Scientometric Analysis of Pearl: A Journal of Library and Information Science

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Abstract - *The study is based on the Scientometrics analysis of 171 research articles published during the periods of 2011 - 2015. This study will review on Author Productivity ,Co-Author pattern wise, country-wise distribution, volume wise, year wise, relative growth rate and doubling timing etc. and further it reveals Majorities 171 articles are published by Indian countries and alternative countries.*

Keywords: Scientometric analysis , Pearl journal of library and information science

Introduction:

Now a day's Scientometric is one of the truly interdisciplinary research fields extended to almost all scientific fields. Scientometric applications are used to measure scientific activities, mainly by producing statistics on scientific publications indexed in databases. Scientometrics is the branch of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Also Scientometric studies characterize the disciplines using the growth pattern and other attributes. These applications are extremely valuable methods for evaluating research output, to know about the author productivity and citation analysis in science and technology. Further Scientometric tools can be used to measure and describe countries, universities, research institutes, journals, specific research topics and specific disciplines (Singh, 2014).

Review of Literature:

Scientometric / Bibliometric / Citation studies have done earlier by different authors on the different individual journal publications and literature on specific subject areas. The following studies related to the objectives of this study have been reviewed.

SrimuruganA&Nattar S analyzed the D-LIB magazine published during 2000 –2007 which revealed that highest number of paper was published in 2005 and the lowest in2007.

Vijay K R &Raghavan I analyzed the Journal of Food Science &Technology published during 2000 – 2004 and found that above 93% of contributions were by multiple authors. Khaparde V S (2011) she studied the pattern of information use by researcher in the field of library and information science. It is based on the references appended to International Journal of "Library Hi Tech" during 2005-2009. The present study is based on 3876 references appended to 247 articles contributed by the authors Library Hi Tech. In Authorship pattern it was found that Solo Research is Predominant than Collaborative Research. The degree of research collaboration was calculated and it was found that the single authorship trend increased gradually in Library Hi Tech.

Khaparde V S (2011) stated in study "Bibliometric Study of Electronic Journal of Academic and Special Librarianship." that single author contributions have dominated the journal with 47.95% of contributions, and in geographical based distribution of articles India have occupied the top position with 28.41% publications.

Khaparde V S (2013) her paper conducted the Bibliometric Analysis of Research Publication of Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, from 1975 to 2012. 774 research publications were analysed from 144 journals. The study examines year-wise distribution of papers, authorship pattern, journal in which author published

Fawaz Alhamdi and Khaparde V S (2015) Analyzed Authorship pattern in cloud computing research in LISTA . They collect 108 articles during the year 2009 to 2013.In this study the number of contributions found to be the highest is 24 in the year of 2012. The rate of growth of publication highly decreased from the rate of 0.693 in 2010 to 0.193 .in 2013 whereas the orresponding the Doubling time for different years gradually increased from 1 in 2010 to 3.95 in 2013.

(Khaparde & Pawar) studied the authorship pattern and author's collaborative research in Information Technology with a sample of 17917 articles collect from LISA during 2000-2009.The average number of authors per article is 1.80. In the study the degree of collaboration (C) during the overall 10 years (2000-2009) is 0.71 but the year wise degree of collaboration is almost same in all the years of mean value 0.49. According to 10 years of period, the multi-authorship articles are higher and predominant on single authorship. The study found that the researches in Information Technology are keep toward team research or group research rather than solo research.

(Alhamdi, Khaparde & Kanekar, 2014) The present study deals a Scientometric analysis of 56 papers published in the Library and Information science & Technical Abstract (LISTA) on internet use in the subject of library &Information science during the period 2004 - 2013. The study focused on various aspects: such as document types, growth Rate (GR) and doubling time (DT) of publications and citations, year-wise, authorship pattern, institutions involved, most

prolific authors of the journal. The study revealed that most of the papers (71.4%) of papers were contributed by multiple authors. USA is the top producing country with 8 (14.3%) publications of the total output. All the articles were published in English language. The mean doubling time for the first five years (i.e. 2004 to 2008) is only (1.05) which is increased to (6.07) during the last five years (2009 to 2013). Maximum 35 (62.5%) out of 56 of the authors are not mentioned their email address in the paper.

