

## Bibliometrics Analysis of the Annals of Library and Information Studies from 2012 to 2021

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**How to cite this article:** Sachin Suryawanshi, Mohan Laxman Jamdade, Rahul Navnath Manjare, Vishali Sambhaji Mulik, Digvijaysinh Anil Pawar (2024) Bibliometrics Analysis of the Annals of Library and Information Studies from 2012 to 2021. *Library Progress International*, 44(3), 19516-19525..

### ABSTRACT

This Bibliometrics study focuses on analyzing articles published in the Annals of Library and Information Studies (ALIS) journals from 2012 to 2021. The research examines publication trends within ALIS, offering insights valuable to Library and Information Studies (LIS) professionals and associations. The literature highlights a critical need for a comprehensive analysis of LIS trends in India. This study aims to scrutinize the publication characteristics of ALIS journals over the past decade, assessing year-wise article contributions, author productivity, and collaboration patterns. A total of 315 articles were reviewed, revealing trends in authorship and geographic distribution, with notable contributions from authors based in New Delhi (135 authors contributing 85 articles) and West Bengal (66 authors contributing 47 articles). The study identifies prolific authors, institutional affiliations, and popular keywords, providing a comprehensive overview of the field's scholarly output and collaborative networks.

**Keywords:-** Bibliometrics, prolific author, prolific institution, author productivity, prolific institution, library science,

### 1. Introduction

Change is an inherent principle of nature, essential for continual growth and advancement across the globe. Every sector undergoes regular shifts in trends, necessitating careful observation and interpretation. This practice not only enhances decision-making but also guides future directions. The field of libraries, like many others, has seen significant changes in the trends of published articles and books. Once confined to physical library infrastructures, access to libraries worldwide is now just a click away. Technological advancements have revolutionized the library landscape, making substantial contributions to the study and practice of library and information sciences. This study focuses on articles published in prominent journals archived in ALIS from 2012 to 2021. The methodology employed is bibliometrics, chosen for its ability to systematically select reliable information and

facilitate targeted analysis. Coined by as per the cited document [9], the term 'bibliometrics' derives from 'biblion,' meaning book, and 'metron,' meaning measure. Bibliometrics comprises a suite of methodologies designed to study and quantify textual and informational content.

Researcher defined 'bibliometrics' as the "quantitative treatment of properties of recorded discourse and behavior pertaining to it [3]." The British Standards Institution described it as the "study of the use of documents and patterns of publication applying mathematical and statistical methods. [2] As per the cited document termed it as the "quantitative analysis of the bibliographic features of a body of literature. [4]" According to citation Bibliometrics offers insights into "the structure of knowledge and its communication. [6]."

The research under review has examined various aspects including originality in research papers, reviews, citations, and publications within the field of library science. ALIS was selected as the platform to analyze journal publications due to its comprehensive coverage and reliability in presenting factual information. This study contributes significantly to the provision of authentic and precise data in a practical manner. Furthermore, the past decade has seen significant shifts in trends across all disciplines, including library and information science.

## **2. Literature review**

Recent studies have focused on analyzing and documenting trends in published articles within the field of library and information science. conducted a comprehensive analysis of current research and publication trends in this domain, based on data from the past five years. They categorized journal sections for analysis using the Scimago Journal Rank (SJR) results spanning 2013 to 2017, and identified the most cited articles from the Web of Science (WOS) database. Additionally, they compiled information on highly cited authors, influential articles, top publishing organizations, and prevalent topics such as titles, keywords, and summaries. Their findings underscored that these variables (e.g., topics, institutions, authors) serve as significant indicators of publication activity and bibliometric impact.[14]

A study conducted a quantitative analysis focusing on the growth rate and trends of global publications in the field of Library and Information Science (LIS) authored by librarians. The study examined 18,371 research articles published between 2003 and 2012, using data from the Web of Science (WOS). They found that from 2003 to 2009, a significant majority (69.9%) of articles were single-authored, whereas collaborative research became more prevalent from 2009 to 2012. Such studies serve as valuable tools for efficiently allocating research funds to enhance the research capabilities of academic and research organizations.[5]

