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Scientometric analysis of library & information science research: An international journal: 2015-2022

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ABSTRACT

This study examines articles published in the "Journal Library & Information Science Research: An International Journal." A scientometric analysis was conducted on 298 contributions from 32 issues over an eight-year period (2015–2022). It was found that the highest number of contributions, 47 (15.77%), were published in 2022. The majority of contributions (100 out of 298) were authored by two individuals. The degree of collaboration varied between 0.56 and 0.82, with an average degree of collaboration of 0.71 during the selected period. Standard statistical tools were used to ensure credible outcomes. This study highlights trends and collaboration patterns in research published in the journal, providing insights into the evolving dynamics of authorship and research productivity in the field of library and information science. The analysis demonstrates how collaborative efforts have become more prominent over the years, indicating a shift towards more cooperative research endeavors. These findings are crucial for understanding the development and dissemination of knowledge within the field.

1. Introduction

The term ‘Scientometrics’ deals with the study of measuring and analyzing science, technology and innovation from a quantitative perspective. One of the great pioneers Derek De Solla Price’s depictions of ‘Science of Science’ have led to the definition of Scientometrics, who is considered as the father of this field (Danesh and Mardani-Nejad, 2020).[1] The metrics of LIS are accelerating, commencing from Librametrics, Bibliometrics, Scientometrics, Informatics, Webometrics and Netometrics to Cybernetics (Khan, 2016).[2]Present day Scientometrics oscillate around several prominent scholars which have come to play a vital role in the measurement and evaluation of research performance like Derek De Solla Price, Eugene Garfield, Robert King Merton (Velmurugan and Radhakrishnan, 2015).[3]The utility of Scientometrics has received a badge of honor in most areas (Straub, 2006).[4] A Scientometricanalysis give away some implication of research activities primarily, such as with respect to research outlets, research impact, co-citations, influential countries/affiliations/authors, and development of key topics.

Throughout this current study, Scientometric analysis accomplished with 298 contributions of 32 issuespublished in the Journal Library & information Science Research: An International Journal, for a selected period of eight years i.e. 2015 – 2022.In future, this study will boost the LIS professionals for their analysis by following the tools and techniques used.

2. Source Journal

Library & information Science Research: An International Journal is a research-driven and referred journal. This journal is a recognizable LISjournal, publishes research articles chiefly from a social science perspective and is

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published by Elsevier B V. It is a dominant quarterly journal. This study aims to find out the Scientometrics Analysis of Journal of Library & information Science Research: An International Journal from 2015 to 2022 which exercises on the research process in library and information science**,** especially validation of innovative methods and theoretical frameworks.

3. Review of Related Literature

Present study requires adequate review of related literature by various scholars who indulge in different subjects in the form of articles published in the leading journals. Few of them have been taken to show the outcomes of the present work.

Subramanyam (1983)[5] paper examines the increasing trend of collaboration in scientific research, noting that its extent varies by discipline and is influenced by factors like research type and environment. He highlights the positive correlation between collaboration, productivity, and funding. Subramanyam advocates for bibliometric methods to study collaboration, as traditional methods are less effective. He calls for further research to refine the measurement and understanding of collaboration's impact on research and communication in science.

Rajendran et al. (2011)[6] focused on 633 research articles published during the period from 2005-2009 in Journal of Scientific and Industrial Research. The study reveals only 51 contributions are by single authored and rest of the contributions by multiple authored stating the degree of collaboration i.e. 0.92. The study put light on the author productivity which is 0.34 and gripped by Indian authors.

Satyajit Nayak analyzed 362 articles which booked their berth in the DESIDOC Journal of Library and Information Technology (2012-2016),[2] with the help of Scopus database. After reviewing the study it shows maximum number of contributions i.e. 69 (19.06%) were published in 2012 and Delhi at the top by contributing maximum number of 30 articles. Furthermore, study shows India's position which is at the highest level by contributing 320 articles out of the 362 contributors.

Mamdapur et al. (2013)[7] analyzed "College & Research Libraries" from 1997 to 2011, finding consistent publication trends with 32 articles per year. Single-authored articles were most common, averaging 1.88 authors per article, with a collaboration degree of 0.57. Journals were the primary citation source. The USA was the leading contributor, followed by Canada and China. Deborah D. Blecic and Stephen E. Wiberley were identified as prolific authors.

Kumar, K. (2014)[8] analyzed Library Information Science and Technology Abstracts (LISTA) covering the period from 1997 to 2011. The Bradford Law is chosen to check out the distribution of articles (as per age, year and article) authorship pattern, subject, language and geographical distribution. Results show that the greater number of articles published during the year 2009-2011 and targeted the articles based on digital literacy.

