

Publication Trends in Annals of Library and Information Studies: A Bibliometric Analysis

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Abstract - A bibliometric analysis of articles published in *Annals of Library and Information Studies* for the period from 2006 to 2015 have been undertaken. The data were downloaded from the Indian Citation Index database. This study aims at analyzing the research output performance of Library scientists on library & information science subjects. The analyses include year-wise publication of articles, authorship patterns, institutions-wise publication of contributions, state wise, city wise and country wise publication of articles. A total of 335 articles were published in the journal with an average of 33.5 articles per year. The journal had received articles from 19 countries. The result showed that out of 335 articles, majority of the articles were contributed by joint authors (218; 65.07%). Most of the articles were contributed from Delhi and USA also has contributed 4 articles for the period.

Keywords: ALIS, LISc, Citation Analysis, Publication Trends, Bibliometric, Authorship pattern, Geographical distribution.

I. INTRODUCTION

Bibliometric studies have been applied mainly to scientific fields and are based principally on various metadata elements like author, title, subject, citations, etc. related to scholarly publication within a discipline. This type of analysis provides useful indicators of scientific productivity, trends, the emphasis of research in various facets and researchers' preferences for publication [1]. The bibliometric tools are widely used to identify trends in scholarly communication in the journals such as *Journal of the Indian Society for cotton improvement* [2], *Annals of Library and Information Studies*[3], *Applied Engineering in Agriculture*[4], *Indian journal of physiology and allied sciences*[5], *Indian Journal of Pharmaceutical Education and research*[6], *Journal of the oilseed research*[7], *Library Philosophy and Practice*[8], *Journal of Food Science and technology*[9], *International Journal of Pest Management*[10], *Indian Journal of Pharmaceutical Education Research*[11], *Indian Journal of Fibre and Textile Research*[12].

In this context, the bibliometric analysis of articles published in “*Annals of Library and Information Studies (2006-2015)*” would be useful to reveal the latest publication trend, citation details, major contributing organizations, countries contribution and most contributing institutions. Further, the analysis would provide useful guidelines for journal editors, librarians, researchers,

information scientists and others involved in economic, social and research policy formulation.

II. REVIEW OF LITERATURE

Parameshwar [21] conducted The paper covers the bibliometric analyses of year-wise, issue wise, authorship patterns, institutions-wise publication of contributions, country wise, state wise publication of Articles of IASLIC BULLETIN. Patra and Chand [13] analyzed the LIS research in the country based on Library and Information Science Abstracts database and among others identified top 10 Indian journals in which Indian LIS researchers publish their findings. Jena, Swain and Sahoo [3] studied *Annals of Library and Information Studies* journal and found that, journal citations are leading with 57% of the total citations. Examples can be drawn from the work of Kulkarni, Pushett and Norwade[11] they studied citations to articles published in *Indian Journal of Pharmaceutical Education and Research*, and conclude that, journals were cited more than books and other information resources.

Koley and Sen[5] conducted similar study on the Indian journal of physiology and allied sciences, and found that 76.81% were dedicated to journal articles. Das and Sen[14] analysed citations that appeared in the *Journal of Biosciences* for the year 2000 and found that, journal articles ranked higher than the rest of the information resources with 85.89%. Mete and Deshmukh[15] analyzed 1824 citations from 202 articles published in *Annals of Library Science and Documentation* during 1984-1993 and found that journals are most cited form of communication among the LIS researchers and that the source journal is the most cited publication.

The present study is different from earlier studies and intended to examine the scholarly communication in the *Annals of Library and Information Science* from 2006 to 2015, which is unexplored yet.

III. OBJECTIVES OF THE STUDY

The main objectives of the study are:

1. To examine the year-wise distribution of papers;
2. To examine the authorship pattern of the contributions;
3. To examine the most prolific authors;

4. To examine the volume-wise distribution of contributions and to find the average number of citations per volumes;
5. To examine the average length of articles and average number of citations per contribution in the journal;
6. To examine the types and number of publications cited in the contributions of the journal and
7. To know the institutions wise distribution of the contributions and geographical distribution of the publications.