In this study researcher conducted a bibliometric analysis focusing on Library and Information Science (LIS) research in the Asian region. The study analyzed 1127 papers published in 206 scientific journals, authored by 1685 individuals. These papers comprised 245 single-authored and 1440 multi-authored works. The research aimed to identify current trends in LIS issues using data from the Scopus database. Analysis was performed using the Bibliometrix program in R software, with results visualized using VOSviewer software.[13]

Investigated gender disparity among Indian scholars in Library and Information Science (LIS) from 1999 to 2018. Analyzing 1195 articles, the study assessed gender differences in first authorship and overall contributions during this period. The findings revealed that 65% of articles authored by women appeared in international journals, compared to 59% by men, indicating potentially higher quality contributions from women. However, the study also highlighted that gender parity in the field of LIS remains a distant goal.[8]

The study conducted a separate analysis focusing on 1357 papers published between 2014 and 2018, sourced from the Scopus database. The study identified consistent growth, with 342 articles (25.2%) published in 2018 alone. The most frequently used keywords included scientometrics, bibliometrics, India, and literary style. The degree of correlation (DOC) for the five-year period was calculated at 0.79, suggesting strong interrelatedness among the studied variables over time.[10]

In this study utilized 10 bibliometric indicators to assess the volume of European publications in Library and Information Science (LIS) journals indexed in Scopus from 2003 to 2012. The study focused on 20 countries and 25 domestic research projects that demonstrated high productivity during this period. Key metrics such as standardized effect, number and ratio of cited articles, and distribution across quartiles in the Scimago Journal Rank (SJR) were analyzed. The research encompassed 11,931 articles from Western Europe and 939 from Eastern Europe, published in a total of 149 journals.[7]

In a separate study, conducted a bibliometric analysis of 336 articles published in the Library Management Journal of Emerald between 2006 and 2012. Their analysis explored authorship patterns, citation trends, geographical

distribution of authors, and other relevant factors influencing scholarly output in the field.[11]

Based on the literature review, it is evident that there is an urgent need for a comprehensive analysis of current trends within the field of Library and Information Science (LIS) in India. Therefore, the present study aims to conduct an in-depth analysis of publication characteristics in the Annals of Library and Information Studies (ALIS) over the past decade. The study seeks to achieve the following objectives:

- Analyze the yearly contribution of articles.
- Assess author productivity and identify collaboration trends.
- Identify the most prolific authors and institutions.
- Examine the geographical distribution of published articles.
- Study the distribution of article lengths and the frequency of keywords used.

This research aims to provide valuable insights into the evolving landscape of LIS research, highlighting key contributors, institutions, and trends shaping the field in India.

### **3. Research Method**

To effectively evaluate and monitor published research in the Annals of Library and Information Studies (ALIS) journal, researchers have employed a quantitative approach known as Bibliometrics. This method ensures a systematic and objective review of literature across various domains. Data for this study were gathered from articles published between 2012 and 2021, sourced from the ALIS journal website at <http://op.niscair.res.in/index.php/ALIS>.

The study encompasses 315 articles originating from 28 states within India and 21 other countries. Analysis of the data was conducted using Microsoft Excel, facilitating the creation of clear and informative figures and tables to present findings effectively. This approach aims to provide insights into trends and patterns within the field of Library and Information Studies, both nationally and internationally.

### **4. Results and Discussion**

As previously discussed, the quantitative analysis of articles published in ALIS from 2012 to 2021 has been meticulously conducted across several parameters. These include the growth of publications on a yearly basis, authorship patterns, collaboration trends, identification of popular authors, analysis of prolific institutions, and the geographical distribution of articles both within states in India and across various countries. Additionally, the study has examined the distribution of article lengths and the prevalence of keywords used throughout the analyzed period.

#### **4.1 Chronological growth of publication**

Figure 1 details the growth of publications in the ALIS from 2012 to 2021. The 315 articles were published from the period of 2012 to 2021.