Jabeen et al. (2015)[9] studied library and information science research from 2003 to 2012 using Web of Science data. They found a decline in single-author articles and an increase in collaborative publications after 2009. The University of Illinois at Urbana-Champaign led with 95 publications. Asian countries like China, Taiwan, India, and Iran were in early research stages. The study highlighted trends and growth in the field.

Velmurugan and Radhakrishnn (2015)[3]explored 79 research articles published during the period of 2007-2013. Findings show that the maximum 462 articles by multiple authors of volume 5 published in 2008. On the other hand single authors contributed 161 articles in volume 6 published in 2009. The degree of collaboration measured by contributors during the specified period in Webology Journal is 0.506.

Singh et al. (2017)[10] analyzed articles in the "International Journal of Library and Information Studies" from 2012 to 2016. They documented 283 articles with 3685 references, noting contributions from only four countries. The study covered authorship patterns, geographical distribution, and bibliographic forms used for citations.

Singh et al. (2017)[11] took stock of seven volumes of Partnership: The Canadian Journal of Library and Information Practice and Research (2010-2016).[12] The study notifies that the contribution of single authors 187 (71.92%) was more prevailing than the joint authors. It is clear from the study that Canada contributed highest number of articles.

Batcha et al. (2018)[13] presented a scientometric analysis of the "DESIDOC Journal of Library & Information Technology" from 2013 to 2017. The study examined growth patterns, authorship trends, author productivity, and subject coverage. They found that 227 papers were published, with the majority being collaborative. The predominant subject was scientometrics. Most articles (65%) ranged from 6 to 10 pages. Standard formulas and statistical tools were used to derive these results.

Nayak (2018)[14] examined the "DESIDOC Journal of Library and Information Technology" from 2012 to 2016 using Scopus data. The study analyzed 362 articles, focusing on publication types, authorship patterns, and institutional contributions. Contributions came from 24 countries, indicating broad international engagement.

Suradkar et al. (2019)[15] explored 20724 research papers to determine the most inventive authors and journals in the health medicine research output during 2001 to 2013.[8] The study shows that the highest number of contribution i.e. 2335 (11.27%) were published in 2011 and issue number published maximum 1907 (09.20%) articles. Findings of the study revealed that the greater part of the publications is contributed by multiple authors and

it accounts 9472 (45.71%). Further, Journal of Internal Medicine had contributed maximum number of citations.

Viney et al. (2019) explored 459 articles published in emerald journals of Library and Information Science by covering the period of 2008-2017. After reviewing, the study put single authored articles on top i.e. 195 (42.48%) followed by two authored articles i.e. 164 (35.73%). Outcomes shows the average relative growth rate 1.59 whereas the average doubling time 0.50 of library literature. Furthermore, the collaborative index varied from 1.59 to 2.09 and followed by collaborative coefficient varied from 0.26 to 0.37. The findings shows the degree of collaboration which ranges from 0.46 to 0.63 and the average degree of collaboration is 0.57 which notifies that greater number of articles is contributed by multiple authorship than single authorship.

Kazimi et al. (2020)[12] analyzed the scientific innovations and achievements of library science during the period of five years (2014-2018). The study shows that the year 2018 is the most generative year for the publication of books, for article publication 2014, for defense thesis 2017 and for the conferences 2016. The contributions also look into the bibliographic references in publications on library science along with cited scientists.

Nayak et al. (2021)examined 311 research articles and 2534 citations which were published in the ASLIB Journal of Information Management during 2014 – 2021.[16] The study revealed that most of the articles (52) were published in 2020 Whereas, the maximum citations (558) were listed in 2015. The journal listed the publications of 827 authors from 51 nations. During the research process, the average degree of collaboration was 0.786. The findings show that the ASLIB Journal of Information Management publishes high quality research articles covering various areas of library & information science

Victoria P (2021) analyzed 8103 articles published during 2016 – 2020.[7] The results reflect the maximum publications i.e. 2067 (25.51%) were produced in 2020. The tendency in multiple authored articles has considerably stepped-up (90.40%) as compared to (09.60%) single authored papers. Further in 2020, the value of the highest degree of collaboration was (0.91).

Dey M (2022)[17] investigate 210 research articles published in the Malaysian Journal of Library & Information Science (MJLIS) during 2011 to 2020.[14] The majority of articles i.e. 174 (82.86%) were multiple authorship publications whereas only 36 (17.14%) were single-author publications. Further authorship pattern showed maximum contribution by collaborative authors which were 159.

In this paper, an attempt has been made to analyze the contributions to Library & Information Science Research: An International Journal published during the year 2015-2022, in order to explore the year-wise distribution, volume-wise authorship pattern, the authorship pattern, collaborative research, authorship pattern among the contributions, and the study covers 298 articles of 32 issues published.