IV.METHODOLOGY

The methodology applicable in the current study is bibliometric scrutiny, which is used to analyses in detail the bibliographic attributes of the articles published in the *Annals of Library and Information Studies* journal from 2006-2015. Ten volumes (Vol. 53 to 62) containing forty issues and three hundred and thirty five articles were considered for the analysis. The information like authors, citations, length of the paper, states, institutions etc. are extracted from Indian Citation Index in MS Excel spreadsheet and further, manual coding was done.

V.ANALYSIS AND DISCUSSION

The year wise distribution of articles in a journal is analyzed to give the insight into the publication trend [10]. Many studies were reported about the publication trend in the

particular journal [2-12]. There were five type of documents were published in the *Annals of Library and Information Studies* in 2006-2015 such as research articles with 320 articles being highest among all followed by case study (09;2.69%), short communication(4;1.19%), editorial material (1;0.30% and review article (1;0.30%). It's clear from the result that journal editor prefer research articles than any other types of documents. So the libraries professionals who wish to publish their contribution to the journal need to keep this in mind while submission of manuscript for publication. The table 1 presents the year wise distribution of articles with citations. A total of 335 documents were produced by the journal from 2006-2015 with highest publication in the year 2010 (43 articles) and lowest in the year 2010 (26 articles). An average of 33.5 articles was published per year. The trends in publication show some fluctuation from 2006-2015 (Fig. 1). This may be due to the journal might have adopted strict and rigorous policy of review process. Citations are considered as indicators of quality of articles [17]. A total of 575 citations were recorded including 133 self-citations to the articles published in the period of 2006-2015. Average citations rate per article was 1.72 and h index of 10. The articles published in 2007 enjoy highest rate of citation per document with 3.96 per article and lowest (0.3) was observed to the articles published in 2015. This finding is consistent in other study as the articles need sufficient time to accumulate citations [17].

TABLE I YEAR WISE DISTRIBUTION OF ARTICLES

Year	Vol. No.	Issues	No. of Contribution	% of 335	No. of Citation	Average citations per article	H Index
2006	53	04	26	7.76	92	3.54	Results found : 335 Total times cited : 575 Average citation/item : 1.722 h-index: 10
2007	54	04	27	8.08	107	3.96	
2008	55	04	35	10.45	75	2.14	
2009	56	04	34	10.15	109	3.21	
2010	57	04	43	12.84	81	1.88	
2011	58	04	36	10.75	55	1.53	
2012	59	04	27	8.06	26	0.96	
2013	60	04	37	11.04	20	0.54	
2014	61	04	34	10.15	9	0.26	
2015	62	04	36	10.75	1	0.03	
Total	10	40	335	100%	575	1.72	

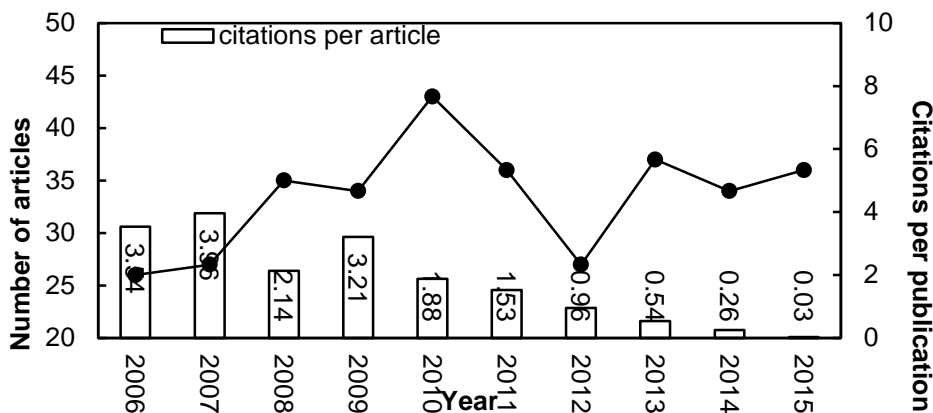


Fig.1 Publications and citations over years

The table II reveals distribution of articles (Issue-wise). The highest no. of articles was published in the September and December issues, which accounts for the 37.61 % and 25.97% of total articles, respectively. The lowest articles were published in the March and June issues with 22.69% and 24.48% of the total articles, respectively. The reason