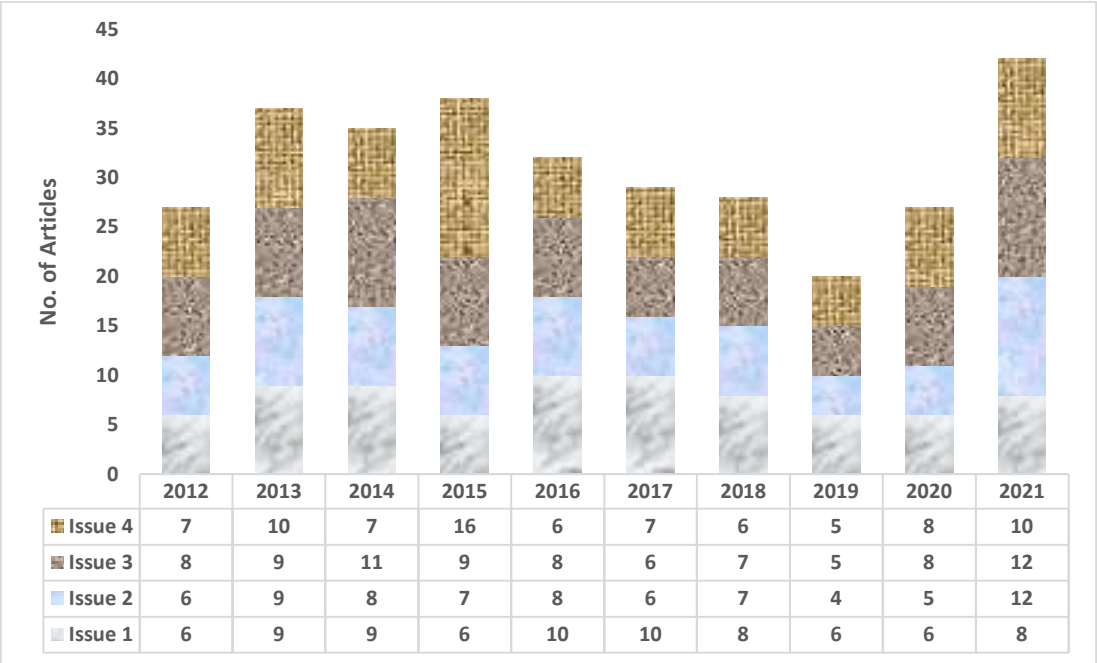


Figure 1 Variations of number of articles published in ALIS during 2012-2021

4.2 Author Productivity

Figure 2 illustrates the distribution of articles and author productivity across two equal blocks of five years each. The period from 2012 to 2016 saw the highest publication with 169 articles (53.65% of the total). On average, each paper had 1.89 authors, resulting in a productivity rate of 0.52 articles per author. Conversely, from 2017 to 2021, there were 149 articles published, accounting for approximately 45.35% of the total publications during the analyzed period.

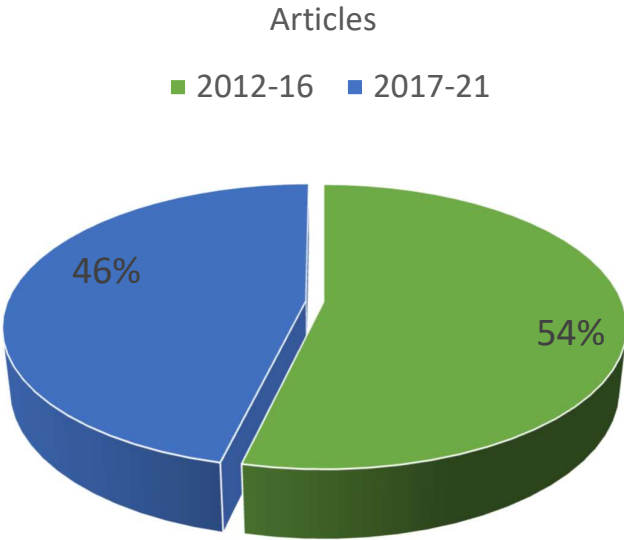


Figure 2 Block-wise distribution of published articles

Figure 3 presents the distribution of authorship patterns and collaboration trends observed in the analysis. Out of 315 articles reviewed, 104 articles (33.01%) were published with single authorship, while 157 articles (49.84%) involved two authors, and 41 articles (13.01%) had three authors. The Degree of Collaboration (DOC) and Collaborative Coefficient (CC) were calculated to further assess collaboration trends in ALIS publications. The average DOC across the articles is 0.66, indicating a high degree of collaboration, while the average CC is 0.36, underscoring the prevalence of collaborative authorship in ALIS publications.

