

SCIENTOMETRIC ANALYSIS: ANNALS OF LIBRARY AND INFORMATION STUDIES PUBLICATIONS OUTPUT DURING 2007- 2012

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ABSTRACT

The study aims to explore the publication of papers in Annals of Library and Information Studies. The Scientometric analysis has been conducted with 203 contributions published in the journal for a period of selected six years i.e. 2007 – 2012. It was observed from the study that the highest number of contributions i.e., 43 (21.19%) were published in the year 2010. Most of the contributions are found by double authored i.e., 88 (43.35 %). The degree of collaboration (i.e.131out of 203) was high in terms of authorship pattern was 0.64.

Keywords: Scientometrics, Bibliometrics; Authorship Pattern; Degree of Collaboration; Annals of Library and Information Studies; Indian Journal; Publication Analysis; NISCAIR.

INTRODUCTION

Scientometric analyses¹ can reveal a lot about research trends. Ideally, such analyses should be performed on all journals covering a well-defined scientific field. In Geography however, the literature is rather poor in such estimations, with the exception of some studies which have attempted to make scientometric assessments at the national level. Scientometrics is referred to as a science about science; it is a distinct, recognized and well-established scholarly field with its own identity, history, theories, and methodologies. There are several prominent academics – for example, Robert King Merton, Derek J. de Solla Price and Eugene Garfield – who formed the foundation of scientometrics (Price, 1963; Garfield, 1972, 1979; Merton, 1973, 1976). Scientometric projects often present meta-analyses of topics and methodologies identify the most productive individuals, institutions and countries, describe collaboration processes, report on citation and co-citation analyses, discover research anomalies, and conduct opinion surveys. The value of scientometrics has received recognition in most areas (Straub, 2006).²

NEED FOR THE STUDY

Journals play an important role in scholarly communication. Periodicals appear as the focal point for transmitting knowledge. They are the pointers of literature growth and progress in any field of knowledge. Owing to the accelerating cost of the periodicals and inadequate financial position of library, the selection of any particular journal for a library should be done carefully. Library authorities are forced to reduce the number of journal subscriptions. Scientometric / Bibliometric

analysis has many applications in the field of library and information science in finding research trends, core journals, etc., and thereby framing subscription policies for future. These research studies will be supportive for library professionals in collection development.

SOURCE JOURNAL

Annals of Library and Information Studies, in short, (ALIS) is one of the peer – reviewed journal, earlier published as Annals of Library Science and Documentation is a well-known leading journal in the field of library and information science published from India. It is a leading quarterly journal, published by the National Institute of Science Communication and Information Resources (NISCAIR), New Delhi. NISCAIR is publishing original papers, survey reports, reviews, short communications, and letters pertaining to library science, information science and computer applications in these fields. This study aims to find out the Scientometric analysis of annals of library and information studies from 2007 to 2012. The journal publishes articles in the following broad subject headings.

- Information technology
- Computer applications
- User studies
- Bibliometric studies
- Scientometric analysis
- Digital library
- Management

REVIEW OF LITERATURE

The review of literature have been studied by several authors analysed the contributions of different journals of various fields. Thanuskodi, S.³ (2011), analysed the research output of the journal of Library Herald for period from 2006 to 2010. The analysis covered mainly the number of articles, authorship pattern, subject wise distribution of articles, average number of references per articles, forms of documents cited, year wise distribution of cited journals etc. The result showed that out of 138 articles single author contributed 72 (52.17%) articles while the rest 66 (47.83%) articles were contributed by joint authors. The study revealed that most of the contributions are from India with 89.85 % and the rest 10.15 % only from foreign sources.

Perianes-Rodriguez, Omelda-Gomez and Moya-Anegon (2010)⁴ opined that,” Detection and identification of communities with factor analysis is a useful tool for experts in bibliometric and scientometric studies. Hazarika , Goswami , and Das (2003)¹² opined that, “ It is used to identify the pattern of publication , authorship citation and coverage of journal papers in terms of geographic, subject, organization and other related parameters.

Thanuskodi (2010)⁵ discussed the research output performance of social scientists on social science subjects. The analysis cover mainly the number of articles, authorship pattern, subject wise distribution of articles, average number of references per articles, forms of documents cited, year wise distribution of cited journals etc.

Yeoh and Kaur (2008)⁶ analysed the publication output of Research in Higher Education for subject support in collection development in the light of interest in diversified domains of

research in higher education. Consequently, analysis of 40 issues of publications revealed a diversified usage pattern of bibliographic reference sources by contributing researchers, with a cumulative total of citations being 8,374.

Aoki M (2002)⁷ retrieved 4,487 articles and analysed with the publication type “Practice Guideline” from MEDLINE. The results found that 108 articles were published in 1991 and 436 in 1992 for a 4-fold increase. 55.8% of articles were from the United States and 82% were in English. The most common topics included HIV infection, breast neoplasms, mass screening, asthma, and hypertension.