(Tupe S.K & Khaparde V.S , 2016) The Present study deals a Scientometric analysis of 4813 references appended to 217 articles contributed by the authors in Information Technology and Libraries on DOAJ. during the period of 2005-2014.The study examines Authorship Pattern ,Relative Growth Rate and Doubling Time of Articles ,Year wise degree of collaboration It is seen that the single authorship trend in increasing. The study revealed that most of the articles (57.14%) of articles were contributed by single authors. USA is the top producing country with 178 (82.03%) publications of the total output. The mean relative growth rate for the last five years 2010 to 2014 reduced to (0.13). While the Doubling time for different years [Dt(p)]gradually increased from (1.00) in 2006 to (7.70) in 2014. The mean doubling time for the first five years (i.e. 2005 to 2009) is only (1.69) which is increased to (5.69) during the last five years (2010 to 2014). The maximum references used print references i.e.3154 whereas 1659 references were web references.

About the Journal

The prime objective of the PEARL is to tap the writing skills of library Professionals, especially those who are working in rural areas and professionals in general. PEARL is a quarterly, reviewed/research journal published four times a year in March, June, September and December. It will publish original articles of library and information science, covering the recent developments in information technology, its application, and inter disciplinary areas relevant to LIS, and also all professionals' issues.

Scope and limitations

The present study is based on 5 volumes, 20 issues of the pearl journal of library and information science 2011 - 2015.

Data collection

The Data were collected from pearl journal of library and information science 5 volumes, 20 issues of the during Period in 2011-2015. The data has been analyzed by using the Microsoft Excel Sheet as per the objectives of the study.

Objectives of the Study

1.   To study the Author's Productivity
2.   To find out Distribution of contribution (Volume wise).

3.   To analyze Co - Authorship Pattern of contribution.
4.   To identify Relative Growth Rate (RGR) and Doubling Time (DT) of Articles.
5.   To analyze Year wise Degree of Collaboration.
6.   To Find out Country wise Distribution of contributions.

Data Analysis & Interpretation

	Table No.1 Author Productivity			
Year	**Total No. of Articles**	**Total No. of Author**	**AAPP**	**PPA**
2011	43	80	1.86	0.54
2012	31	59	1.90	0.53
2013	33	91	2.76	0.36
2014	27	43	1.59	0.63
2015	37	66	1.78	0.56
Total	**171**	**339**	**1.98**	**0.50**

The data pertaining to author productivity has presented in the Table No.1 shows that the total average number of authors per paper is 1.98 for the relatively equal average number of authors per article when compared the total average number of authors per article. The average productivity per author is 0.50 during the year 2011 – 2015. Productivity has been calculated with the following formula. Average Authors Per Paper = No. of Authors / No. of Papers Productivity Per Author = No. of Papers / No. of Authors.

	Table No.2 Distribution of contribution (Volume wise)			
Year	**Vol No**	**No. of issue**	**No. of contributions**	**%**
2011	5	4	43	25.15
2012	6	4	31	18.13
2013	7	4	33	19.30
2014	8	4	27	15.79
2015	9	4	37	21.64
Total	**35**	**20**	**171**	**100**

The Distribution of contributions (Volume- wise) is shown in Table No. 2 out of the total 171 contributions majority of the contributions i.e. 43 (25.15%) contributions were contributed in 2011. were as minimum contributions i.e. 27 (15.79%) contributions were contributed in 2014.

Table No.3 Co - Authorship Pattern of contribution					
Year	Author Nature	Frequency	Total	Percentage	Cumulative
2011	Single Author	19		45	**45**
	Co - Authors	23	**42**	55	**100**
2012	Single Author	10		32	**32**
	Co - Authors	21	**31**	68	**100**
2013	Single Author	12		36	**36**
	Co - Authors	21	**33**	64	**100**
2014	Single Author	13		48	**48**
	Co - Authors	14	**27**	52	**100**
2015	Single Author	16		42	**42**
	Co - Authors	22	**38**	58	**100**
Total			**171**		

It is observed from the Table No.3 that the value of Co- Authorship Pattern for Single authored papers during 2011-2015 was highest with 19 publications (45%) in 2011 and the same year Co - Authorship Pattern for multi authored papers highest with 23 publications (55%) , which indicated that the collaborative research is increasing over the study of "Scientometrics".

Table No. 4 Relative growth rate & Doubling timing of articles								
Year	No. of articles	Cumulative	W1	W2	RGR	Mean	DT	Mean DT
2011	43	43	-	3.76	-		-	
2012	31	74	3.76	4.30	0.54		1.28	
2013	33	107	4.30	4.67	0.37	0.28	1.87	1.81
2014	27	134	4.67	4.90	0.23		3.01	
2015	37	171	4.90	5.14	0.24		2.89	

From the Table No.4 and it noticed that the mean relative growth for the five years 2011 to 2015 is (0.28), While the Doubling time for different years [Dt(p)] gradually increased from (3.01) in 2014 to (2.89) in 2015. The mean doubling time for the five years (i.e. 2011 to 2015) is only (1.81). Thus as the rate of growth of publication was decreased, the corresponding Doubling Time was increased.

