



AN INTEGRATED QUANTITATIVE MEASUREMENT OF LIS FOUR JOURNALS

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ABSTRACT

This study reflects the quantitative measurement of 535 articles appeared in LIS four reputed journals during 2007 to 2010. Different parameters of bibliometrics such as yearly distribution of publications; exponential growth rate, pagination pattern of publications carried out in this study. The study reveals various publication trends of these journals as a reflection of research output of Library Science discipline.

Keywords: - **Bibliometrics; Journal of Documentation (JDoc); Library Trends; JOLIS; LISR.**

1. Introduction

Research articles are considered as the key components in the academic field especially in the field of Sciences. The present research is carried out a study of few scholarly journals of general nature of high repute pertaining to the field of LIS. It was presumed that the journal literature containing the research papers in the field of Library and Information Science to reflect certain trends in the area of Library and Information Science (LIS) like growth trend, authorship trends, collaboration, subject trends etc. In this regard, the present study is an effort to measure the research productivity of four Library Science journals in terms of using various statistical tools, Scientometric methods and indicators.. The present study has been undertaken to shed lights on the growth of librarianship based on Scientometric analysis of four major scholarly journals of this discipline to provide an overview of this interdisciplinary discipline to the concerned community.



1.1 Bibliometrics

‘Bibliometric’ term is a combination of two words ‘Biblio’ and ‘Metrics’.Biblio is a Latin/Greek word refers ‘books’ and ‘metric’ refers ‘measurement’ which means the quantifying measurement to books or documents. The modern term ‘Bibliometric’ was coined by Alan Pritchard and defined it as “ the application of mathematical and statistical methods to books and other media of communication”. In fact, bibliometric techniques are used to distinguish the patterns of scholarly literature to get an insight into the dynamics of the particular discipline.It is interchangeably used to Scientometrics.

Now-a-days, Bibliometrics/Scientometrics are well-established research tools based on various metadata elements related to scholarly publications within a discipline for the better evaluation, measurement and organization of literature.

1.2 Source journals

The Journals which fall under this study are:

- Library & Information Science Research, Elsevier
- Journal of Documentation, Emerald
- Journal of Librarianship and Information Science, Sage
- Library Trends, The Johns Hopkins University Press

1.3 Objectives

- To explore yearly distribution of LIS four publications during 2007-2010;
- To investigate the AGR and EGR of LIS publications during 2007-2010;
- To find out pagination pattern of LIS publications during 2007-2010;

2. Review of related literature

Krishan and Baskaran (2018) in their study entitled “Scientometric analysis of the journal “Green Chemistry” examined the journal during 1999-2017. The data was obtained from the



SCOPUS database. The study explored the year wise distribution of articles, authorship pattern, form wise distribution of publications, growth rate and relative growth rate of publications.

Hajam (2017) in the research paper entitled “Scientometric analysis of Journal of Social Work from 2001 to 2010” studied the journal’s yearly productivity through various perspectives like volume wise, issue wise, author wise, institution-wise, country-wise etc..

Singh (2017) in the study entitled “Bibliometric analysis of DESIDOC Journal of Library and Information Technology during 2011-2015” has analysed DESIDOCf journal for five years with 310 papers. The study examined the yearly growth pattern of journal, special issues, authorship pattern, contribution at Indian and foreign level, “length of papers, cited references and subject wise distribution of published papers. .

Thanuskodi (2010) in the study entitled “Journal of Social Sciences : A bibliometric study” examined the distribution of articles in JSS year wise, subject wise, author wise, length wise, form wise and country wise from the year 2003-2007. The study revealed that 2007 was the most productive year and economics was the top subject

3. Data collection and methodology

The present study aims to analyze the publications of four journals. All the necessary data has been extracted from the SCOPUS database. The data was extracted from the SCOPUS using the strings of all four journal title with date range limit from 2007 to 2010. This study involves the analysis of journal’s research articles only and excluded other categories i.e. reviews, notes, editorial, letters etc. for a time- span of four years. All bibliographical information of articles of these four journals were exported in csv file format and analyzed by using the MS-Excel.

3.1 Annual Growth Rate”

. Annual growth rate is determined using the following formula;



$$\text{Annual Growth Rate} = \frac{\text{Ending value} - \text{Beginning value}}{\text{Beginning value}}$$

3.2 Ratio of Growth or EGR

EGR is determined using the following formula ;

$$\text{Ratio of Growth} = \frac{\text{No. of publications of present year}}{\text{No. of publications of prior year}}$$

3.3 Identification of pagination pattern of publications

To derive the pagination pattern of 535 publications, each article page was required to count .For this, following method used on the data set in microsoft excel 2010.

