

A Study of Authorship Pattern and Collaborative Research Paper Published in Library and Information Science Literature during 2015 to 2018

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Abstract

This paper is a scientometric analysis of authorship patterns and collaborative research in the Journal of Indian Library Association. A maximum of 79 records were covered during the study period 2015 to 2018. In this paper, only authorship pattern in the field of Library and Information Science was studied. The studies carried out for this paper found that research papers of single author and multi-authored are equal. The degree of collaboration is found as 0.50. The geographical distributions are majority of contributions by India.

Keywords: Authorship pattern, collaboration, Journal of Indian Library Association, single author, multi-authored, scientometric analysis

Scientometric Analysis

The term scientometrics was coined in Russia. It is mainly used for the study of all aspects of the literature on science and technology. Scientometrics is a science of measuring and analyzing aspects relating to science.

According to Pouris, “Scientometrics is for science what econometrics is for economics”. Therefore, it is an application of quantitative techniques (systems analysis, mathematical, and statistical techniques, etc., to scientific communication, science output, science policy, science administration, etc.) with the objectives of developing science indicators, measuring the impact of science on society, and comparing output as well as the impact of science at national and international levels [1].

Journal of Indian Library Association

Journal of Indian Library Association is an official organ of the Indian Library Association. This

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journal covers all different aspects of Library and Information Science. This journal started in 1965. The journal publishes quality research articles on the subject of Library and Information Sciences [2].

Review of Literature

A number of scientometric analyses have been evaluated for the research productivity of author and authorship pattern and degree of collaborations.

The study by Hussain and Swain (2011) intends to evaluate the top papers of Computer Science as reflected in Science Direct during 2004–2008. A total number of 495 top papers, three-authored

articles are a little ahead than two authored articles. The USA is first as followed by United Kingdom, Taiwan, China, and Canada. European Journal of Operational Research occupies the top position [3].

Rattan and Gupta (2012) examined the study on bibliometric analysis of a journal titled Malaysian Journal of Library and Information Science during 2007–2011. A maximum of 47% of articles has been written by two authors, followed by 27% single authors, and 26% by three authors. Malaysia with 34.72% contributors ranks first. The 62.54 percentage references are the periodicals, followed by books, conference proceedings, and Thesis with 14.93 percentages [4].

Kumar (2013), studied on bibliometric analysis of Journal of Indian Library Association. He found that a maximum number of research papers were contributed by a single author from Pakistan who contributed in the journal during the five years. Out of 119 authors, 118 are from India followed by Pakistan with 1 author, the four states Haryana, Delhi, Tamil Nadu, and Maharashtra state top the list with 51 while the remaining authors from 15 states contributed 53 [5].

Kuri and Palled (2016) in their paper examined the articles published in Journal of Indian Library Associations for ascertain number, chronological distribution of articles, number of page, authorship pattern, and degree of collaboration. The institutional and geographical distribution of articles were recorded and analysed for making observations [6].

Kotti Thavamani (2017) in the article analyzed the various components published in the Journal of Biofuels from 2010 to 2016 with respect to authorship patterns, author productivity, most prolific contributors and degree of collaboration [7].

Barphe and Kapade (2017) analyzed the literature published in Journal of Library and Information Science on DOAJ discussing authorship pattern and collaborative research in the covered maximum of 120 records during the study period 2005 to 2014 [8].

Objectives of the Study

- To study the year-wise distribution of articles.
- To study the authorship pattern and collaborative research.
- To examine the author productivity distribution year-wise in LIS
- To identify the geographical distribution of contribution.

METHODOLOGY

The study specifically selects Journal of Indian Library Association for the period 2015 to 2018 for the analyses by using scientometrics methods such as degree of collaboration and authorship pattern.

Scope of the Study

The study covers the Journal of Indian Library Association 2015 to 2018 and it covers 04 volume and 79 research papers published in this journal.