Year	Total No. of Articles	No. of single Authored Articles	% of Articles	Multi Authored articles	% of Articles	Degree of collaboration
Table No. 5						
Year wise degree of collaboration						
2011	43	19	0.111	23	0.135	0.53
2012	31	10	0.058	21	0.123	0.68
2013	33	12	0.070	21	0.123	0.64
2014	27	13	0.076	14	0.082	0.52
2015	37	16	0.094	22	0.129	0.59
Total	**171**	**70**	0.409	**101**	0.591	0.59

In order to determine the strength of Collaboration (DC), the following formula suggested by Subramanyam K [19] has been employed.

$$C = \frac{NM}{NM + NS}$$

Where,   DC = Degree of Collaboration
           NM = Number of Multiple Authored Papers
           NS = Number of Single Authored Papers

The Degree of Collaboration of authors by year wise is presented in the Table No. 5. The degree of collaboration ranges from 0.52 to 0.68. The average degree of collaboration is **0.59** during the period 2011 – 2015 and it brings out clearly that there exists a higher level of collaboration in the journal.

Sr.No	Country	Frequency	%
Table No. 6			
Most productive Countries of the articles			
1	India	155	90.64
2	Nigeria	8	4.68
3	Africa	2	1.17
4	Bangladesh	1	0.58
5	Iran	1	0.58
6	Jordan	1	0.58
7	Kingdom of Saudi	1	0.58
8	Sri Lanka	1	0.58
9	UAE	1	0.58
	Total	**171**	**100**

It can be observed from Table No. 6 that majority of articles 155 (90.64%) have been contributed form India. Following to these, countries from Nigeria has contributed 8 articles (4.68%) and Africa 2 (1.17%). 6 Countries namely Bangladesh, Iran , Jordan , Kingdom of Saudi , Sri Lanka and UAE with 1 contributions (0.58 %) each.

Findings

The findings are based on the analysis of collected data appended in 171 articles.

1. The highest number of authors per paper is 1.98.
2. The majority of the contributions (Volume wise) 43 (25.15%) in the year 2011 .
3. Single authorship articles are higher and predominant than multi author. The multi authored articles are highest in the year 2011.
4. Majority of the contributions are contributed by India.

Conclusions

Scientometrics relatively new subject of information. It helps to evaluate information & to handle the information in libraries and information centers by the quantitative analyzed information. It deals with the mathematical and statistical analysis. This is an umbrella term used for many studies where quantitative method or techniques are used to investigate various aspect of written document. This study is completed with the help of MS -Excel. This study is helpful for researchers as well as information scientists. it is good and informative for the researcher.

References :

1. Alhamdi, F.A., Khaparde,V S .,& Kenekar,B.V.(2014). Journal of Documentation : A Bibliometric study (2001-2010). *Excel's International Journal of Social Science & Humanities,*1(2).57-70.
2. Alhamdi, Fawaz. & Khaparde, V.(2015). Authorship pattern in cloud computing research in Library and information science & technology abstracts LISTA. e-Library science research journal, 3(3), Jan 2015, ISSN-2319-8435
3. Alhamdi ,F.A, Khaparde V S , F &Shesharao , W.R(2014). A Scienctometric Profile of " Internet Use Of Library & Information Sciences Subject In (LISTA). e- Library Sciences Research Journal, 3 (1)1-5.
4. Haitun D. (1983). Scientometrics: State and Perspectives, Science, 8, 48-54.
5. Khaparde V. S.(2011) Pattern of information use by researchers in library and Information Science. International Journal of Humanities and Social Sciences. 1(12) September 2011 Center for promoting Ideas, USA.
6. Khaparde V.S.(2011) E – journals in library and information sciences and information science: A Bibliometric study .International journals of Humanities and Social Sciences., Vol. 1(12) Center for promoting Ideas,USA.
7. Khaparde V.S. .(2011) Use of Information by Library Science Professionals : A Bibliometric
8. Study. British Journal of Humanities and Social Science. Vol.1(2), London, United Kingdom, 78- 90 ISSN 2048 – 1268.

9. Khaparde, V S . and Pawar .S. (2013). Authorship Pattern and Degree of Collaboration in Information   Technology. Journal of Computer Science & Information Technology, 1(1). 46-54.

10. Singh, J. K. (2014). Research Journal of Library Sciences, 1(2). 7-12.

11. Tupe, S. K. , & Khaparde V. S (2016) . *"Knowledge Librarian" An International Peer Reviewed Bilingual E-Journal of Library and Information Science,* 3(3) ,10-26.