Scientometric Analysis of "Annals of Library and Information Studies" (ALIS) (2010-2015)

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Abstract

This paper discuss with Scientometric analysis of the 'Journal Annals of Library and Information Studies (ALIS) during 2010-2015. The aim of the study is to find out year wise distribution, authorship pattern and proportion of single and multi author, degree of collaboration, country wise distribution and state wise distribution of publications in India. The maximum number of papers published in "Annals of Library and Information Studies" during the study period is 43 research papers published in 2010 and minimum number of papers are 27 in 2012

Keywords

Scientometric, Scientometric Analysis, authorship Pattern, Degree of Collaboration, ALIS.

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INTRODUCTION

Scientometric study is a branch of bibliometrics. It is an important research tools for understanding the subjects it aims at measuring the utility of documents and relationships between documents and fields. Scientometrics is a type of research method used in Library and Information Science. It is an application of mathematical and stastical methods of various aspects of literature on a topic and is used to identify the pattern of publication authorship and secondary journal coverage with the objective of getting an insight into the dynamics of growth of knowledge. It provides tools for the evaluation of scientific research. Scientometrics those most scientific discoveries and research results eventually are published in international scientific journal where they can be read and acted by other researchers. Scientometrics analyses have attracted much attention within the past years.

REVIEW OF LITERATURE

Suresh,C., Hema, R and Sankarsubramanian, N. (2015) their study an attempt is made to investigate the scholarly communication in the source journal 'Indian journal of Horticulture during 2010-2014. Scientometric analysis of the study the volume was taken into consideration of 714 articles published in source journal, out of 714 articles 233 (32.63%) of them published in 2010. 121(16.94%) of them published in 2014. It is evident from the table that highest 233(32.63%) articles published in the year 2010. 2013.Vijaykumar, P.(2014) he did the scientometric analysis of the journal 'Neurology India (2002-2011) his study stressed that scientometric techniques have been used extensively for distribution of contributors, authorship pattern, and degree of collaboration.Sangam,S.L., Liang Liming and Ganjahal (2009) their studies on modeling the growth of Indian & Chinese liquid crystals literature as reflected in science citation index (1997-2006).

OBJECTIVES OF THE STUDY

- To explore the year-wise distribution of the research publications.
- To observe authorship pattern.
- To examine the ranking of authorship pattern.
- To identify the proportion of single & multiple authored and degree of collaboration.
- To find out the country wise distribution of publications.

- To find out the state wise distribution of publications from India.

METHODOLOGY

The data for the study was taken from the online archive of the NISCAIR journal Annals of Library and Information Studies. For this study the volume of 57-62 (2010-2015) was taken into consideration. Data were collected with adequate details such as title of the article, name of the contributors and their address and affiliation details of each article. The collected data were analyzed for making observations.

LIMITATION OF THE STUDY

ALIS mainly publishes original papers, survey reports, reviews, short communications and letters pertaining to library science, information science & computer applications. The present study is limited for the period of 6 years including 6 volumes and 24 issues starting from the year 2010-2015.

RESULTS AND ANALYSIS

TABLE -1 Year- wise Distribution of Research publications

Sl. No.	Year	Volume Number	No. of Issues	No. of Articles	%
1	2010	57	4	43	19.9
2	2011	58	4	36	16.66
3	2012	59	4	27	12.5
4	2013	60	4	37	17.12
5	2014	61	4	35	16.2
6	2015	62	4	38	17.59
		6 Vol.	24 Iss.	216	

Table-1 shows that distribution of year wise articles published in the International journal of annals of library and information studies during the year 2010-2015. Out of 216 articles 43 (19.90%) of them published in 2010. 36(16.66%) of them published in 2011. 27(12.5%) of them published in 2012. 37(17.12%) of them published in 2013. 35(16.2%) of them published in 2014. 38 (17.59%) of them published in 2015. It is evident from the table that highest 43 (19.90%) articles published in 2010.

TABLE-2 Year Wise Authorship Pattern & their Percentage

Sl.No.	Year	Single Author	Two Author	Three Authors	More than three Authors	Total	%
1	2010	17	18	6	2	43	19.9
2	2011	14	14	7	1	36	16.66
3	2012	11	9	7	0	27	12.5
4	2013	12	18	4	3	37	17.12
5	2014	11	20	3	1	35	16.2
6	2015	18	14	4	2	38	17.59
Total		83	93	31	9	216	100



Table-2 indicates the year wise authorship pattern in the source journal. It is observed that totally 43 authors contributed in the year 2010. Totally 36 authors contributed in the year of 2011. 27 authors contributed in the year 2012. 37 authors contributed in the year 2013. 35 authors contributed in the year 2014. 38 authors contributed in the year 2015. It is observed from the table more authors 43(19.90%) contribution in the year 2010.

