

# Scientometric Analysis of Library and Information Science Articles During the Year 2008-2017 Using Web of Science

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**Abstract** -This article highlights the research productivity and scholarly communication of library and information science articles during the year 2008–2017 indexed by the Web of Science database. This analytical study consisting of 56 reports and data downloaded from the Web of Science (Clarivate Analysis) database. Scientometric research mainly focused on the range of research productivity in the field of library science in a specific period. To evaluate the Publication years, to identify the authors who wrote, the more articles, which journals published most of the relevant subject articles, which institute and country have mostly involved in a particular subject; all these are to mainly discussed in this study. The present study considered as a useful tool for effective allocation of research funds in the research community and the academic world of library and information science to enhance the research process.

**Keywords:** Scientometric, Web of Science, Social Network Analysis, Scholarly Productivity

## I. INTRODUCTION

The recent years may be celebrating as the century of the development of metric sciences. In earlier days metric is used for size and quantity wisely only. But now metric is applied in various aspects in the field of library and information science. When the parameter has first implemented in the library activities, it is called Library metrics; then it has begun to deep into the leg. Because of its multifaceted evolution, development and also labeled in many more categories like bibliometrics, scientometrics, cyber metrics or webometrics and last incarnation is informatics.

Scientometric studies mainly focused on the evaluation of scientific productivity and investigations on various aspects of scholarly writings as these analytical studies play a pivotal role in the decision-making and policy-making process of any academic field. The Scientometric systematic survey is a reliable and foremost way to observe research trends and scholarly activities. Journals are a vital role play in a spread the information about research and academic information worldwide.

In this paper deeply analyzed library and information science articles indexed by a Web of science (Clarivate Analysis) database during the year from 2007 to 2012. This study covered from 2007 to 2012 (Ten Years) only. The key term used for searches such as “Library Science”,

“Information Science” and “Scientometrics” is used for data collection. As a result of 56 articles were published during the years. Each paper has published in different periods and different authors.

## II. DATA SOURCE

All the data in this study collected from WOS (Clarivate Analysis) database. Web of Science is the most reliable database because of accurate data, objective, and complete resource available. 100% Fully indexed cited references, authors, and author affiliations, more than 20 thousand Journals carefully and objectively selected for quality, 1.4 billion cited references from 1990 available. The Web of Science platform connects the Web of Science Core Collection to regional citation indexes, patent data, specialized subject indexes, and an index of research datasets, all in all totaling over 33,000 journals.

Journals selection process fully independent and unbiased. The editorial team works full-time on evaluations and collection management and has done so for many decades. The journal selection process is publisher neutral and applied consistently to all journals from our 3,300 publishing partners. Existing titles are always under review to ensure they maintain initial quality levels.

## III. REVIEW OF LITERATURE

The last decades, numerous scientometrics studies conducted in various subjects. The majority of research authors belong to library science professionals. Some research based on library science journals, some of these articles are considered here to enriching our study.

Munazza Jabeen and others (2015) analyzed Library and Information Science Journals 2003–2012 Using Web of Science. They are taken 40 library science journals for this study. The data were interrupted by two open source software vantage point and CiteSpace II. As a result of this study up to 2009 single authors dominated in every article, the last three years the trend has been changed into collaborative authors. The University of Illinois published 95% of journals with first place. Almost carried out these researches by the universities and also Asian countries are in the initial stage of this study.

Dhiman Mondal and others(2017)examined the contribution by Indian Authors in Foreign Origin Library and Information Science Journals during 2006-2015. This scientometrics study analyzed the scholarly research publications productivity and year of publication, authorship pattern, famous authors, and institutions. Finally identified 234 articles contributed by Indian authors and two articles are collaborating with foreign authors during the period. Most of the materials preferred in the field of Library Philosophy and practiced only.

Dr. B. Jeyapragash, A. Muthuraj, and T. Rajkumar (2017) analyzed UGC approved library science journals. In their research 384, library and information journals took from various online databases. Mainly focused on this study journal’s Impact Factor, Cite Score and Journal Current Index. At the end of the study the highest, impact factor (2.109) journals found in Web of science database, others are indexed by Scopus and Indian Citation Index. Nevertheless, a vast number of LIS journals to be included in Scopus and ICI for extensive publishing.

**IV. OBJECTIVES OF THE STUDY**

1. To Analyze the LIS articles growth rate in a certain period indexed by the web of science database
2. To analyze the Author wise contribution in an LIS publication during the period

3. To examine the year thoughtful contribution in LIS article output indexed by WOS
4. To explore the publication institutions in the above mentioned key terms

**V. METHODOLOGY**

The research method of study was a scientometric analytical method. In the present study, the dataset consists of 56 LIS articles indexed by the web of science database during the year of 2008 – 2017.

Statistical data downloaded from WOS result analytical report; it is an accessible database and trusted data source; the majority of researchers have used this database for scientometrics studies and scientific research. It provides detailed information such as author, journal, subject, and country collaboration. From 2007 to 2017, 56 articles were identified, including 49 articles, seven proceedings papers, and one review.

The process completed in September, 19<sup>th</sup> 2018; and also determine the accurate and other bibliographic details; the data were processed through a few steps. The whole data were downloaded from the WOS database in the form of txt format through the result analytical report;downloaded txt files converted into MS excel format for systematic statistical study. Each record is checked, examined and tabulated for identifying the publication growth rate.

