research output using Scientometric Indicators: comparative study of India and South Korea during 2011-2015" *Journal of Advances in Library and Information Science*, Vol.5,No2.pp.179-186.
11. Okiy, Rose B. (2003). A citation analysis of education dissertations at the Delta State University, Abraka, Nigeria. *Collection Building*, 22(4), 158-161.
12. Ramesh, L.S.R.C.V., & Nagaraju, A.V.S.S. (2000). Citation analysis of the Indian journal of Information, Library and Society. *Indian Journal of Information, Library and Society*, 13(3-4): 171-179. Retrieved October 29, 2008 from <http://eprints.rclis.org/3140/>
13. Rethlefsen, Melissa L. (2007). Citation analysis of Minnesota Department of Health official publications and journal articles: a needs assessment for the RN Barr library. *Journal of the Medical Library Association*, 95(3), 260-266.
14. Slutz, M.J. (1997). *A citation analysis of master's level English theses submitted to the Department of English-Kent State University, 1985-1995*. Kent State University. Retrieved October 18, 2008 from http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/15/10/7b.pdf
15. van Raan, A.F.J. (2003). The use of bibliometric analysis in research performance assessment and monitoring of interdisciplinary scientific developments. *Technikfolgenabschätzung, Theorie und Praxis/ Technology Assessment-Theory and Practice*, 12(1), 20-29. Retrieved October 29, 2008 from <http://www.cwts.nl/TvR/documents/AvR-TFA2003.pdf>
16. Verma N, Analysis of contributions of ILA Bulletin, *ILA Bulletin*, 30 (3-4) (1994-95) 78-83.
17. Verma N, Analysis of contributions of library herald, *Library Herald*, 39 (1-2) (2001) 32-49.
18. Verma N, Analysis of contributions of IASLIC Bulletin, *IASLIC Bulletin*, 49 (2) (2004) 93-103.

19. Mete M V and Deshmukh P P, Citation analysis of annals of library science and documentation,
20. Neerja Verma', Rajnish Tamrakar"and Priyanka Sharmab, Analysis of contributions in 'Annals of Library and Information Studies' *Annals of Library Science and Documentation*, 43 (1) (1996) 11-25.