for this may be that journal might receive more submission in the month of September and December. The many researchers usually might not get sufficient time during January to March, as this is financial year ending time and one needs to settle the all the research project accounts. An average of 8.37 articles was published in each issue in *ALIS*.

TABLE II ISSUE WISE DISTRIBUTION OF ARTICLES

Issue	Volume										Total	% of 335
	53	54	55	56	57	58	59	60	61	62		
March	06	06	09	07	08	10	06	09	09	06	076	22.69
June	06	09	10	08	09	10	06	09	08	07	082	24.48
September	07	05	09	09	15	09	08	09	10	09	090	26.87
December	07	07	07	10	11	07	07	10	07	14	087	25.97
Total	26	27	35	34	43	36	27	37	34	36	335	100

Table III provides details about authorship pattern in articles published in the *Annals of Library and Information Studies* during 2006-2015. A total 335 articles were contributed by 645 authors to the journal with average of 1.92 authors per article. Collaborative research is very much a feature of the library and information Science especially during the 21st century. It is a natural reflection of complexity, scale and costs of modern investigations in Library and Information Science. Multi authorship provides different measures of collaboration in the subject [20]. The majority of the articles were contributed by joint authors (147; 43.88%) followed

by single author (117; 34.93%) and remaining 21.19% of the articles were written by more than three authors. Figure 2 shows the average authors per article over years from 2006-2015. The average authors ranged between 2.21 to 2.69 per article. The articles published in 2011 recorded highest rate of average authors (2.69) and lowest were observed in 2014 (2.21). The similar result was found in the case of bibliometric analysis of *Journal of Food Science and technology*, where 33.88% of the articles were contributed by the joint authors [9].

TABLE III AUTHORSHIP PATTERN

Authorship	Year										Total	%335	Total Authors
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015			
One author	06	11	12	06	17	15	11	12	12	15	117	34.93	117
Joint authors	14	10	15	19	18	12	10	17	17	15	147	43.88	294
Three authors	05	06	07	09	06	07	06	06	03	04	059	17.61	179
Four authors	--	--	01	--	02	--	--	--	02	01	006	01.79	24
Five authors	01	--	--	--	--	02	--	01	--	01	005	01.49	25
Six authors	--	--	--	--	--	--	--	01	--	--	001	00.30	06
Total	26	27	35	34	43	36	27	37	34	36	335	100	645

Degree of collaboration in the *ALIS*

To determine degree of collaboration in quantitative terms, the formula given by K.Subramanyam²¹ was used. The formula is

Where $C = \frac{NM}{NM+NS}$ = Degree of collaboration

NM = Number of multi authored papers
 NS = Number of single authored papers
 $= \frac{218}{218+117} = 0.65$

In the present study the value of C is C=0.65

Thus the degree of collaboration in *ALIS* is 0.65 which clearly indicates its dominance upon multiple authors. 65 percent of the articles were contributed by more than two authors.

Cited References

According to Garfield [18] the cited reference search was designed to “eliminate the uncritical citation of fraudulent,

incomplete, or obsolete data by making it possible for the conscientious scholar to be aware of criticisms of earlier papers”. Cheek, Garnham and Quan [2] add that the cited reference search “enable researchers to be aware of other researchers using their work and researchers working in similar areas to themselves. However, a more recent development has been the use of the Cited Reference Search to demonstrate the impact of a publication, based on the assumption that the number of times an article is cited is indicative of the degree of impact that that article has had on the academic community”.

