Library and Information Science Literature in India: A Bibliometric Analysis

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Abstract

The purpose of this study was to explore the trends of publication patterns in Library and Information Science research using bibliometric review. The areas of the Bibliometrics review are contributions of current research, use of citations, length of articles, use of illustrations, authorship patterns, geographical and chronological distribution of contributions, etc. Two national journals were selected as source journals, i.e. IASLIC Bulletin and Annals of Library and Information Studies (ALIS). A structured schedule had been prepared to record data through content analysis of the articles published during the years 2010-2014. All issues of the journals have been collected and examined methodically. The result of the study can help the stakeholders in this field to understand the patterns of current research.

Keywords – *Bibliometrics, IASLIC Bulletin, ALIS*

Introduction

In India, there is a large number of journals in Library and Information Science, published from different parts of the country and the rate of publication is ever-growing. The journals are the indicators of literature growth in any field of knowledge. Present study highlighted the patterns of research publication in the field of Library and Information Science (LIS) using bibliometrics. This endeavour is useful to know the perspectives of the present investigation with regards to the utilization of citations and reference as well as publication patterns.

Bibliometric techniques using references made to other documents, can be applied to establish statistical models of scholarly communication flow. As far as the terminology was concerned, 'Bibliometrics' consists of two words, i.e. 'bible', which is a combination of Latin and Greek word 'billion', 'Bible (OS)' meaning book, paper and 'metrics' that is derived respectively from Latin and Greek 'metrics' and 'matrix' signifying science of the matter of simply a measurement (Halder & Jana, 2013). According to Reitz (2002) bibliometrics is "the use of mathematical and

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statistical methods to study and identify patterns in the usage of materials and services within a library, or to analyze the historical development of a specific body of literature, especially its authorship, publication and use. Prior to the mid-20th century, the quantitative study of bibliographic data and usage was known as *statistical bibliography*."

The ultimate advantage of this analysis can go to the research scholar, stakeholders of the educational institutions and LIS professionals also. Present bibliometric analysis has several applications within the field of LIS in identifying the research trends within the subject, core journals, etc. and thereby framing a new subscription policy for tomorrow. Moreover, it is expected that the researchers in LIS can realize new areas of research from the result of this research work.

Review of the literature

Halder and Chandra (2009) stated that bibliometrics is an important field of information science because it represents a unique set of techniques for the monitoring and analysis of information resources and for the management of knowledge in social and organizational contexts. Bibliometric methods to identify the core journals in specific disciplines to formulate the need based acquisition policies in the academic libraries for studying the citation analysis of research of literature in different subjects' authorship pattern and reference patterns. Citations can be used to map relationships between documents, between journals or other channels of scholarly communications. It also can be clustered to identify the flow of topics within and among disciplines (Borgman, 1999, p. 118). Indeed, citation analysis is a really significant field of library and information science. From the studies of citation analysis, one can understand which scholars from which disciplines cite that article and which journals are mentioned more frequently? Which disciplines cite the journals of different subject areas? The results of citation analysis study used for several roles, as an example, to work out the impact of specific articles or journals on sequent analysis and to document the knowledge domain relevance of varied journals (Desai, 2003; Harter, 1996). However, another study was to investigate the characteristics of cited references in the Journal of Information Science that has been recognized by the foremost vital journal sources within the field of information science. Different information science journals are "Journal of the American Society for Information Science and Technology" and "Information Processing and Management" (McCarthy, 2000). Moreover, information science is an interdisciplinary knowledge derived from, related to such fields as mathematics, logic, linguistics, psychology, computer technology, operations research, the graphic arts, communications, library science, management, and other similar fields (Borko, 1968, Saracevic, 1999, p. 1052).

Statement of the research problems

The present research problem gives rise to the following research questions, which are resolved in the course of the research work:

- What is the current trend of publications in LIS?
- What is the authorship pattern of the contributions?
- What is the attitude of the authors towards the use of references?
- What is the geographical distribution of contributions?
- Which subject areas are preferred by the researcher to study in the discipline of LIS? How can this be known? What procedure should be adopted in this regard?

