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Scientometric Analysis of DESIDOC Journal of Library and Information Technology During 2007-2014

Abstract

DESIDOC Journal of Library and Information Technology published by the Defense Scientific Information and Documentation centre (DESIDOC), a prime national documentation center of defence research development organization (DRDO) have several activities related to information and documentation. The paper brings out the results of a Scientometric study covered in the issues of DESIDOC Journal of Library and Information Technology during 2007-2014. An analysis of 418 research papers published during the period (2007-2014). Maximum number of articles (63) was published in 2013. The maximum authorship pattern by year and volume, single and multi-authored papers by year and degree of collaboration. The study shows a trend of growth in contribution and average number of contributions is 52.25 per volume.

Keywords: Scientometrics, Bibliometrics, Desidoc, Drdo, Documentation Centre.

Introduction

Periodicals are the most preferred medium of latest information. Journals are an important medium of communication for researchers. They bring the latest knowledge to the notice of researchers. Libraries play the roles of both knowledge accumulator and disseminator. Libraries are the only source that generally identify, acquire and disseminate the information. The terms Scientometrics were introduced by Nalimon and Mulchenko in 1969. Scientometric analysis confined to quantitative aspects of science and technology disciplines. Future scientometric could be used for identification of emerging research areas. Scientometric analysis throws light on the pattern of growth of individual to the respective science and technology subject inter relationship among different branches of knowledge, productivity, authorship pattern. Degree of collaboration and their use. Sengupta¹ viewed Scientometric as "Organization classification and quantitative evaluation of publication patterns of all macro and micro communication along with their authorship by mathematical and statistical calculus.

Objective

This paper has the following objectives –

1. To find out year wise distribution of papers.
2. To find out nature of authorship pattern.
3. To find out degree of collaboration.
4. To find out special issues subject wise distribution of paper.

Scope & Coverage

The Scope of the study is DESIDOC Journal of Library and Information Technology (DJLIT), formerly known as DESIDOC Bulletin of Information Technology is a peer – reviewed, open access, bi monthly, journal published from 1981. Defense Scientific Information and Documentation centre (DESIDOC), a prime national documentation center of defence research development organization (DRDO) has several activities related to information and documentation. One of the core activities of DESIDOC is to bring out the world-class scientific and technical publication covering current development in the India defense R&D and Information technology, DESIDOC Journal of Lib. & Inf. Technology, highlight the application of current information technology to library and information activities and services. It also covers research and development in the field of library & information science.

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Review of Literature

Various authors have done Scientometric/Bibliometric of paper published in various Journals in different fields

1. Manoj Kumar & Moorthy (2011) has done a Bibliometric study of DESIDOC Journal of library and information technology during 2001-2010. The analysis covers various parameters like growth pattern, Content coverage, authorship patterns, subject wise distribution of articles etc.
2. Bansal (2013) have done a DESIDOC journal of library and information technology: A Bibliometric analysis. It is found that 391 papers were published during the period of study (2001-2012). Bibliometric analysis of the journal assess the pattern of growth of the research output published in journal, pattern of authorship and geographical distribution of output, subject covered and citation analysis of the references attached to papers and change in them one over two different period (2001-2006) and (2007-2012).
3. Sankari & Chinnaswamy (2012) have been studied Scientometric analysis of 436 paper published in the Indian Journal of Biotechnology during the year 2004-2008 are taken up and analyses based on various parameters such as year wise distribution of papers. Authorship

productivity, geographical distribution of contribution etc.

4. Narang (2004) have been studied Indian journal of pure and Applied Mathematics a Bibliometric analysis of 8396 citations appeared to 737 articles published in 1998-2002 carried out to observe the distribution of contributions, authorship pattern, citation analysis, geographical distribution of contributions and number of pages used in each volume.
5. Thavamani (2014) this paper focus on Bibliometric analysis of the DESDOC journal of Library and information technology for the year 2007-2011 to identify the growth and authorship pattern of productivity of articles the relation growth Rate (RGR) and degree of collaboration.

Methodology

The source journal is a open access journal and is available on the DEDO website publications. drdo.gov.in/OJS/index.php/djlit. The data for the study was downloaded from the website for 8 years from volume 27 (2007) to volume 34 (2014).