TABLE-3 Ranking of Authorship Pattern

Sl.No.	Rank	Authorship of Pattern	No. of Contribution	Percentage of Contribution	Cumulative Contribution	% of Cumulative Contributions
1	4	More than three Authors	9	4.16	9	4.16
2	3	Three Authors	31	14.35	40	18.51
3	1	Single Authors	83	38.42	123	56.94
4	1	Two Authors	93	43.05	216	100

Table-3 shows that ranking of the authorship pattern, it is observed from the table that two authored 93(43.05%) papers occupied 1st Rank. More than three authored papers 9(4.16%) occupied the 4th Rank in this study.

Table-4 Year Wise Single author Vs Multi author contribution and their percentage.

Sl. No.	Year	Single Author	Multi Author	Total
1	2010	17(7.87)	26(12.03)	43(19.90)
2	2011	14(6.48)	22(10.18)	36(16.66)
3	2012	11(5.09)	16(7.40)	27(12.5)
4	2013	12(5.55)	25(11.57)	37(17.12)
5	2014	11(5.09)	24(11.11)	35(16.20)
6	2015	18(8.33)	20(9.25)	38(17.59)
Total		83(38.42)	133(61.57)	216(100

Table-4 Shows that Single author and Multi author contribution in this journal. It is found that 38.2% of the papers are published by single author and 61.57% of the papers are published by multiple authors during the study period.

DEGREE OF COLLABORATION

The degree of collaboration is defined as the ratio of the number of collaborative research papers to the total numbers of research papers in the discipline during the certain period of time. The formula suggested by subramanyan is used in this study.

$$C = \frac{Nm}{Nm+Ns}$$

C = Degree of Collaboration
Nm = Number of Multiple Authors
Ns = Number of Single Author

TABLE-5 *Degree of collaboration*

Sl.No.	Year	Degree of Collaboration
1	2010	0.6
2	2011	0.61
3	2012	0.59
4	2013	0.67
5	2014	0.68
6	2015	0.52

able-5 Shows that degree of collaboration in the journal. Among six years of the study period the highest degree of collaboration occurred during the year 2014.

RELATIVE GROWTH RATE

The relative growth rate and doubling Time model was developed by Mahapatra and applied to examine the relative Growth Rate of research publications. The relative Growth rate is increased n the number of publications or pages per unit of time and can be calculated from the following equations.

$$R(1\text{-}2) = \overline{\frac{W_1 + W_2}{T_2 - T_1}}$$

Where, R(1-2) is mean Relative Growth Rate over the specified period.
W_1=Log W_1: (Natural log of initial number of Publications/Pages)
W_2 =Log W_2 :(Natural log of final number of Publications/Pages)
$T_2 - T_1$= the unit difference between the Initial time and Final time
The relative Growth rate for both publications and pages can be calculated separately. Therefore,

R (a) = Relative growth rate per unit of time (Year)
R (p) = Relative growth rate per unit of pages, per unit of time (Year)

DOUBLING TIME

From the calculation, it is found that there is a direct equivalence existing between the relative Growth rates and Doubling time. If the numbers of Publications/ Pages of a subject doubles during the given period, then the difference between the logarithm of the numbers at the beginning and at the end of the period must be the logarithms of the number two. If one uses natural logarithm, this difference has a value of 0.693. The corresponding doubling time for publications and pages can be calculated by using the following formula:

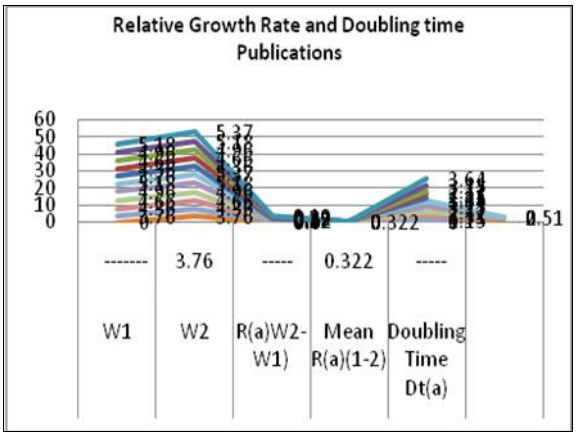
$$\text{Doubling Time (Dt)} = \frac{0.693}{R}$$