Objectives

This research work makes an endeavour to clarify and quantify by bibliometric means, notable characteristics of Indian journals in LIS. However, to achieve its objectives, this study attempts to accomplish some tasks. These are given below:

- to assess the distribution of contributions;
- to determine authorship patterns of the contributions;
- to examine the distribution of illustrations incorporated in the contributions;
- to analyse volume wise length of the journals;
- to examine the distribution of the length of the papers;
- to determine the distribution of references cited in the contributions;
- to know the distribution of varieties or forms of references cited in the contributions;
- to assess the ranking of state wise distribution of the contributions; and
- to determine subject wise distribution of the contributions.

Methodology

In order to investigate the problem and resolve the research questions stated earlier, it had been intended to adopt the bibliometric study. The details regarding research design, sample, tools, procedure of data collection and statistical technique are reported hereunder.

To carry out sample study two national journals were selected as source journals, i.e. *IASLIC Bulletin*, and *Annals of Library and Information Studies* (ALIS). The first one journal was selected from Kolkata that is the head quarter of Indian Association of Special Library and Information Centres (IASLIC), and the other one was from New Delhi. *IASLIC Bulletin* is that the print journal, published from the year of 1956. It is a peer reviewed journal within the field of LIS. It comes out quarterly in March, June, September and December of every year. However, *Annals of Library and Information Studies (ALIS)* is published quarterly since 1954 in the print currently it has online simultenous version.

A structured schedule had been prepared to record data through systematic study and the

content analysis of the articles. For every issue, full-length scholarly papers, including research articles, review articles, and the brief communications were analysed. Another type of works, such as book reviews, letters, obituaries, announcements, news items, conference reports, committee reports, features, and editorials were excluded within the analysis. Information of every volume resembling authorship patterns, geographic distribution of the contributions, subject wise distribution of the contributions, etc. were noted within the schedule for the purpose of analysis. Initially the data collected from the source journals were entered in excel sheets in several fields. Data collected on the basis of different quantitative and qualitative analysis of the various aspects such as length of articles, volume wise distribution of the contributions, authorship patterns etc. were dispensed consistently. Then the presentation of data from totally different tables and figures as well as statistical analysis was done.

Apart from that, relevant data had been collected from various documentaries, personal and institutional sources.

The collected data were classified, tabulated, analyzed, compared and interpreted duly keeping in view the objective of the investigation.

Data analysis and interpretation

The present research study encompasses a five-year bibliometric study of *IASLIC Bulletin* and *Annals of Library and Information Studies (ALIS)* from the year 2010 to 2014. Research articles published during this period were analysed, interpreted and conferred hereinunder.

Table 1: Distribution of Contributions in IASLIC Bulletin & ALIS

Year	IASLIC Bulletin	Percentage of Contributions (%)	ALIS	Percentage of Contributions (%)
2010	28	24.34	44	24.58
2011	23	20.00	36	20.11
2012	23	20.00	27	15.08
2013	18	15.65	37	20.67
2014	23	20.00	35	19.55
Total	**115**	**100**	**179**	**100**

Generally, the number of contributions not varied widely in different issues of both the journals as reavealed from Table 1 below but in total contribution during this period ALIS is much ahead than IASLIC Bulletin. The total contributions in the five volumes of IASLIC Bulletin were 115 with an average of 23 articles per year. The maximum number of publications came with the year 2010, i.e. 24.34 percent. However, least numbers of contributions were found in the Volume 58, i.e. 15.65 percent of total five years' publications.

In case of ALIS the total contribution during the same period in the 20 issues of 5

volumes of were 179 with an average of 36 articles per year. However, the highest numbers of contributions were 44 articles (24.34 percent) published in the year of 2010 (volume 55). Besides, the lowest number of contributions, e.g. 27 articles (15.08 percent) in the year 2012 and volume 59 of the journal.

Authorship patterns

In IASLIC Bulletin, during this five year period, a total of 176 personal author appeared and in ALIS the number is 338. The Table FF below reveals that in IASLIC Bulletin the contributions of one author were higher (53.91%) than ALIS (36.87%). But the case of two authors is opposite, 39.13% in IASLIC Bulletin and 45% in ALIS. The three authors contribution is comparatively low in both the journals. As far as the more than three authors are concerned in IASLIC Bulletin there is no article but in ALIS there is more than 6% contributions are with more than three authors.