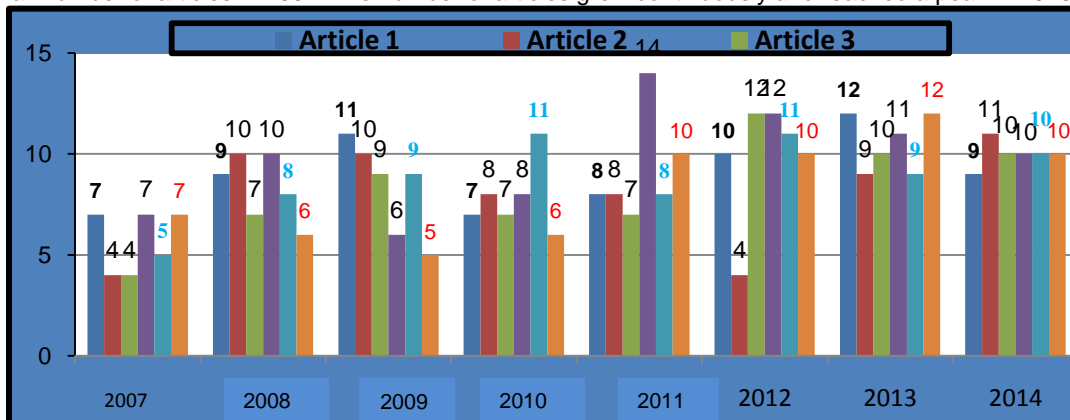
Analysis and Interpretations

The total number of papers published in eight year (2007-2014) is 418. The observed data are clearly tabulated and figured in the following pages. Year wise publication .

Table-1 : Articles

S.No.	Year	Volume Numver	Issue wise Articles						Total	%
			1	2	3	4	5	6		
1	2007	27	7	4	4	7	5	7	34	8.13%
2	2008	28	9	10	7	10	8	6	50	11.96%
3	2009	29	11	10	9	6	9	5	50	11.96%
4	2010	30	7	8	7	8	11	6	47	11.24%
5	2011	31	8	8	7	14	8	10	55	13.16%
6	2012	32	10	4	12	12	11	10	59	14.11%
7	2013	33	12	9	10	11	9	12	63	15.07%
8	2014	34	9	11	10	10	10	10	60	14.35%
			73	64	66	78	71	66	418	100%

Figure-1: Show the pattern of growth of articles over the period of study. It indicates that with a small number of articles in 2007. The number of articles grew continuously and reached a peak in 2013.



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Authorship Pattern

Table-2 : Authorship Pattern of Contribution

No. of Authors	No. of Contribution	%
One	166	39.71%
Two	168	40.19%
Three	60	14.35%
More then Three	24	5.74%
Total	418	100%

Figure-2: Graph Showing Authorship Pattern

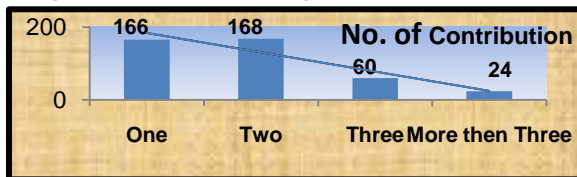


Figure-2: Shows that the contribution of double authors is more than those of single, triple or more than triple authors. The multiple authorship patterns have the most productive publication i.e. 252 (62.28%). Papers while the single authorship pattern has 106 (39.71%) papers. The multiple authorship pattern are father analyze to shed more light on the pattern of collaboration. Publications with two authors are 168 (40.19%) paper. Followed by three authorship pattern with 60 papers and more than three authorship pattern have 24(5.74%) papers.

Table-3 : Authorship Pattern of Contribution (Volumes Wise)

Volume	Volume Numver	%	Tow Auhor	%	Three Author	%	More than Three Author	%	Total
2007	18	10.84%	07	4.17%	07	11.67%	02	8.33%	34
2008	31	18.67%	11	6.55%	4	6.67%	04	16.67%	50
2009	18	10.84%	18	10.71%	11	18.33%	03	12.50%	50
2010	14	8.43%	24	14.29%	6	10.00%	03	12.50%	47
2011	21	12.65%	25	14.88%	6	10.00%	03	12.50%	55
2012	18	10.84%	29	17.26%	10	16.67%	02	8.33%	59
2013	28	16.87%	26	15.48%	7	11.67%	02	8.33%	63
2014	18	10.84%	28	16.67%	9	15.00%	05	20.83%	60
TOTAL	166	100%	168	100%	60	100%	24	100%	