Table V gives details of the number of references cited by the authors in their papers. For the 335 articles, a total of 126 articles (37.61%) have 11-20 references followed by 99 articles (29.55) with 1-10 references, 59 articles (17.61%) with 21-30 references, 33 articles (9.85%) with 31-40 references and 18 articles (5.37%) with more than 41 references (vol. 56 issue no 4 one article having 125 references and vol. 61 issue no 2 one article having 92

references). Majority of the articles were prepared by referring or consulting 1-20 references. The average references were also kept increasing, in 2006, 14.50 and in

2015, 17.64. The highest average references were found in the articles published in 2010 (Table VI).

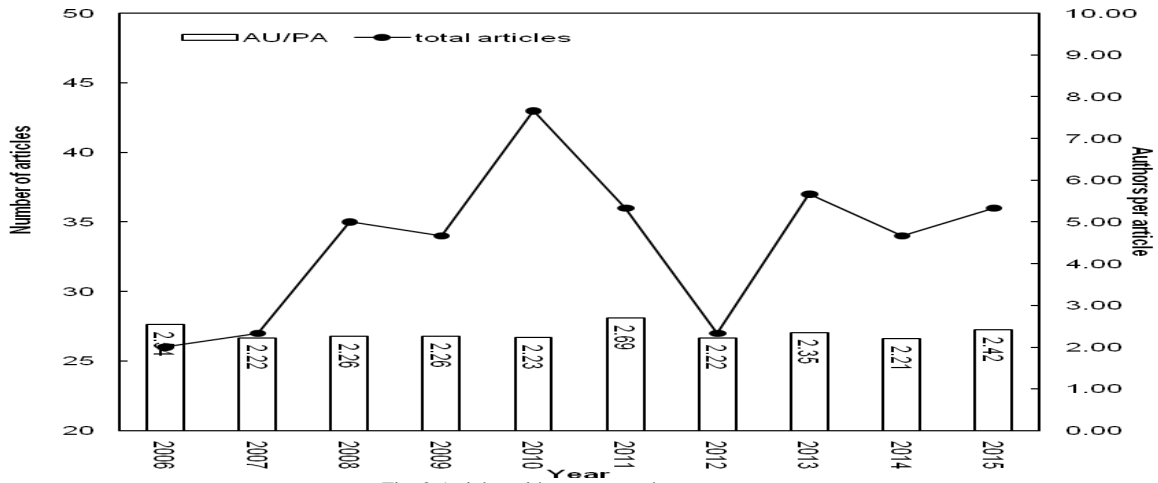


Fig. 2 Articles with average authors over years

TABLE IV YEAR WISE AUTHORSHIP PATTERN

Authorship	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	%335
Single	06	11	12	06	17	15	11	12	12	15	117	34.93
Multiple	20	16	23	28	26	21	16	25	22	21	218	65.07
Total	26	27	35	34	43	36	27	37	34	36	335	100

TABLE V YEAR WISE REFERENCES CITATIONS

Year wise cited references	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 335
1-10	14	14	14	16	11	05	07	05	07	06	99	29.55
11-20	06	07	12	10	14	22	12	13	12	18	126	37.61
21-30	04	05	04	04	09	04	05	07	07	10	59	17.61
31-40	--	--	05	0	03	04	03	12	05	01	33	9.85
>41	02	01	--	04 [#]	06	01	--	--	03 [*]	01	18	5.37
Total	26	27	35	34	43	36	27	37	34	36	335	100

[#]this paper with 125 references, ^{*}this paper with 92 references

TABLE VI CITED REFERENCE DISTRIBUTION PATTERN

Year	Volume	No. of Articles	Total references (%)	Avg. references per article
2006	53	26	377 (06.03%)	14.50
2007	54	27	360 (05.75%)	13.33
2008	55	35	542 (08.66%)	15.48
2009	56	34	636 (10.17%)	18.70
2010	57	43	997 (15.94%)	23.18
2011	58	36	664 (10.61%)	18.44
2012	59	27	464 (07.42%)	17.18
2013	60	37	818 (13.08%)	22.11
2014	61	34	763 (12.20%)	22.44
2015	62	36	635 (10.15%)	17.64
Total	10	335	6256 (100 %)	18.30