Table 2: Authorship patterns in IASLIC Bulletin and ALIS

No. of Author	IASLIC Bulletin		ALIS	
	No.	%	No.	(%)
One	62	54	66	37
Two	45	39	80	45
Three	08	07	22	12
>Three	-	-	11	06
Total	**115**	**100**	179	**100**

Indian state and foreign country wise distribution of contributors

Table 3: State wise contributors in IASLIC Bulletin & ALIS

Sl. No.	State	IASLIC Bulletin			ALIS		
		No. of contributors	%	Rank	No. of contributors	%	Rank
1	West Bengal	29	25	1	16	09	2
2	Punjab	10	09	2	04	02	6
3	Orissa	9	08	3	02	01	7
4	Uttar Pradesh	8	07	4	05	03	5
5	New Delhi	8	07	4	43	24	1
6	Tamilnadu	7	07	4	03	02	6
7	Maharashtra	6	3.5	5	07	04	4
8	Madhya Pradesh	4	3.5	5	05	03	5
9	Gujarat	4	3.5	5	01	0.5	8
10	Kerala	4	3.5	5	07	04	4
11	Karnataka	4	3.5	5	13	07	3

Sl. No.	State	IASLIC Bulletin			ALIS		
		No. of contributors	%	Rank	No. of contributors	%	Rank
12	Himachal Pradesh	-	-	-	04	02	6
13	J&K	3	03	6	02	01	7
14	Assam	3	03	6	02	01	7
15	Rajasthan	3	03	6	04	02	6
16	Andhra Pradesh	3	03	6	02	01	7
17	Meghalaya	2	02	7	-	-	
18	Mizoram	2	02	7	01	0.5	8
19	Jharkhand	-	-	-	02	01	7
20	Multi-states	2	02	7	-	-	
21	Haryana	1	01	8	02	01	7
22	Chhatrish Garh	1	01	8	-	-	
23	Uttarakhand	1	01	8	01	0.5	8
24	Manipur	1	01	8	-	-	
25	Arunachal pradesh	-	-	-	01	0.5	8
26	Foreign	1	01		51	28.5	
	Total	**115**	**100**		**179**	**100**	

It is already mentioned that the two journals published from two cities one is the capital city of the country and the other is published from a state capital city. Interestingly the publishing cities produced the highest number of articles in both the journals. The state West Bengal appeared as the highest contributor in IASLIC Bulletin and as second highest contributors in ALIS in the same period. In IASLIC 20 other satates appeared as contributors whereas in ALIS there are 21 states appeared in the same perspective. Unfortunately the multi-state appearance is rare in both the journals.

Table 4: Foreign country wise distribution of contributors in IASLIC Bulletin & ALIS

Sl. No.	Foreign Country	IASLIC Bulletin	ALIS		
		No. of contributors	No. of contributors	%	Rank
1	Nigeria	-	28	16	1
2	Srilanka	-	5	03	2
3	Bangladesh	-	5	03	2
4	Belgium	-	4	02	3
5	Netherlands	-	2	01	4

Sl. No.	Foreign Country	IASLIC Bulletin	ALIS		
		No. of contributors	No. of contributors	%	Rank
6	Philadelphia	-	1	0.5	5
7	China	-	1	0.5	5
8	Brazil	-	1	0.5	5
9	Iran	-	1	0.5	5
10	Honolulu	-	1	0.5	5
11	Russia	-	1	0.5	5
12	Botswan	-	1	0.5	5
	Italy	1	-	-	-
	Total	**01**	**51**	**28.5**	

As far as the foreign contributions are concerned the position of IASLIC Bulletin is absolutely poor compare to the ALIS. During this period the ALIS received more than 50 contributions, which is nearly 30% of its own total contributions from foreign countries, whwreas the IASLIC received only one contributions. Though most of the foreign contributions in ALIS came from the underdeveloped countries but the number of countries is no less than 12. So we can conclude that the geographical visibility of the ALIS is much higher than the IASLIC.

Distribution of references

As far as the quantities of references listed with the articles published during the period the ALIS is far ahead than the IASLIC Bulletin. The avarege reference per article in ALIS is simply the douwble than the IASLIC Bulletin as revealed in the above table (Table 5)

Table 5: Distribution of articles and references in IASLIC Bulletin and ALIS

Year	IASLIC Bulletin			ALIS		
	Articles	Total Ref	Average Ref	Articles	Total Ref	Average Ref
2010	28	299	11	44	1039	24
2011	23	276	12	36	819	23
2012	23	264	11.5	27	465	17
2013	18	223	12	37	821	22
2014	23	230	10	35	803	23
Total	**115**	**1292**	**11**	**179**	**3947**	**22**

Types of references

All references available with the articles under study have been categorised into four leading categories i. e. Book, Journals, Conference Procedings, and Web references. The journal references include the e-journal. All other types of references included in other category.