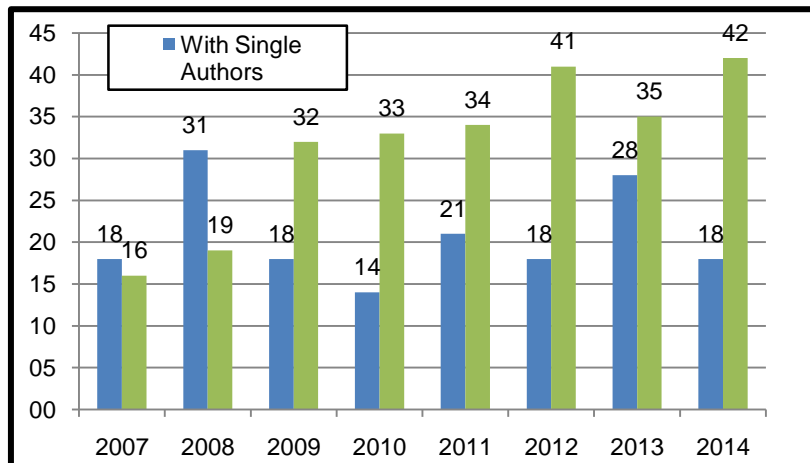
The above table shows the trends in authorship pattern, as multi authored papers are leading in frequency of occurrence in the journal "DESIDOC Journal of Library & Information Technology" throughout the study and more interestingly this growth is continues which indication about the future pattern in authorship.

The highest number in contributions in the category of single authorship are contributed in year 2008 which are 31 out of 166 single authored. Papers while in the category of multi authored Paper the highest number of contributions is contributed in the Year 2012 having 29 (17.26%) contribution out of 168 contributions.

Table-4 : Single Authored Vs Multi Authored Papaer

Year	With Single Authors		With Multi Authors		Total Contrubution
	No. of papers	%	No. of papers	%	
2007	18	10.84%	16	9.52%	34
2008	31	18.67%	19	11.31%	50
2009	18	10.84%	32	19.05%	50
2010	14	8.43%	33	19.64%	47
2011	21	12.65%	34	20.24%	55
2012	18	10.84%	41	24.40%	59
2013	28	16.87%	35	20.83%	63
2014	18	10.84%	42	25.00%	60
TOTAL	166	100%	252	150%	418

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The above graph shows that in every volume of the journal 'DESIDOC' Journal of Library & Information Technology, The numbers of multi authored papers are dominating to single authored papers. The overall multi authored papers are more than two times of single author papers. It reveals that now the library and information science field is heavily influence by the collaborative research.

Degree of Collaboration

The degree of collaboration among author is measured by the following formula give by K. Subranamyam:

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

Where,

C=Degree of Collaboration

Nm=Number of Multi Authored contribution

Ns=Number of Single Authored Contribution

In the Present study the Value of C is

$$C = \frac{252}{252 + 166} = \frac{252}{418} = 0.61\%$$

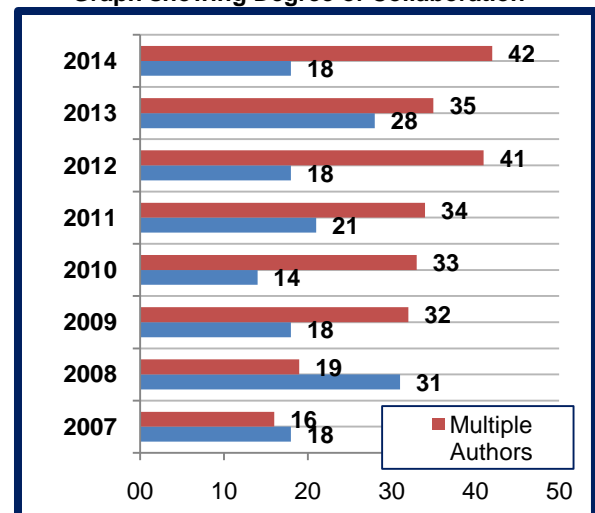
Thus the degree of collaboration in the Journal 'DESIDOC' Journal of Library & Information Technology is 0.61 this brings out clearly the prevalence of team research in library and information Science field. The distribution of degree of collaboration over the year from 2007 to 2014 is presented in Table 5.

Table-5 : Year Wise distribution of Degree of Collaboration

Year	Single Authors	Multiple Authors	Degree of Contribution
2007	18	16	0.88%
2008	31	19	61.00%
2009	18	32	56.00%
2010	14	33	54.00%
2011	21	34	61.00%
2012	18	41	43.00%
2013	28	35	81.00%
2014	18	42	42.00%
TOTAL	166	252	

The degree of collaboration in the Journal 'DESIDOC' Journal of Library & Information Technology over the period of study varied from 0.42 to 0.88.