ANALYSIS AND DISCUSSION

Year-wise Published Papers

Table 1 shows the total output for the period 2015 to 2018. During this period, 79 research papers were published. It is observed that the year 2018 and volume no. 54 has the highest number of research papers i.e. 23 (29%) and the lowest number of papers were during 2016 i.e. 17 (22%) published in this journal. Figure 1 shows the year-wise published papers in the Journal of Indian Library Association.

Country-wise Distribution of Published Papers

Table 2 provides data to country-wise distribution of published papers in the Journal of Indian Library Association. It is observed that out of the total 79 contributors, the majority i.e. 78 (99%) of

articles have been published by Indian authors. 01 (1%) contributor have been from foreign country Iran.

Table 1. Year-wise published papers.

S.N.	Vol. and year	No. of contributions	%
1.	51 and 2015	19	24
2.	52 and 2016	17	22
3.	53 and 2017	20	25
4.	54 and 2018	23	29
Total		79	100

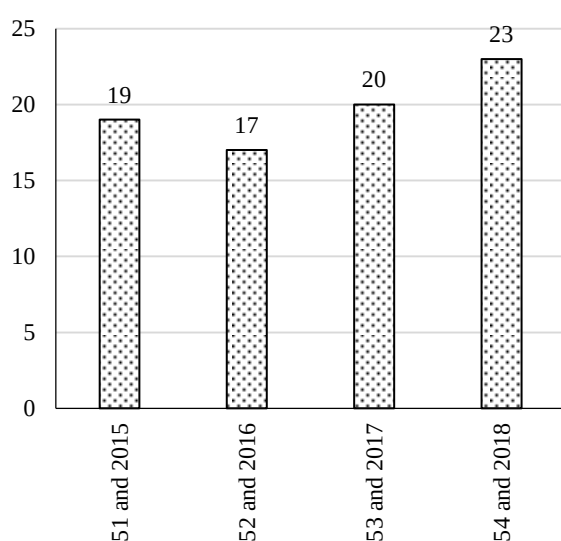


Figure 1: Year-wise published papers.

Table 2. Country-wise distribution of published papers.

S.N.	Country	No. of contributions	%
1.	India	78	99
2.	Iran	01	01
Total		79	100

State-wise Distribution of Published Papers

Table 3 shows that the majority of contributors were from Uttar Pradesh 17 (22%) followed by three states Karnataka, Maharashtra, and West Bengal with 07 (9%) of total contributors. Tamil Nadu comes next with 06 (8%) and New Delhi and Punjab stands in fourth position with 05 (6%) of papers. Jammu and Kashmir stands fifth with 04 (5%), Mizoram stands in sixth position with 03 (4%). Gujarat, Haryana, Kerala, Madhya Pradesh, and Telangana stand in seventh positions 02 (3%) and in eighth positions are Andhra Pradesh, Arunachal Pradesh, Assam, Odisha and Rajasthan with 01 (1%). About 02 (3%) contributors have not mentioned place in articles. Figure 2 shows the state-wise distribution of published papers.

Authorship Pattern

Table 4 shows the authorship trends. Out of 79 research papers, single papers claim maximum score i.e. 39 (49.36%), so it stands in first place and the next place is of two authors accounting for 38 (48%), 3% papers hold third position with three authors papers. Figure 3 shows the authorship pattern in Library and Information Science.

Table 3. State-wise distribution of published papers in India.

S.N.	State	No. of contributions	%	Rank
1.	Andhra Pradesh	01	1	VIII
2.	Arunachal Pradesh	01	1	VIII
3.	Assam	01	1	VIII
4.	Gujarat	02	3	VII
5.	Haryana	02	3	VII
6.	Jammu and Kashmir	04	5	V
7.	Karnataka	07	9	II
8.	Kerala	02	3	VII
9.	Madhya Pradesh	02	3	VII
10.	Maharashtra	07	9	II
11.	Mizoram	03	4	VI
12.	New Delhi	05	6	IV
13.	Odisha	01	1	VIII
14.	Punjab	05	6	IV
15.	Rajasthan	01	1	VIII
16.	Tamil Nadu	06	8	III
17.	Telangana	02	3	VII
18.	Uttar Pradesh	17	22	I
19.	West Bengal	07	9	II
20.	No place mentioned	02	3	
Total		78		