In another bibliometric study, (Barriocanal. C e.t.al, 2007)⁸ covering 39 selected journals of Geography with articles for the period 1997 to 2005, it was found that subjects of interest for researchers in geography had a remarkable variability – not a single journal had been the most important one for a period longer two years therefore indicating that key priorities in geographical research change very rapidly.

Ginn⁹ (2003), conducted citation analysis of authored articles in library and information science research, 2001–2002, and found that citations of articles published in scholarly journals would be greater in number than citations of any sources. From 2001 to 2003, journal article citations increased both in quantity and percent. Journals were cited most, followed by books, chapters in books, annuals, and web sites. More than 50 percent of the cited works would be ten years old or less.

Davarpanah M.R. and Aslekia S¹⁰ (2008), applied a quantitative study of productivity, characteristics and various aspects of global publication in the field of library and information science (LIS). A total of 894 contributions published in 56 LIS journals indexed in SSCI during the years of 2000–2004 were analyzed. A total of 1361 authors had contributed publications during the five years. The overwhelming majority (89.93%) of them wrote one paper. The average number of authors per paper is 1.52. All the studied papers were published in English. The sum of research output of the authors from USA and UK reaches 70% of the total productivity. It is found that most papers received few citations. Each article received on an average 1.6 citations and the LIS researchers cite mostly latest articles. About 48% of citing authors had tendency of self-citation.

Serenko Alexander, Nick Bontis and Joshua Grant¹¹ (2009), applied qualitative and quantitative data analysis techniques to determine author distribution, country, individual and institutional-level productivity rankings, and employed methodologies. It was found that an average manuscript was written by 1.73 authors. The USA, Canada and the UK were the three most productive countries, which is consistent with prior KM/IC productivity research. Most productive institutions were the University of Calgary (Canada), Polytechnic University of Catalonia (Spain) and Universidad de Oviedo (Spain). The most productive individuals were James Falconer, Jose Maria Viedma Marti and Scott Erickson. Lotka’s a, which represents the degree of conference delegate retention rate, was established as 2.7.

In this paper, an attempt has been made to analyze the contributions to Annals of Library and Information Studies published during the year 2007 – 2012, in order to explore the author pattern, collaborative research, subject coverage of articles among the contributions. This study covers the 203 articles of 24 issues published.

OBJECTIVES OF THE STUDY

The present study has been framed with the objective of analyzing the following aspects.

- To determine the year-wise distribution of articles.
- To examine the authorship pattern of the contribution.
- To study the subject coverage of articles.
- To examine the single and multi-authored papers of the journal and
- To find out the Degree of collaboration

METHODOLOGY

The data was collected from Annals of Library and Information Studies journal website <http://www.niscair.res.in/> pertaining to period from 2002-2012. Forty four issues of eleven volumes from 2002 to 2012 have been selected for the study. These data were organized, calculated, tabulated, analyzed and presented by using simple arithmetic and statistical methods in order to arrive for its results.

RESULTS AND DISCUSSION

Table 1. Distribution of contributions (year / volume / issue- wise)

Year	Vol. No	No. of Articles issue- wise				Total No. of Articles	%age
		1	2	3	4		
2007	54	6	9	6	7	28	13.79
2008	55	9	10	9	7	35	17.24
2009	56	7	8	9	10	34	16.74
2010	57	9	9	15	10	43	21.19
2011	58	10	10	9	7	36	17.73
2012	59	6	6	8	7	27	13.31
Tota		47	52	56	48	203	100

The table shows the maximum number of articles i.e. 43 (21.19%) were published in the year 2010 and minimum i.e. 27 (13.31%) in the year 2012. The journal publishes on an average of 33 articles per year.

Table 2. Authorship Pattern

S. No	No. of Authors	No. of Contributions	Total no. of Contributions	% of Records
1	Single Author	72	72	35.46
2	Double Authors	88	176	43.35
3	Three Authors	39	117	19.22
4	Multiple Authors	4	16	1.97
Total		203	381	100.00

The table.2 shows the details about the authorship pattern of articles published during the period of study. Out of total of 203 articles, the maximum number of contributions i.e. 88 (43.35%) have been contributed by single author and followed by 72 contributions (35.46%) and 39

contributions (19.22%) and the minimum number of contributions i.e. 4 (1.97%) by four authors.

Table 3. Period / Volume wise Authorship Pattern

S. No	Year	Volume	Single Author	Two Authors	Three Authors	More than Three Authors	Total	% of Records
1	2007	54	12	10	6	0	28	13.79
2	2008	55	12	16	6	1	35	17.24
3	2009	56	6	19	9	0	34	16.74
4	2010	57	17	18	6	2	43	21.19
5	2011	58	14	15	6	1	36	17.73
6	2012	59	11	10	6	0	27	13.31
Total			72	88	39	4	203	100.00
Percentage %			35.46	43.35	19.22	1.97	100.00	

The table shows volume wise authorship pattern of contributions. It indicates that out of the 72 contributions of single author, volume 57 has the highest number i.e., 17 (23.61 %) whereas the volume 56 has the lowest number i.e. 6 (8.33 %) contributions. Out of the 88 contributions by two authors, vol. 56 has the highest i.e. 19 (21.59 %) and vol. 54 and 59 have the lowest number i.e., 10 (11.36 %) contributions. Out of 39 contributions by three authors, vol. 56 has the highest i.e. 9 (23.07 %) and vol. 54, 55, 57, 58 and 59 have the lowest number i.e., 6 (15.38 %) contributions. Out of 4 contributions done by more than three authors' volumes 57 has the highest i.e. 2 (50.00%) and vol.55 and 59 has each 1 (25.00%) of lowest authors.