4. Objectives

The objectives of the commenced research are to find out the prompt trends in 'Library & information Science Research, An International Journal during the year 2015-2022

1. To find out the year-wise distribution of articles
2. To look into the authorship pattern of the contributions
3. To analyze the volume-wise authorship pattern of contributions
4. To examine the single and multiple- authored articles of the journal
5. To assess the degree of collaboration

5. Materials and Methods

There are considerable areas in science, social science and arts for which Scientometric studies have been executed. To accomplish the present work, data has been collected from the 'Library & information Science Research: An International Journal' website http://www.sciencedirect.com/journal/library-and-information-science-research specifying to the selected period i.e. 2015-2022. Exhaustive study helps to put the collected data in an organized, calculated, tabulated and in analyzed manner which assists to achieve more desirable outcomes by using simple arithmetic and statistical techniques.

6. Results and Discussion

(Table 1) shows the maximum number of articles i.e. 47 (15.77%) were published in the year 2022 and minimum i.e. 32 & 32 (10.73%) in the years 2018 & 2019. The journal publishes on an average of 37 articles per year.

7. Authorship Pattern

(Figure 1) reflects the detail of authorship pattern of articles published during the selected period of study. Out of 298 articles, the maximum number of contributions i.e. 100 (33.55%) have been contributed by two authors, followed by 85 (28.52%) contributors and 69 (23.15%) and the minimum number of contributions i.e. 44 (14.76%) by multiple authors.

(Table 2) shows the volume-wise authorship pattern of contributions. It indicates that:

Out of 85 contributions of single author, volume 37 of 2015 has the highest number i.e. 16 (18.82%) whereas the volume 42 & 43 of 2020 and 2021 both have the lowest number i.e. 7 each (8.23%) contributions.

The above (Table 3) shows that out of 298 articles single author contributed only 85 (28.52%) articles while the rest

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

Year	Vol. No.	No. of Articles Issue-Wise				Total No. of Articles	%
		1	2	3	4		
2015	37	10	10	11	12	43	14.42
2016	38	10	10	10	10	40	13.42
2017	39	9	9	10	8	36	12.08
2018	40	9	9		14	32	10.73
2019	41	9	8	8	7	32	10.73
2020	42	9	9	9	8	35	11.74
2021	43	8	8	9	8	33	11.07
2022	44	7	8	14	18	47	15.77
Total		71	71	71	85	298	100%

Table 2: Period / Volume-wise authorship pattern

S. No.	Year	Volume	Single Author	Double Author	Three Authors	Multiple Authors	Total	%age of Records
1	2015	37	16	18	5	4	43	14.42
2	2016	38	13	16	6	5	40	13.42
3	2017	39	10	14	9	3	36	12.08
4	2018	40	14	11	3	4	32	10.73
5	2019	41	10	9	8	5	32	10.73
6	2020	42	7	10	11	7	35	11.74
7	2021	43	7	8	10	8	33	11.07
8	2022	44	8	14	17	8	47	15.77
		Total	85	100	69	44	298	100
		%	28.52%	33.55%	23.15%	14.76%		

Table 3: Authorship pattern of individual and joint contributions

Year	2015	2016	2017	2018	2019	2020	2021	2022	No. of Articles	% of Record
Individual Author	16	13	10	14	10	7	7	8	85	28.52%
Joint Authors	27	27	26	18	22	28	26	39	213	71.47%
Total	43	40	36	32	32	35	33	47	298	100.00%

Table 4: Degree of collaboration

Year	Volume	No. of Authors		Total (Nm+Ns)	Degree of collaboration
		Single(Ns)	Multiple(Nm)		
2015	37	16	27	43	0.62
2016	38	13	27	40	0.67
2017	39	10	26	36	0.72
2018	40	14	18	32	0.56
2019	41	10	22	32	0.68
2020	42	7	28	35	0.8
2021	43	7	26	33	0.78
2022	44	8	39	47	0.82
	Total	85 (28.52%)	213 (71.47%)	298	0.71

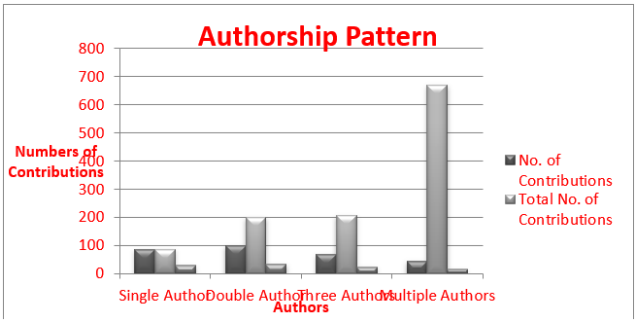

Figure 1: Pattern of articles published during the selected period of study

213 (71.47%) articles were contributed by joint authors.