#### 4.3 Authorship distribution and collaboration trends

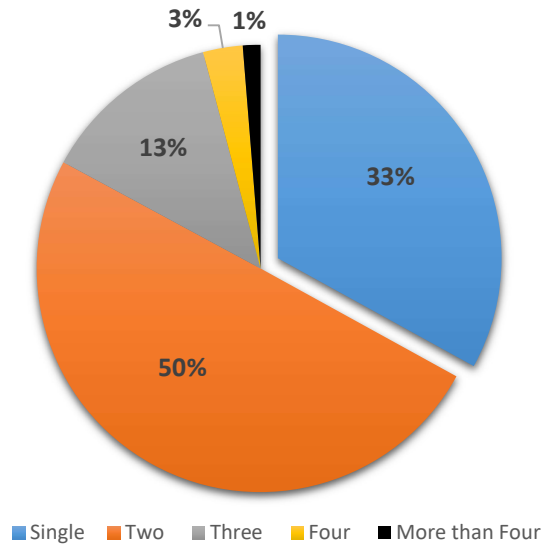


Figure 3: Authorship pattern for the published articles in ALIS during 2012-2021

For the calculation of the DOC, the following formula is used Subramanyam (1983):

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

Where  $N_m$  is the number of multi-authored publications and  $N_s$  is the number of single-authored publication.

For the calculation of the  $C_c$ , the following mathematical formula is used from Ajiferuke et al. (1988). [1]

$$C_c = 1 - \frac{\sum_{j=1}^k \left(\frac{1}{j}\right) f_j}{N}$$

Where,  $j$  = Authorship,  $f_j$  = no of  $j$ -authored research papers,  $N$  = the total number of research papers and  $k$  = the greatest number of authors per paper.

#### 4.4 Contribution pattern of authors

Table 1 shows the contribution pattern of authors in ALIS during 2012-2021. In the said journal, a total of 455 authors contributed articles. Out of this maximum 384 authors (84.4%) shared one paper each, 41 authors (9.01%) shared two papers each, and 14 authors (3.08%) shared three papers each.

Table1 Contribution pattern of authors in ALIS

No. of contributions	No. of Authors	%
1	384	84.4
2	41	9.01
3	14	3.08
4	8	1.76
5	4	0.88
6	2	0.44
8	1	0.22
12	1	0.22
<b>Total</b>	<b>455</b>	<b>100</b>

#### 4.5 Most prolific authors

Table 2 shows the most prolific authors who have contributed at least 5 articles to ALIS during 2012-2021. Dr. B.K. Sen, from the Department of Science & Technology, Government of India, published a maximum of 12 articles and ranked at first place.

Table 2 Most popular authors who have contributed at list 5 articles during 2012-2021

S. No.	Author	Affiliation	Single Authored	First Authored	No. of articles	Rank
1	Sen, B K	Department of Science & Technology, Government of India	6	0	12	1
2.	Dutta, Bidyarthi	Vidyasagar University	2	4	8	2
3.	Ray, ParthaPratim	Institute of Education, Visva-Bharati, West Bengal	3	3	6	3
4.	Dutt, Bharvi	Knowledge Resource Centre, CSIR-National Institute of Science, Technology and Development Studies New Delhi-110012	0	5	6	3
5.	Kumar, Suresh	CSIR-National Institute of Science Technology and Development Studies, New Delhi –	2	1	5	4
6.	Das, Anup Kumar	Jawaharlal Nehru University	3	1	5	4
7.	Nishy, P	CSIR National Institute for Interdisciplinary Science and Technology (CSIR-NIIST)	0	1	5	4
8.	Garg, K.C.	CSIR-National Institute of Science, Technology and Development Studies	0	3	5	4

#### 4.6 Most prolific Institutions

Table 3 indicates data related to participating institutions and their corresponding share in ALIS during 2012-2021. The author's affiliation reflected in each article represents the institute. CSIR National Institute of Science

Technology and Development Studies, New Delhi achieved the highest ranking out of 11 institutions with 22 articles authored by 23 authors.