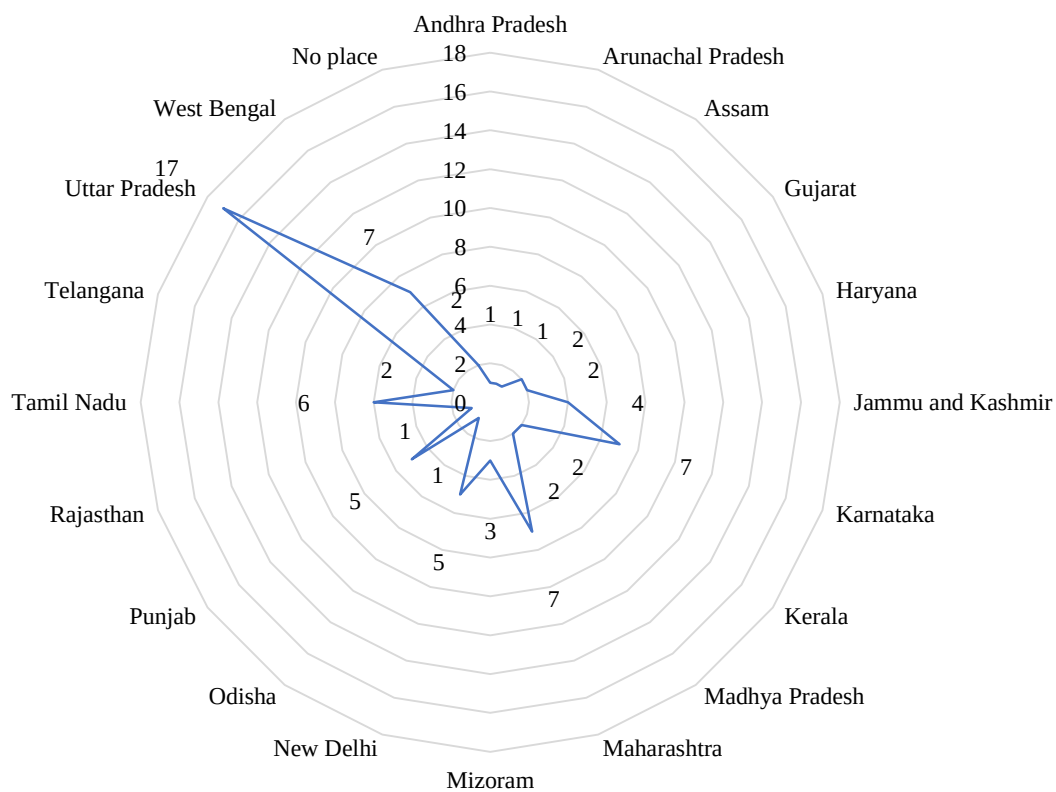
**Figure 2.** State-wise distribution of published papers in India.

Table 4. Authorship pattern.

S.N.	Vol. and year	Authorship pattern			Total
		Single	Two	Three	
1.	51 and 2015	13	06	00	19
2.	52 and 2016	07	10	00	17
3.	53 and 2017	08	11	01	20
4.	54 and 2018	11	11	01	23
Total		39	38	02	79
%		49.36	48	03	100