Page length

An analysis of pagination pattern of papers is addressed in Table VII. The majority of articles 218 (65.07%) have page length between six to ten pages followed by 56 (16.76%)

articles with page length of 11-15 pages, 54 (16.12%) articles with 1-5 pages and remaining 5 (1.49%) with sixteen to twenty and 2 (0.60) articles have the length of above 26 pages.

TABLE VII LENGTH OF ARTICLES

Pages	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 335
1-5	08	09	04	01	08	--	03	05	05	11	54	16.12
6-10	12	15	24	28	23	27	16	28	25	20	218	65.07
11-15	06	02	06	05	09	09	06	04	04	05	56	16.72
16-20	--	01	01	--	02	--	01	--	--	--	5	1.49
21-25	--	--	--	--	--	--	--	--	--	--	--	--
26&above	--	--	--	--	01	--	01	--	--	--	2	0.60
Total	26	27	35	34	43	36	27	37	34	36	335	100

Table VIII reveals that among the 643 authors 'Sen B K' published 23 articles which accounts for 6.57% of the total article and placed 1st rank among the all authors who contributed their research findings to *ALIS* followed by 'Garg K' published 13 articles (3.88%) and takes 2nd rank, 'Gupta B' placed in 3rd rank with 09 articles, and 'Dutta,

Bidyarthi had published 8 articles (2.39%) and he secure 4th rank. Kumar, S; Mukherjee, Bhaskar and Ray Parth contributed 6 articles and they secured 5th rank in order, followed by Pujar Shamprasad, Ram Shri and Satija M contributed 5 articles and placed in 6th rank respectively.

TABLE VIII PROLIFIC AUTHORS

Author name	contributions & author	Single author	Two authors	Three authors	More than three authors	Total contribution (335)	(% of Ranking)
Sen B K		08	11	04	--	23 (6.87%)	1
Garg K		--	04	07	02	13 (3.88%)	2
Gupta B		04	03	02	--	09 (2.69%)	3
Dutta Bidyarthi		01	04	03	--	08 (2.39%)	4
Kumar Suresh		01	01	04	--	06 (1.79%)	5
Mukherjee Bhaskar		04	02	--	--	06 (1.79%)	5
Ray Partha		03	03	01	--	06 (1.79%)	5
Pujar Shamprasad		01	04	--	--	05 (1.49%)	6
Ram Shri		04	01	--	--	05 (1.49%)	6
Satija M		03	02	--	--	05 (1.49%)	6

Table IX depicts the institution wise distribution of articles. Out of 335 contributions overwhelming majority with the highest numbers, i.e. 26 (7.76%) articles have been contributed by National Institute of Sciences, Technology and Development Studies, followed by Banaras Hindu

University (12;3.58%), National Institute of Science Communication and Information Resources(12;3.58%), and University of Mysore 12 (3.58%), Indira Gandhi National Open University (3.28%) and Jadhavpur University7 (2.09%).

TABLE IX INSTITUTION WISE DISTRIBUTION OF CONTRIBUTIONS (TOP 10)

No	Institution	No of Record	Top ten ranked institution	% of 335
1	National Institute of Science, Technology and Development Studies (NISTDS)	26	23.01	7.76
2	Banaras Hindu University (BHU)	12	10.62	3.58
3	National Institute of Science communication and Information Resources (NISCAIR)	12	10.62	3.58
4	University of Mysore (UM)	12	10.62	3.58
5	Indira Gandhi National Open University (IGNOU)	11	9.73	3.28
6	Mangalore University (MU)	09	7.96	2.69
7	University of Kerala (UK)	09	7.96	2.69
8	Kuvempu University (KU)	08	7.08	2.39
9	Jadavpur University (JU)	07	6.19	2.09
10	Jawaharlal Nehru University (JNU)	07	6.19	2.09
Total		113	100	33.73