Graph showing Degree of Collaboration



This graph shows the distribution of degree of collaboration over 2007 to 2014 in the 'DESIDOC' Journal of Library & Information Technology' The degree of collaboration is highest in the Year 2007 while it is lowest in the year 2014.

Special Issue

Table-6 shows the details of special/thematic issues of Desidoc journal of library & information technology brought out during 2007 – 2014 under the guest editorship of eminent LIS professional both from academia as well as research and development organization institution. Out of 48 issues published during 2007-2014 onwards. The journal published a number of special / thematic issues quite regularly. The journal maximum number (5) special issues in 2012.

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S.No.	Year	Issue No.	Theme/ Title	Guest editors
1	2007	Vol.27, No.1	Measurement of Indian S&T	B.M. Gupta & S.M. Dhawan
		Vol.27, No.2	Lib. & Inf. Science & Education in India	Prof. C.R. Karisiddappa
		Vol.27, No.4	Intellectual property right part-I	A.L. Moorthy
		Vol.27, No.6	Intellectual property right part-II	A.L. Moorthy
2	2008	Vol.28, No.1	Open Access	Usha Mojoo Munshi
		Vol.28, No.2	Information Literacy	C.R. Karisiddappa
		Vol.28, No.4	Online Exhibitions	Chennupati K. Ramaiah
		Vol.28, No.5	Knowledge sharing	M. Natarajan
3	2009	Vol.29, No.2	Social Science & gateway	P.R.Goswami
		Vol.29, No.5	Library Consortia	A.L. Moorthy
4	2010	Vol.30, No.5	100 Years of LIS Education	Dr. Jaideep Sharma
5	2011	Vol.31, No.2	Ontology	Pratibha A. Gokhale
		Vol.31, No.4	Semantic Web	Sumit Goswami
		Vol.31, No.5	Scientometrics	Gungan Pratap & B.M. Gupta
6	2012	Vol.32, No.1	Agricultural Information system & Services in India	K. P. Singh
		Vol.32, No.2	E-Books	-
		Vol.32, No.3	Intellectual Property Rights	Anil W. Hirwade
		Vol.32, No.4	Digital Presentation	Ramesh C. Gaur
		Vol.32, No.5	Open source Software for Librarian	Shalini R. Linitkar
7	2013	Vol.33, No.1	Corporate Social Responsibility & Public libraries	P.S.N. Murthy
		Vol.33, No.2	Health Information Systems & Services	H.S. Siddamallaiiah
		Vol.33, No.4	Knowledge Organisation	Jagtar Singh
8	2014	Vol.34, No.2	Trends on Online exhibitions	Chennupati K. Ramaiah
		Vol.34, No.3	Indian contribution in scientometrics	B.M. Gupta
		Vol.34, No.6	Embedded Librarianship : Changing Role of Librarian in Digital Age	Ramesh Chand Gaur

Conclusion

The following conclusion can be drawn from the "DESIDOC Journal of Library and Information Technology (2007-2014) : A Scientometric study"

1. This Study shown a trend of growth in contribution published during 2007 to 2014 and average number of contribution per volume 52.25
2. Majority of the library and Information Scientist prefer to contribution their paper jointly.
3. Fifty six issues brought out during the period 25 special issues from eminent LIS professionals. The journal has published thematic issues at on average of 3 every year since 2007. The journal maximum number (5) special issues in 2012
4. The degree of collaboration in the Journal 'DESIDOL' Journal of Library & Information Technology is 0.61.

Reference

1. Kumar, Manoj and A.L. Moorthy (2007) "Bibliometric Analysis of DESIDOL Journal of Library and Information Technology during 2001-2010. DESIDOC Journal of Library and Information Technology Vol. 31(3):205.
2. Narag, Asha and Sukhdev Singh 20. "Bibliometric Analysis of Indian Journal of Pure and Applied mathematics (1998-2012)" SRELS Journal of Information Managements Vol. 51(2) :28.
3. Subramanyam K. (1983) "Bibliometric Studies of Research Collaboration: a review. Journal of Information Science Vol. 6(3).

4. Sengupta, I.N. (1990) " Bibliometric and its applications in information science and libraries" edited by Pushpa Dhyani. New Delhi: Atlantic. p256.
5. Thavamani, K. (2013) " Bibliometric analysis of the DESIDOC Journal of Library & Information Technology for the year 2007-2011. Inter. Journal Information Dissemination Technology. Vol.3 (1):36-41
6. DESIDOC Journal of Library and Information Technology. publications.drdo.gov.in/ojs/index.php/djlit/.