Therefore, Doubling time for publication of Data $Dt(a) = \frac{0.693}{R(p)}$

$$\text{Doubling time for pages Dt (p)} = \frac{0.693}{R(p)}$$

TABLE-6 Relative growth rate and doubling time for publications

Year	R.O/P	Cumulative O/P	W1	W2	R(a)W2-W1)	Mean R(a)(1-2)	Doubling Time Dt(a)	Mean Dt(a) (1-2)
2010	43 (19.90)	43 (19.90)	-------	3.76	-----	0.322	-----	2.51
2011	36 (16.66)	79 (36.57)	3.76	4.36	0.6		1.15	
2012	27 (12.5)	106 (49.07)	4.36	4.66	0.3		2.31	
2013	37 (17.12)	143(66.20)	4.66	4.96	0.3		2.31	
2014	35 (16.20)	178 (82.40)	4.96	5.18	0.22		3.15	
2015	38 (17.59)	216 (100)	5.18	5.37	0.19		3.64	
Total	216 (100)							



A study of data in table 6 indicates that relative Growth rate and doubling time for publications of the Source journal. It is clear that relative Growth rate of total research output is decreased gradually. The growth rate is 0.6 in 2011 and which decreased up to 0.19 in 2015. The mean relative Growth rate for periods of 2010-2015 the relative growth rate is 0.322. This study period resulted that the mean doubling time for total output is 2.51.

TABLE-7 Country wise Distribution of Publications

Sl.No.	Name of the Country	No.of Contributions	%
1	India	165	76.38
2	Nigeria	18	8.33
3	Srilanka	10	4.29
4	Bangladesh	7	3.24
5	Belgium	4	1.85
6	U.S.A.	3	1.98
7	Netherland	2	0.92
8	Iran	2	0.92
9	Uganda	1	0.46
10	Malasia	1	0.46
11	Tanzania	1	0.46
12	Australia	1	0.46
13	Russia	1	0.46

Table-7 shows from the table we can get country wise distribution of research articles published in the journal during the period 2010-2015. During the analysis it has been observed that most of the articles contributed from India. It is observed that highest number of contributions are belong to India with 165 articles out of 216 total articles published and its

percentage is 76.8% and it is followed by Nigeria with the publication of 18 articles with the percentage of 8.33% other countries like Srilanka 10(4.29%) and Bangladesh 7(3.24%) are contributed respectively.

TABLE-8 State Wise Distribution of Publication from India

Sl.No.	Name of the State	No.of Contributions	%
1	New Delhi	55	33.33
2	West Bengal	24	13.38
3	Karnataka	16	9.69
4	Maharastra	12	7.27
5	Kerala	8	4.84
6	Uttarpradesh	8	4.84
7	Jammu&Kasmir	6	3.63
8	Himachal Pradesh	5	3.03
9	Tamilnadu	4	2.42
10	Rajasthan	4	2.42
11	Punjab	4	2.42
12	Jharkand	3	1.38
13	Assam	2	1.81
14	Odissa	2	1.81
15	Gujarath	2	1.81
16	Chattisgarh	2	1.81
17	Andrapradesh	1	0.6
18	Madhyapradesh	1	0.6
19	Sikkim	1	0.6
20	Puducherry	1	0.6
21	Mizoram	1	0.6
22	Manipura	1	0.6
23	Chandigarh	1	0.6
24	Haryana	1	0.6

From the table-8 it has been observed State wise distribution of articles. It is observed that highest number of contributions are belong to New Delhi with 55 articles out of 165 total articles published and its percentage 33.33 % and it is followed by West Bengal with the publication of 24 articles with the percentage 13.33% other states like Karnataka 16(9.69) are contributed respectively.

FINDINGS

- It is evident from the table that highest 43 (19.90%) articles published in the year 2010.
- 83(38.42%) of single Author, 93(43.05%) of two authors, 31(14.35%) of three authors, 09(4.16%) of more of than three authors paper published during the study period.
- Two authored paper 93(43.05%) occupies the 1st Rank. Single Author paper 83(38.42%) comes in 2nd Rank. Three authored paper 31(14.35%) comes in 3rd Rank.
- It is found that 38.42% of the papers are published by single author and 61.57% of the papers are published by multi author during the study period.
- The highest degree of collaboration occurred during the year 2013 and 2014.
- The growth rate is 0.6 in 2011 and which decreased up to 0.19 in 2015. The mean relative growth rate for periods 2010 to 2015 the relative growth rate is 0.322. this study period resulted that the mean doubling time for total output is 2.51.
- It is observed that highest number of contributors are belong to India with 165 articles out of 216 total publications published and its percentage 76.38% and it is followed by Nigeria with the publications of 18 articles with the percentage 8.33%. other countries like Srilanka 10(4.29%) and Bangladesh 07(3.24%) are contributed respectively.

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