City wise analysis of contributions to *ALIS* is presented in the table 10. New Delhi is major contributor to the journal with 87 articles, which accounts for 43.07% of the articles, followed by Varanasi (19; 9.41%), Kolkata (21; 10.40%), Mumbai (13; 6.44%), Mysore (12; 5.94%), Thiruvananthapuram (12; 5.94%), Bangaluru (10; 4.95%),

Chennai (10; 4.95%), Colombo(9; 4.46%) and Dhaka (9; 4.46%) respectively. Out of ten cities, eight are from India and two are from other than India. These ten cities have contributed 60.30% of the total articles published in *ALIS* in 2006-2015.

TABLE X CITY WISE DISTRIBUTION OF CONTRIBUTIONS (TOP 10)

No	City	Record count	% of 202	% of 335
1	New Delhi	87	43.07	25.97
2	Kolkata	21	10.40	6.27
3	Varanasi	19	9.41	5.67
4	Mumbai	13	6.44	3.88
5	Mysore	12	5.94	3.58
6	Thiruvananthaouram	12	5.94	3.58
7	Bangaluru	10	4.95	2.99
8	Chennai	10	4.95	2.99
9	Colombo	9	4.46	2.69
10	Dhaka	9	4.46	2.69
Total		202	100.00	60.30

Analysis of articles by state wise is applied by the many authors [9],[11]. The top ten states that had maximum contributions to the *ALIS* are presented in the table 11. The Delhi is the most contributed state with 88 articles (32.23%), followed by Karnataka with 44 (16.22%) articles found second place, West Bengal with 37 (13.55%) articles, Kerala and Maharashtra had contributed 22 and 21 articles respectively. Uttar Pradesh, Tamil Nadu, Madhya Pradesh, Orissa and Rajasthan contributed 19,16,10,8,8, articles respectively. Similar result was found in the study of Indian

Journal of Fibre and Textile Research, where 342 articles were contributed by Delhi. In case of analysis of state wise distribution of articles in *Journal of Food Science and Technology and Indian Journal of Pharmaceutical Education and Research*, Karnataka State has emerged as leading state [9]. These ten states had contributed 273 articles, which accounts for 81.49% of the articles. This can be noted from the findings that these 10 states are highly involved in library and information sciences research and prefer to get published their research findings in the *ALIS*.

TABLE XI STATE WISE DISTRIBUTION OF CONTRIBUTIONS (TOP 10)

No	State	Record count	Top ten ranked state	% of 335
1	Delhi	88	32.23	26.27
2	Karnataka	44	16.12	13.13
3	West Bengal	37	13.55	11.04
4	Kerala	22	8.06	6.57
5	Maharashtra	21	7.69	6.27
6	Uttar Pradesh	19	6.96	5.67
7	Tamil Nadu	16	5.86	4.78
8	Madhya Pradesh	10	3.66	2.99
9	Orissa	8	2.93	2.39
10	Rajasthan	8	2.93	2.39
Total		273	100	81.49

Country wise distribution of articles is also reported in the many bibliometric research work on particular journal. The country wise contributions are provided in the table 11. Of 335 articles were contributed by 19 countries, 271 (80.90%) articles were contributed by the India alone. This result is similar to the studies such as *Journal of Food Science and Technology* [9] and *Indian Journal of Pharmaceutical*

Education and Research [6] and *Indian Journal of Fibre and Textile Research* [19].

The second major contributing country to *ALIS* is Nigeria with 19 articles and Sri Lanka with 10 articles placed in 3rd place. Bangladesh and Belgium had contributed 9 and 4 articles respectively. The USA has 4 articles to the journal during the period.