Table 4. Authorship pattern of single and joint contributions

Years	2007	2008	2009	2010	2011	2012	No of Articles	% of Records
Single	12	12	6	17	14	11	72	35.46
Joint	16	23	28	26	22	16	131	64.54
Total	28	35	34	43	36	27	203	100.00

The above table - 4 showed that out of 203 articles single author contributed only 72 (35.46 %) articles while the rest 131(64.54 %) articles were contributed by joint authors.

Table 5. Institutions – wise Distribution of Contributions

Institutions	No of Articles	% age
Academic Institution	167	82.26
Research Institution	24	11.82
Special Institution	12	5.92
Total	203	100.00

Table 4 shows the type of institutions with which the authors of the articles were affiliated. Out of 203 contributions, the highest number of i.e. 167 articles (82.26 %) were from authors affiliated with Academic Institutes whereas the lowest number i.e. 12 (5.92%) has been contributed by Special Institution.

Table 6. Subject – wise Distributions

Subjects	Year						Total	%age
	2007	2008	2009	2010	2011	2012		
User studies	4	7	7	4	6	11	39	22.94
Computer science / Information technology	3	5	3	5	4	0	20	11.77
Bibliometrics / Scientometrics	7	6	5	6	5	5	34	20.00
Digital library	2	2	3	4	3	2	16	9.42
Academic and public, special library	1	1	3	-	2	0	7	4.12
Classification / Cataloguing	3	3	-	-	1	0	7	4.12
Automation	1	2	1	4	-	5	13	7.64
Library Profession / Library Education	1	-	-	3	2	1	7	4.12
Webometrics	-	-	1	-	1	1	3	1.76
Others	3	4	5	6	4	2	24	14.11
Total	25	30	28	32	28	27	170	100.0

The above table shows that the majority of 39 (22.94 %) the contributions appeared under the subject of user studies, the next place is taken by Bibliometrics and Scientometrics i.e. 34 (20.0 %) and followed by the other subjects i.e. 24 (14.11 %) and further followed by Computer science and Information technology i.e. 20 (11.77 %) and also followed by Digital library i.e. 16 (9.42%). The study also reveals the small number of contributions in the following fields such as Automation 13 (7.64 %) and 7 (4.12 %) in the fields of Academic and public, special library, Classification / Cataloguing, Library Profession / Library Education and it is noted that only 3 (1.76 %) in the subject of Webometrics.

Table 7. Degree of Collaboration

Year	Volume	No of Authors		Total	Degree of Collaboration
		Single	Multiple		
2007	54	12	16	28	0.57
2008	55	12	23	35	0.65
2009	56	6	28	34	0.82
2010	57	17	26	43	0.60
2011	58	14	22	36	0.61
2012	59	11	16	27	0.59
	Total	72	131	203	0.64
	Percentage %	35.46	64.54	100.00	

The table shows the details about the degree of collaboration which indicate tend in single and joint authorship during 2007 to 2012, as shown in Table -7. The degree of collaboration ranges from 0.57 to 0.82 and the average degree of collaboration is 0.64. The degree of collaboration is calculated by using the following formula (K. Subramanyam, 1982):

The formula is Where

C= Degree of Collaboration
 Nm = Number of multiple authors
 Ns = Number of single authors

$$C = \frac{N_m}{N_m + N_s}$$

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$$C = \frac{131}{131 + 72 = 203}$$

In the present study the value of C is

$$C = 0.64$$

As a result, the degree of collaboration in the Annals of Library and Information Studies is 0.64 which shows the contributions of multiple authors.

FINDINGS AND CONCLUSION

- The scientometric analysis of annals of library and information studies from 2007 to 2012 for period of study.
- The journal has published 203 articles during the period of study.
- It is found that the highest number of contributions i.e., 43 (21.19 %) were published in the year 2010. The minimum number of 27 (13.31 %) was published in the year 2012.
- A total of 72 contributions (35.46 %) out of 203 have been contributed by single author, 131 contributions (64.54 %) by multiple authors.
- Out of 203 contributions, the highest number of i.e. 167 articles (82.26 %) were from authors affiliated with Academic Institutes whereas the lowest number i.e. 12 (5.92%) has been contributed by Special Institution.
- The total average number of authors per paper is 1.93 and the average productivity per author is 0.51.
- The degree of collaboration ranges from 0.57 to 0.82 and the average degree of collaboration is 0.64 during the study period.

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