Table 3 Most Productive Institutions

S. No.	Institutions	No. of articles published	No. of Authors	AAPP	Rank
1	CSIR National Institute of Science Technology and Development Studies, New Delhi	22	23	1.05	1
2	Indira Gandhi National Open University	12	12	1	2
3	University of Calcutta	12	13	1.08	2
4	Vidyasagar University, Kolkatta	12	19	1.58	2
5	Jawaharlal Nehru University, New Delhi	11	14	1.27	3
6	University of Delhi	11	16	1.45	3
7	Department of Science & Technology, Government of India	10	10	1	4
8	Banaras Hindu University, Varanasi	9	11	1.22	5
9	Visva-Bharati, University, Santiniketan, West Bengal	7	7	1	6
10	University of Colombo, Sri Lanka	6	6	1	7
11	University of Kerala	6	7	1.17	7

#### 4.7 State wise distribution of articles

As shown in Figure 4, the distribution of articles published in ALIS between 2012 and 2021 is broken down by state. The state is inferred from the affiliation of the authors. Out of 28 states, the 135 authors from New Delhi contributed 85 articles with the first rank.

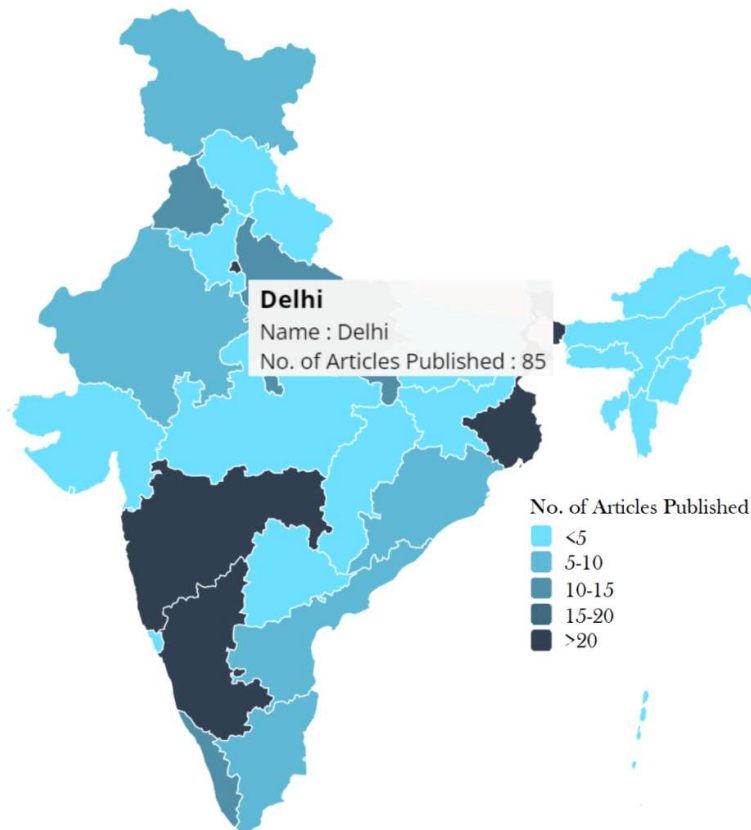


Figure 4 Number of articles published state-wise

#### 4.8 Country-wise distribution of articles

Table 4 shows foreign country contribution and authorship information for articles published in ALIS between 2012 and 2021. It is clearly found that Nigerian Country is at the top position and contributed with 19 articles and with 53 contributors followed by Sri Lanka has got the 13 articles with 20 contributed authors, Iran has got the 8 articles with 20 authors.