TABLE XII COUNTRY WISE DISTRIBUTION OF CONTRIBUTIONS

No	Country	Records	% of 335	No	Country	Records	% of 335
1	India	271	80.90	11	Uganda	1	0.30
2	Nigeria	19	5.67	12	Thailand	1	0.30
3	Sri Lanka	10	2.99	13	Tanzania	1	0.30
4	Bangladesh	9	2.69	14	Russia	1	0.30
5	Belgium	4	1.19	15	Hungary	1	0.30
6	USA	4	1.19	16	Fiji	1	0.30
7	Botswana	3	0.90	17	China	1	0.30
8	Netherlands	2	0.60	18	Canada	1	0.30
9	Malaysia	2	0.60	19	Brazil	1	0.30
10	Iran	2	0.60	Total		335	100.00

TABLE XIII HIGHLY CITED TOP TEN PAPERS

Rank No	Title of the paper	Authors	Year	Citations	References
1	Research publication trend among scientists of Central Potato Research Institute: A bibliometric study	Sharma Rakesh Mani	2009	16	47
2	Scientometric profile of Indian science as seen through Science Citation Index	Garg K C; Dutt B; Kumar Suresh	2006	14	13
3	Growth and impact of research output of University of Mysore; 1996-2006: A case study	Kumbar Mallinath; Gupta B M; Dhawan S K	2008	13	3
4	Library and information science research in India: A bibliometric study	Patra Swapan Kumar; Chand Prakash	2006	13	12
5	Analysis of contributions in 'Annals of Library and Information Studies'	Verma Neerja; Tamrakar Rajnish ; Sharma Priyanka	2007	12	14
6	A bibliometric analysis of the journal 'Indian Journal of Fibre and Textile Research; 1996 - 2004'	Jena Kamal Lochan	2006	12	4
7	Use of e-journals and databases by the academic community of University of Mysore : A survey	Nikama Khaiser; Pramodini B	2007	11	2
8	Literature on hepatitis (1984-2003): A bibliometric analysis	Ramakrishnan J; Babu B Ramesh	2007	11	30
9	Journal of Food Science and Technology: A bibliometric study	Vijay K R; Raghavan I	2007	10	8
10	Use and user perception of electronic resources in Annamalai University: A case study	Natarajan K; Suresh B; Sivaraman P; Sevukan R	2010	9	10

The top ten most cited articles with their details are presented in the table 13. Out of ten articles, four articles published in 2007, three in 2006, one 2008, one in 2009 and remaining one in 2010 respectively. The articles citations ranged between 16 to 9 citation counts. Five articles were contributed by three or more authors, three articles by two authors and remaining two by single author. Eight articles were based on bibliometric analysis and two were concerned with use of e-resources in University system. The article contributed by Sharma has received maximum citations and has 47 references.

VI.CONCLUSION

In this paper, we analysed bibliometrics characteristics of 335 articles published in the *ALIS* in 2006-2015. Trend shows the some fluctuation from 2006-2015 and 575 citations were recorded for the articles with an average of 1.72 per article. The articles published in 2007 enjoy highest rate of citation per document with 3.96 per article and lowest (0.3) was observed to the articles published in 2015. The some slight more number of articles being published in September and December issues. A total of 635 authors were contributed with an average of 1.92 authors per article. Majority of the articles were contributed by the joint authors and multiple author's research is prevalent. Most of the articles prepared by consulting 10-20 references and majority of the articles page length are between 6-10 pages. 'Sen B K' has emerged as most prolific author with 23 articles which accounts for 6.57% of the total article and placed 1st rank among the all authors. National Institute of Science, Technology and Development Studies (NISTDS) is the most contributing organization and Delhi is the most

contributing State of India with 88 contributions. Nigeria, USA, Canada, Netherlands, Brezil and China also contributed to the journal during the period. Top ten highly cited articles analysis indicates most of the articles were concerned with bibliometrics/scientometrics field of study in library and information science.

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