Table 6: Different types of references in IASLIC Bulletin and ALIS

Types of References	IASLIC Bulletin		ALIS	
	No.	%	No.	%
Books	615	47.60	1200	30.40
Journals	234	18.11	608	15.40
Conf. Proceeding	37	2.86	1098	27.82
Web reference	299	23.14	522	13.23
Other	107	8.28	519	13.14
Total	1292	100	**3947**	**100**

In both the journals the 'Books' as reference materials appeared highest but in different percentage. The 'Journal' as reference item appeared in both the journal more or less in same percentage as in the Table 6 above revealed. Interestingly ther is a high difference in use of 'Conference Proceedings' as reference item. In IASLIC it is only nearly 3 percent but in ALIS it is nearly 28 percent, which is more or less equal to its own share of 'Books' as reference material. In case of web as reference item the share of IASLIC is higher than the ALIS.

Subject-wise contributions in IASLIC Bulletin & ALIS

Table 7: Subject wise Distribution of Contributions in IASLIC Bulletin & ALIS

Sl No	Subject	IASLIC			ALIS		
		No of Articles	%	Rank	No of Articles	%	Rank
1	Digital information system	16	14	1	27	15	1
2	Bibliometric	13	11	2	25	14	2
3	Librarianship	11	9.5	3	09	05	6
4	Library management	10	8	4	03	02	9
5	Documentation	7	6	5	-	-	-
6	E-journal	6	5	6	14	08	5
7	Information centre	6	5	6	-	-	-
8	Job description	6	5	6	-	-	-
9	Knowledge management	6	5	6	06	03	8
10	Library and society	6	5	6	05	03	8
11	Citation analysis	5	4	7	16	09	4
12	E- publishing	5	4	7	05	03	8
13	Consortia	-	-	-	07	04	7
14	Need for information	4	3	8	-	-	-
15	Collection development	3	3	8	06	03	8
16	OPAC	-	-	-	05	03	8

Sl No	Subject	IASLIC			ALIS		
		No of Articles	%	Rank	No of Articles	%	Rank
17	Copyright	2	2	9	02	01	10
18	Information technology	2	2	9	03	02	9
19	Library automation	2	2	9	04	02	9
20	Subject gateway	2	2	9	19	11	3
21	Technical processing	-	-	-	03	02	9
22	Bibliographic control	1	1	10	-	-	-
23	Content analysis	1	1	10	04	02	9
24	Performance management	1	1	10	01	0.5	11
	Total	**115**			**179**		

The articles are categorised by subject also considering the main representative 'key word' as available from the key words given with the articles under study. Altogether there are 24 such main focus have been identified; 21 subject with the IASLIC's articles and 19 with the ALIS's articles. In both the journals the subject 'Digital information system' appeared in the first rank and 'Bibliometric' appeared in the second rank. The individual rank of the subject may be different but at least 19 subjects are common in bothe the journals.

Conclusions

Bibliometric techniques are being employed for a range of functions like determination of various scientific indicators, analysis of scientific output, selection of journals for libraries and even forecasting the potential of a selected field. Because of monumental growth within the field of Information and Communication Technology, most numbers of articles published on 'Digital information system'. Side by side, the recognition within the adaptation of bibliometric techniques in numerous disciplines stimulated large of the growth of literature on 'Bibliometrics' and its related areas. The majority of LIS researchers are preferred to contribute as either single author or put together two authors. Besides, maximum number of the authors referred 'books' as the source of information providing the highest number of citations. Apparently it has been determined that pretty good number of contributions accommodated from the house state – the place of publication of the journals.

Therefore, present analysis has successfully integrated that the journals are standard in its true sense, because the papers are contributed by authors across the country furthermore from abroad and peer reviewed publications with consistency. Moreover the results of the study highlighted multimodal bibliometric measures that would be a useful tool for all stakeholders to know the characteristic features of the journals.

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