Table 4 Country-wise distribution of articles

Sr.No.	Country	Total articles published	Contribution of Total authors	AAPP	Rank of the Country
1.	Nigeria	19	53	2.79	1
2.	Srilanka	13	20	1.54	2
3.	Iran	8	20	2.5	3
4.	Bangladesh	5	11	2.2	4
5.	South Africa	4	7	1.75	5
6.	Malaysia	3	3	1	6
7.	Poland	3	3	1	6
8.	Brazil	2	2	1	7
9.	Canada	2	4	2	7



10.	Chaina	2	4	2	7
11.	Indonesia	2	4	2	7
12.	Japan	2	2	1	7
13.	Portugal	2	3	1.5	7
14.	Tanzania	2	3	1.5	7
15.	USA	2	3	1.5	7
16.	Fiji	1	1	1	8
17.	Kazakistan	1	4	4	8
18.	Spain	1	3	3	8
19.	Sudan	1	1	1	8
20.	Turkey Istanbul	1	2	2	8
21.	Uganda	1	3	3	8

Keywords wise distribution of articles: Figure 5 shows the most frequently used keywords: "Scientometrics" is the most frequently used keyword, followed by "Bibliometrics", then India, Citation Analysis, E-resources, Information Literacy, Nigeria and open access are also frequently used keywords.

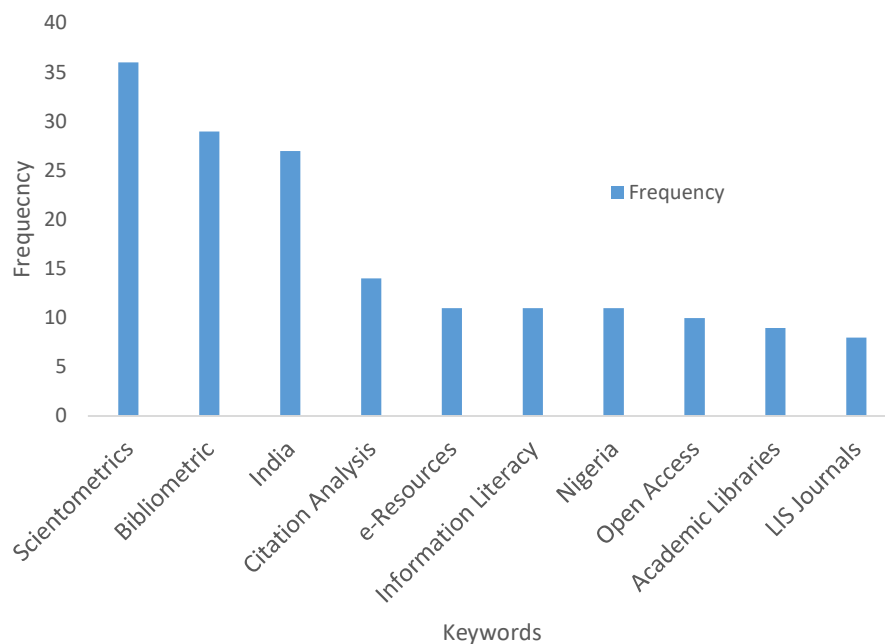


Figure 5 Frequently used keywords in ALIS

## 5. Conclusions

This study analyzes the publication trends of articles in ALIS from 2012 to 2021. Out of 315 articles selected from ALIS, the majority, 169 articles (53.65%), were published during the period 2012-2016. On average, each paper had 1.89 authors, resulting in a productivity rate of 0.52 articles per author. In terms of authorship patterns and collaboration trends, 104 articles (33.01%) were authored by a single author, while 157 articles (49.84%) involved two authors. The Degree of Collaboration (DOC) averaged 0.66, indicating a high level of collaboration among authors, with an average Collaborative Coefficient (CC) of 0.36, highlighting the prevalence of collaborative efforts in ALIS publications.

Geographically within India, New Delhi led with 85 articles published and contributions from 135 authors. Internationally, Nigeria held the top position with 19 articles published and 53 contributing authors, followed by Sri Lanka with 12 articles involving 20 authors. These findings underscore the diverse geographical contributions

and collaborative dynamics evident in ALIS publications over the past decade.

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