(Table 4) describes the details about the degree of collaboration which indicate tend in single and multiple authorship covering the specified period of selected years i.e. 2015 – 2022. The degree of collaboration ranges from 0.56 to 0.82 and the average degree of collaboration is 0.71. The following formula is used to calculate the degree of collaboration.[6]

As per the formulae where: C = Degree of collaboration

Nm = Number of multiple authors

Ns = Number of single authors

$N_m + N_s$

213 + 85 = 298

C= 0.71

Hence, the degree of collaboration in the JournalLibrary& information Science Research, An International Journalis 0.71 which reflects the contributions of multiple authors.

8. Findings and Conclusion

1. Library & information Science Research, An International Journal is taken for the Scientometric analysis for a selected period of specified years i.e. from 2015 – 2022.
2. During the course of study for the selected period, the journal has published 298 articles.
3. As per the findings the highest number of contributions i.e. 47 (15.77%) were published in the year 2022 and the minimum number of 32 each (10.73%) contributions were published in the two consecutive years 2018 &2019.
4. Out of 298 contributions, 85 (28.52%) contributions have been contributed by single author while 213 (71.47%) contributions by multiple authors.
5. The degree of collaboration ranges from 0.56 to 0.82 and the average degree of collaboration is 0.71 during the selected period.

9. Conflict of Interest

None.

10. Source of Funding

None.

References

1. and others, editor. The Father of Scientometrics. Handbook Bibliometrics; 2020. p. 41–52.
2. Khan I. A scientometric analysis of DESIDOC Journal of Library & Information Technology (2010-2014). . *DESIDOC J Lib Inf Technol*. 2010;33(7):8–12.
3. Velmurugan C, Radhakrishnan N. Webology journal: a scientometric profile. *Int J Inf Dissemi Technol*. 2015;5(2):137–42.
4. Straub D. The value of scientometric studies: An introduction to a debate on IS as a reference discipline. *J Asso Inf Syst*. 2006;7(5):241–5.
5. Subramayan K. Bibliometric Studies of Research Collaboration: A Review. *Rev J Inf Sci*. 1983;6(1):33–8.
6. Rajendran P, Jeyshankar R, Elango B. Scientometric analysis of contributions to journal of scientific and industrial research. . *Int J Dig Lib Serv*. 2011;1(1):79–89.
7. Mamdapur GMN, Rajgoli I. Scientometric analysis of contributions to the journal college and research libraries. 1997;p. 1–15.
8. Kumar K. A scientometric study of digital literacy in online library information science and technology abstracts (LISTA). *Libr Philos Pract*. 2014;1(1):1–14.
9. Jabeen M, Yun L, Rafiq M, Jabeen M, Tahir MA. Scientometric Analysis of Library and Information Science Journals 2003-2012 Using Web of Science. *The Int Inf Lib Rev*. 2015;47(3-4):71–82.
10. Singh K, Varma AK, Pradhan A. Scientometric Analysis of International Journal of Library and Information Studies (IJLIS). *J Lib Inf Sc*. 2017;4(6):108–14.
11. Singh K, Nayak S, Varma AK. A scientometric analysis of partnership: The Canadian Journal of Library and Information Practice and Research. *Int J Libr Inf Stud*. 2010;7(3):81–8.
12. Kazimi P, Abdullayeva A, Ismayilov N. Scientometric analysis of document flow in library science of Azerbaijan (2014-2018). . *Norwegian J Dev Sci*. 2020;45:66–70.
13. Batcha MS, Jahinasr AM. Publication Trend in DESIDOC Journal of Library and Information Technology during 2013-2017: A Scientometric Approach. *Int J Res Eng IT Soc Sci*. 2018;8(4):76–82.
14. Nayak S. Research Output of Desidoc Journal of Library and Information Technology: A Scientometric Analysis. *Int J Lib Infor Stud*. 2018;8(1):174–80.
15. Suradkar P, Hemke DA. Scientometric Analysis of Quarterly E-journals of Health Science. *Lib Philosophy a Pract*. 2019;p. 1–15.
16. Nayak S, Parida DK, Verma N, Hari PK. Bibliometric Analysis of the ASLIB Journal of Information Management from. *Lib Philosophy Pract (e-journal)*. 2014;p. 1–13.
17. Dey M. Mapping of Research Trends of Malaysian Journal of Library and Information Science-A Scientometric Analysis. *Lib Philos Pract*. 2022;p. 1–21.

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