TABLE I AUTHOR WISE DISTRIBUTION OF LIS ARTICLES

S. No.	Author	Articles	% of 24	Cumulative
				(%)
1	LEYDESDORFF L	3	12.5	12.5
2	MILOJEVIC S	3	12.5	25
3	NI CQ	3	12.5	37.5
4	SUGIMOTO CR	3	12.5	50
5	ABRIZAH A	2	8.35	58.35
6	BORNMANN L	2	8.33	66.68
7	DIDEGAH F	2	8.33	75.01
8	DING Y	2	8.33	83.34
9	ERFANMANESH M	2	8.33	91.67
10	FERRER C	2	8.33	100
	Total	24	100	

TableI shows author wise distribution of LIS articles. Only the top 10 authors are taken into account here; the analysis of author contribution of the total 56 records reveals that Leydesdorff L, Milojevic S, NiCq, and Sugimoto CR occupy the predominant position of first place 50% (12) Each person has personally written three articles 12.5% (3). The rest of the other six authors hold on the second place 50% (12), each one author individually has written two articles.

As per the chart report, No one occupies an individual place; all are sharing their positions.We can be seen two types of bars only in this graph. Out of ten bars, the first four bars are the same length, the rest of the other six bars are the same length. Out of the total ten appearing bars in the chart, the first four bars are a separate partand the remaining six bars are a different part. As per the report, we cannot find any particular author in this study.

TABLE II REPRESENTATION OF YEAR-WISE DISTRIBUTION OF LIS ARTICLES OUTPUT

S. No.	Year	Articles	% of 56
1	2017	15	26.786
2	2016	9	16.071
3	2015	6	10.714
4	2014	3	5.357
5	2013	12	21.429
6	2012	3	5.357
7	2011	5	8.929
8	2010	2	3.571
9	2009	1	1.786
	Total	56	100

Table II revealing that, the serial production of LIS publication. Ten years of our study taken into consideration; no record found in the year 2008. Over the past ten years the highest articles published in the year 2017. From 2009 to 2013 progressively increased and unexpectedly.

In 2014 the curve was traveling into three steps downward. During this period just three articles only indexed by the WOS database relate to LIS.

In subsequent years research output is doubled; after 2014, the curve line travels vertically upwards, it shows a significant development of LIS publications in the last three years.

TABLE III TOP 10 JOURNAL WISE LIS ARTICLE PUBLICATION

S. No.	Name of the Journals	Articles	% of 39
1	Scientometrics	14	35.8974359
2	Journal of the American Society for Information Science and Technology	5	12.82051282
3	Malaysian Journal of library Information Science	4	10.25641026
4	Desidoc Journal of Library Information Technology	3	7.692307692
5	Journal of Informetrics	3	7.692307692
6	Journal of the Association For Information Science and Technology	3	7.692307692
7	Nauchnye I Tekhnicheskije Biblioteki Scientific and Technical Libraries	3	7.692307692
8	Inted Proceedings	2	5.128205128
9	2013 IEEE International Conference on Big Data	1	2.564102564
10	7th International Technology Education and Development Conference Inted2013	1	2.564102564
	Total	39	100

Table III shows source thoughtful LIS articles publications and top ten sources taken for discussion. The first and foremost place occupied by Scientometrics Journal. The last decade the majority of LIS professionals turned into a scientometric study and involved their research on this topic. In the library science field the scientometric study has occupied its huge part; during this period emerging technology, introducing various analytical tools for such reasons attracted everyone's attention.

Hence, the Scientometrics journal gets the first place in this study, 35.9% (14). Followed by the Journal of the American Society for Information Science and Technology receives second place 12.82% (5); it is two times less than the first place. Malaysian library journal ranked in third place. After that, the Indian journal DESIDOC, Journal of Informatics and Journal of Association for Information Science and Technology occupied fourth place in this ranking. All the following journals are having only a couple of articles.

Table IV representing geographical wise publication output. All countries of the world are researching this subject; Top ten countries only are taken for this discussion. The USA is in first place with 24% (12). Next to that India is in second place with 12% (6). After that, Malaysia and Spain get third place with 10% (5). In this continuation Iran, Netherland,

China, and Russia are in the position of third with 8% (4). At the end of this table the Canada and England with 6% (3).

TABLE IV TOP TEN COUNTRY COLLABORATION OUTPUT

S. No.	Countries	Records	% of 50	Cumulative %
1	USA	12	24	24
2	India	6	12	36
3	Malaysia	5	10	46
4	Spain	5	10	56
5	Iran	4	8	64
6	Netherlands	4	8	72
7	Peoples R China	4	8	80
8	Russia	4	8	88
9	Canada	3	6	94
10	England	3	6	100
	Total	50	100	

## VI. LIMITATION

1. This study based on measurement of the LIS article growth and quantitative analysis of LIS articles in a

particular period. Also, that qualitative analysis makes a enrich.

2. The study is a confined period of Ten years from 2008 to 2017 and indexed by WOS. The key word “Library Science,” “Information Science,” and “Scientometrics” is used to download the results in a web of science database. At the result of this analysis, 56 records found; these records only were taken for the detailed study.

## VII. FINDINGS AND CONCLUSION

Scientometrics is concerned with the quantitative features and characteristics of science and scientific research. Emphasis placed on the investigation in which statistical, mathematical methods study the development and mechanism of science.

An overview of important findings of the analysis revealed that Out of 56articles published during the period 2008 - 2017, the maximum number of 15 (26.80%) articles was issued in 2017. Despite the fluctuations, it finally ends up in growth. 50% of articles published in Scientometrics journal and the USA is better than other countries because it is at the top with 24%. No one unique author found.

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