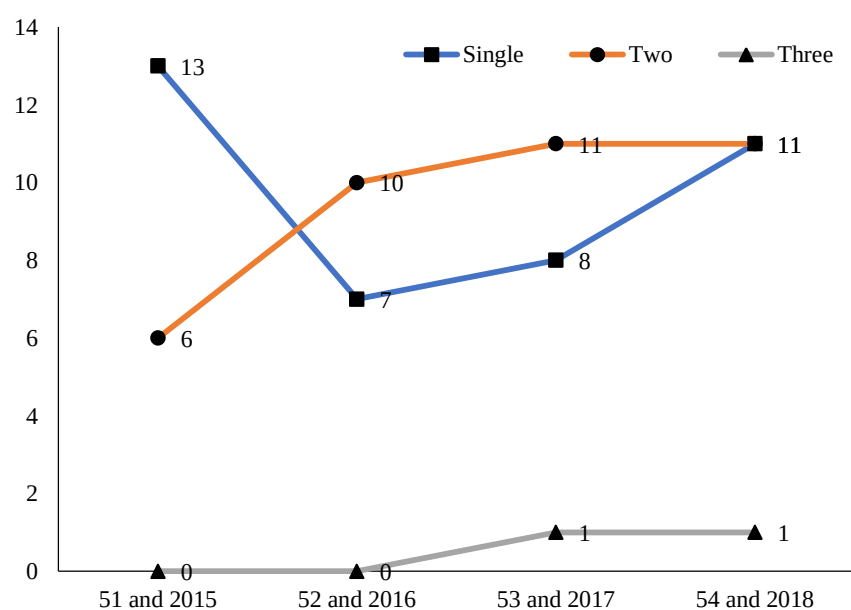


Figure 3. Authorship pattern.

Degree of Collaboration

The degree of collaboration of authors year-wise is shown in Table 5. The extent of degree of collaboration in Journal of Indian Library Association Paper has been calculated with the help of devise by Subramaniam (1993).

The formula is $C = \frac{Nm}{Nm} + Ns$

C = Degree of collaboration in LIS

Nm = Number of multiple authored papers

Ns = Number of single authored papers

The degree of collaboration that has been calculated for the year 2015 is as follows:

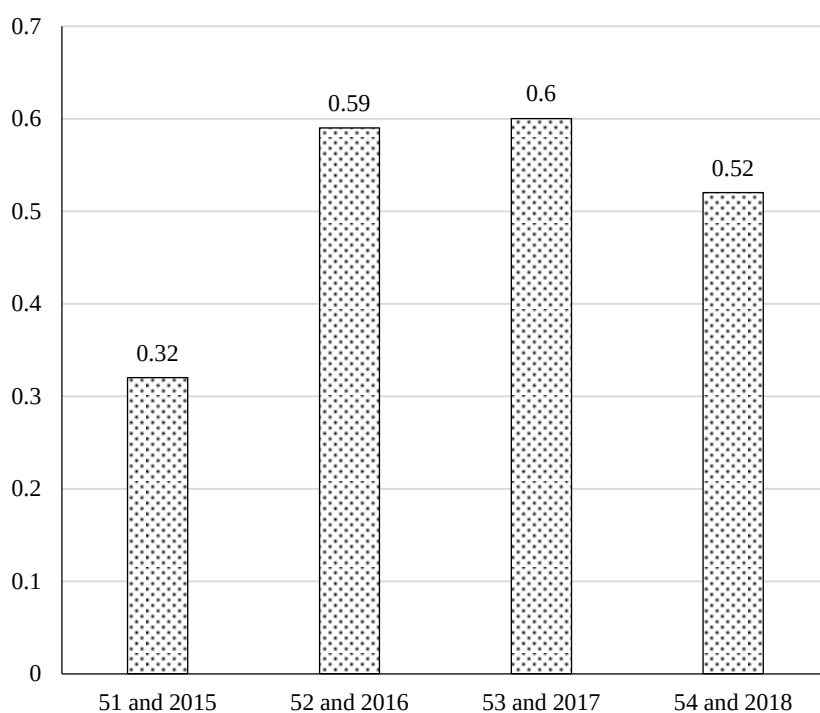
$$\begin{aligned}
 C &= \frac{6}{6} + 13 \\
 &= \frac{6}{19} \\
 &= 0.32
 \end{aligned}$$

Thus, the degree of collaboration in “Journal of Indian Library Association” is 0.32 which brings out clearly the prevalence of collaborative research in this field.