From main excel data file ‘page start’ and ‘page end’ columns were choosed for their total count. For this, ‘start page’ were subtracted from ‘end pages’ and added one by using this formula = (range of end page-range of start page +1).Then all article’s total pages were derived by using the formula.After that year - wise sorting done and total pages cell sorted ‘smaller to largest’ in different worksheet yearwise and counted the cells as per required criteria.

4 Data analysis

4.1 Data-detail

The analysis has been conducted on the integrated list of all four journal’s bibliographic data retrieved from the SCOPUS database during 2007 to 2010.The analysis is based on the journal’s publication as an indicator of Scientometric analysis. The table describes brief details of the data.

Table : 1 Basic data information of journals during 2007-2010

S.No.	Details about Data	JOLIS	JDoc	Library Trends	LISR	Total
1.	Study-Period	2007-2010	2007-2010	2007-2010	2007-2010	
2.	Time-Span	04 years	04 years	04 years	04 years	
	Total Publications	71	168	185	111	535

4.2 Yearly distribution of LIS publications

Table shows the year-wise distribution of articles of LIS journals from 2007 to 2010. A total of 535 articles were published during the study period in the journals covered under study. The table shows that LIS has decreasing trend in the percentage of growth of publication during the study period.

Table : 2 Yearly distributions of LIS publications

S.No.	Year	NP	%	Cumulative Total	Cumulative %
1	2007	151	28.22	151	28.22
2	2008	129	24.11	280	52.34
3	2009	128	23.93	408	76.26
4	2010	127	23.74	535	100.00
	Total	535	100.00		

*NP: No. of Publications

The total output of publications for the study period remained between 23.74 per cent to 28.22 per cent. However, most productive year was 2007 with 151 (28.22%) publications and the least productive year was 2010 with 127 (23.74%) publications.

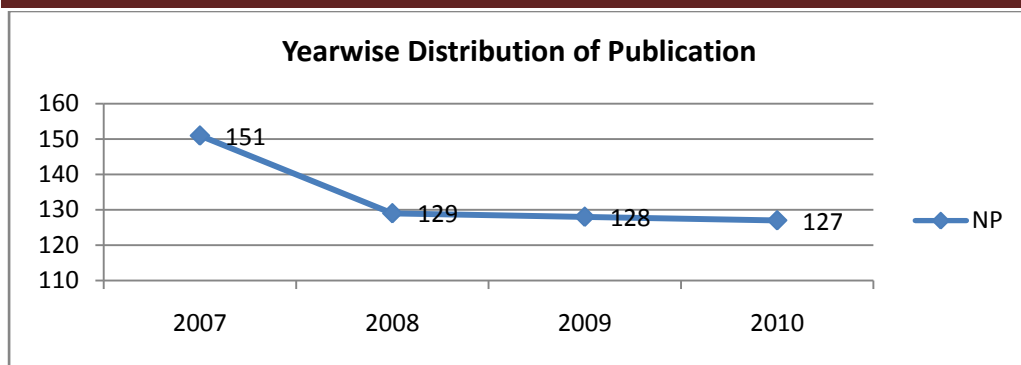


Figure : 1 Year-wise distribution

4.3 Arithmetic Mean

The arithmetic mean of all publications for the study period 2007-2010 has been calculated to be 133.75. It reveals that during the study period an average 133 publications were published per year in the selected LIS journals.

Table : 3 Arithmetic Mean

Year	2007	2008	2009	2010	Total	Average
Total	151	129	128	127	535	133.75

4.4 Annual Growth Rate

Table shows the annual growth rate of articles published during study period in LIS four journals. The table shows that annual growth rate in the years 2008, 2009 and 2010 is found negative as these years have less publications of their respective past years.

Table : 4 Annual Growth Rate

S. No.	Year	NP	AGR
1	2007	151	-
2	2008	129	-0.15
3	2009	128	-0.01
4	2010	127	-0.01
	Total	535	

The annual growth rate during the study period varies from -0.15 to -0.01.