The distribution of the degree of collaboration over the years from 2015 to 2018 is presented in Table 5 and the degree of collaboration is shown in Figure 4.

Table 5. Degree of collaboration in journal of Indian Library Association.

S.N.	Year	Authorship pattern		Total	Degree of collaboration
		Single authored	Multi-authored		
1.	2015	13	6	19	0.32
2.	2016	7	10	17	0.59
3.	2017	8	12	20	0.6
4.	2018	11	12	23	0.52
Total		39	40	79	0.50

**Figure 4.** Degree of collaboration.**Author Productivity Distribution Year-wise**

Data related to author productivity have been presented in Table 6 which shows that the total average number of author per paper is 1.53. The average productivity per author is 0.65. Figure 5 shows the author productivity.

$$*Average\ author\ per\ paper = \frac{No.\ of\ authors}{No.\ of\ papers}$$

$$*Productivity\ per\ author = \frac{No.\ of\ papers}{No.\ of\ authors}$$

Table 6. Author productivity.

S.N.	Year	No. of papers	No. of authors	AAPP (*)	Productivity per author (**)
1.	2015	19	25	1.31	0.76
2.	2016	17	27	1.58	0.63
3.	2017	20	33	1.65	0.61
4.	2018	23	36	1.56	0.64
Total		79	121	1.53	0.65

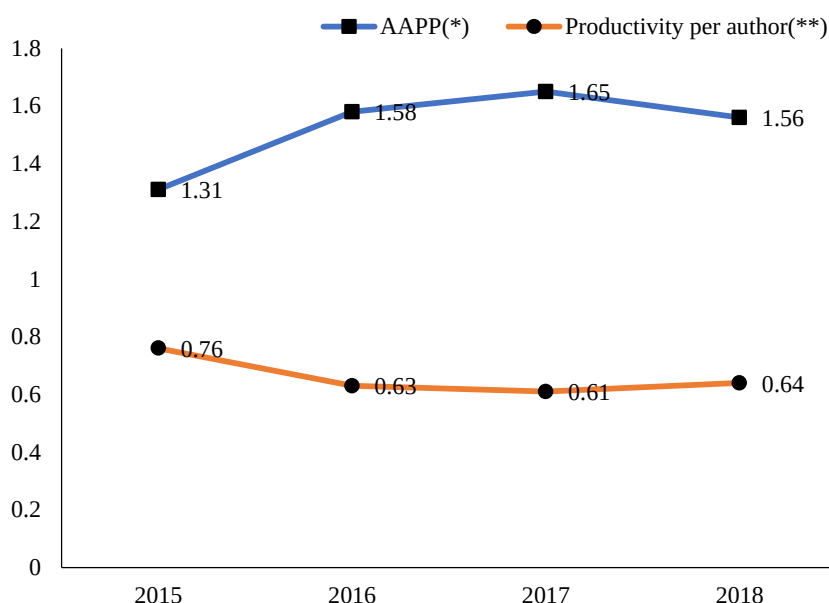


Figure 5. Author productivity.

FINDING AND CONCLUSION

- Distribution of research papers from 2015 to 2018 in the journal is between the maximum number of research papers 29% published in 2018 and minimum number of papers published 22% in 2016.
- The geographical distributions are the majority of contribution by India.
- Authorship pattern shows that the maximum number of research paper is contributed by single authors i.e. 39 (49%) and two authors paper is 38 (48%).
- The multiple authored papers i.e. 40 (51%) are predominate in the field of Library and Information Science articles published in Journal of Indian Library Association.
- The degree of collaboration in authorship pattern in research in Library and Information Science shows that multiple authorship was 0.32 in 2015 and it increased to 0.50 to 0.6 during 2016 to 2018.
- The average number of authors per paper is 1.53 and the average of productivity per author is 0.65.

CONCLUSION

51% of the contributions represent the collaborative research. The degree of collaboration has been arrived at 0.50 during the study period. The study discussed the degree of collaboration in the extension system of Library and Information Science. Multi author and single author's research papers are equal during the period.

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