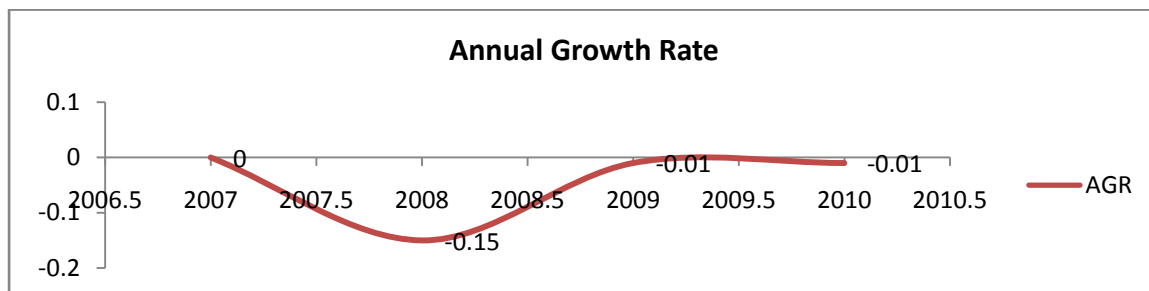


Figure : 2 Annual Growth Rate

4.5 Exponential Growth Rate of LIS publications

The exponential growth rate of LIS during 2007-2010 has been calculated and shown in table. The table shows that the exponential growth rate remained between 0.85 to 0.99 during the study period.

Table : 5 Exponential Growth Rate of LIS publications

S. No.	Year	NP	EGR (y_{t1}/y_{t0})
1	2007	151	-
2	2008	129	0.85
3	2009	128	0.99
4	2010	127	0.99
	Total	535	

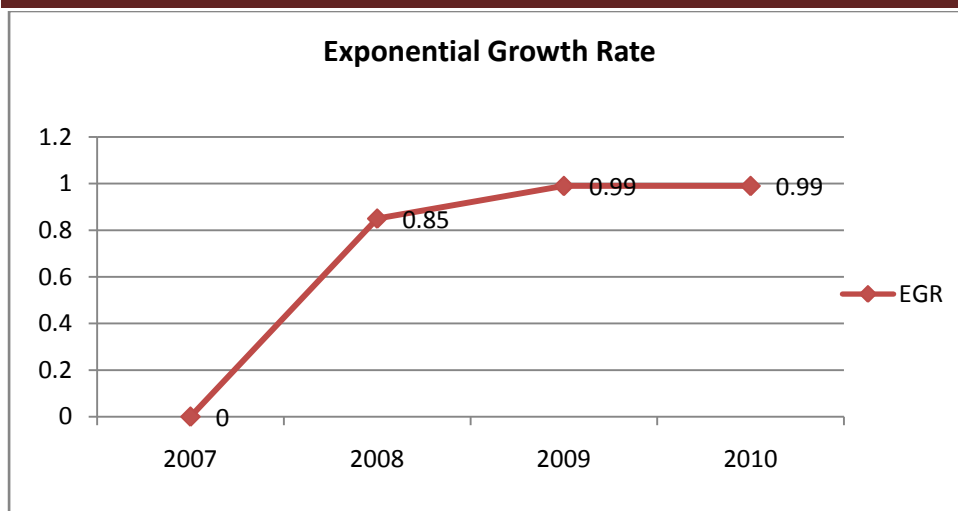


Figure : 3 Exponential Growth Rate

4.6 Year-wise pagination pattern of LIS publications

Table 5. shows the length of publications appeared in LIS discipline during 2007-2010.

Table : 6 Year-wise pagination pattern of LIS publications

Pages	1-10	11-20	21-30	31-40	Above 40	Total
2007	14	79	55	3	0	151
2008	37	62	25	4	1	129
2009	31	64	31	2	-	128
2010	33	61	31	2	-	127
Total	115	266	142	11	1	535
%	21.49	49.71	26.54	2.05	0.18	100

This Table shows that near about half of the articles 266(49.71%) were published in the page range from 11-20, followed by 142 (26.54%) articles with 21-30 page range and 115 (21.49%) with 1-10 page range. Only 11 papers published in the page range 31-40 and only 1 paper published in the page range above 40. It shows that 71.21 % of LIS publications have 1-20 pages.



Conclusion

The study concludes that Scientometric is similar to bibliometrics and is a powerful method to measure the progress or growth of any discipline quantitatively. It is a method which can provides direction of recent and future trends in any discipline. The study reveals that LIS has decreasing trend in the percentage of growth of publication during the study period. It reveals that during the study period an average 133 publications were published per year in the selected LIS journals. The annual growth rate during the study period varies from -0.15 to -0.01 and pagination pattern of LIS journal shows that 71.21 % of LIS publications have 1-20 pages.

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