

## REFERENCE AND USER SERVICES QUARTERLY: A SCIENTOMETRIC

### STUDY

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#### Abstract

*The present study attempts on the Scientometric analysis of reference and user services quarterly study. It is based on the references appended to reference and user services quarterly :a scientometric study during 2003-2012. The present study is based on 3605 references appended to 204 articles contributed by the authors in Reference and user services quarterly study. It was found that journals citations are more in number than the other citations. In authorship pattern, it was found that solo research is predominant then collaborative research. The degree of collaboration was calculated & it was found that the Multi Authorship trend is increasing gradually in reference and user services quarterly :a scientometric study . It was seen that researchers cite latest documents. The study shows the*

*period of reference and user services quarterly :a scientometric study is 10 years approximately.*

## **Introduction**

The aim of Scientometric is to provide quantitative characterization of scientific activity; Scientometric is branch of library and information sciences. Because of the particular importance of publication in scientific communities, it largely overlaps with Bibliometrics, which is quantitative analysis of media in any written form. A complex of quantitative mathematical and Statistical methods used to investigate such aspects as research staff, and to define evolutionary & prospectus of science (Bonitz, 1999). Scientometric is a very recent term. It is often used synonymously with the term Bibliometrics. In addition to disciplines of measurement, Scientometric has strong connection with information and library of science as well as science policy. In the year of 1970 we saw the development of Scientometric as on operational activity. Applying Bibliometrics method to their own field, Scientometric confirm that their own domain, standing evolved as heterogeneous field in topics and practices. The research has been done on Scientometric analysis: Pramana Journal of Physics. Whereas the studies on Scientometric analysis of journal were done by Balasubramanyam V. 1972; Shanmghan G. 1974; Chaudhari Maitreyi, 1980; Gupta Anita, 1981; Patnaik Hari Bhaskar, 1982; Manavatar R, 1982; Suseela M, 1983; Vijayan B. 1983; Kandalhen U.S. 1983; Mahindre,

1984; Mahindre Parkash Wamanrao, 1985; Kuchhadiya Devji Bhura, 1986; Om Prakash, 1995; James K N, 2009; Borah Basantha Kumar, 2009; Newman, 2010; Scharnhorst, 2012; Milojević & Leydesdorff, 2013; Gupta, B. M.; Kumbar, B. D.; Gupta, Ritu, 2013 Khaparde V.S,2011,2012,2013,2014,Alhamadi Fawaz & Khaparde V.S,2013,2014, Ambhore Sagar &Khaparde V.S.,2014,2015, Pratappure Sujata & Khaparde V.S.,2014,2015

In addition to this, a few books large number of research articles related to present study have been reviewed.

### **Scientometrics:**

Scientometrics is the science of measuring and analyzing science. In practice, Scientometrics is often done using Bibliometrics which is a measurement of the impact of (scientific) publications.

### **Scientometrics Analysis:**

According to (2006), wouters, a cart intension has always existed between academic Scientometrics and political /practical, Scientometrics, the letter of which has been described as a hybrid of social science and bur rerate expertise (2006)

## **E- Journal:**

“A journal is publications in any medium issued in successive part’s bearing numerical or chronological designations and indented to be continued indefinitely (AACR2) - (WWW library.iitkgp.ernet. in.): E- journal is defined as the grouping of information that is sent out in electronic form with some regularity. It covers any serial or serial like publication available in electronic format, which is produced published and distributed electronically (Ramesh, yeranagula, 2003); A journal is academic in nature which is published using the world wide web; such a journal usually uses internet technology refereeing of papers. Many e- journals pride themselves on rapid refereeing and consequent repaid publication. (Gupta, 1998)

## **Selected E- Journal**

The journal of “Reference and User Services Quarterly is a by quarterly journals. The journals was first published in the year 1993. This journal is a member of and subscribes to the principles of the committee on publication Ethics e-access right include one going access to volume year subscribed and temporary access back 1994 where available. Online access back to volume one issue one is also available via the EBSCO Back files product.

## **Objectives of the Study**

The main objectives of the present study are:

1. Average number of references per articles.
2. Relative Growth Rates [  $R(c)$  ] and doubling time [  $Dt(c)$  ] for publication
3. Relative Growth Rates [  $R(c)$  ] and doubling time [  $Dt(c)$  ] for citation.
4. Form wise Distribution of references
5. Authorship pattern
6. Year-Wise Degree of Collaboration
7. Organizational Contributions of Articles
8. Country wise distribution of references
9. Ranked List of Most Cited Journals
10. Chronological Distribution of Citation
11. Length of Articles.

## **Scope & Limitations**

The present study is based on over all 3605 citations appended to 204 articles, 10 volumes, 40 issues of the during 2003-2012

## Data Collection

Data can be numerically expressed that is reference and user services quarterly :a scientometric study quantified quantifiable or objective (Fasibs off and Dely, 1990) the **data was collected from 10 volumes, 40 issues of Reference and User services Quarterly during 2003-2012. In all 3605 citations appended to 204 articles were further analyzed.**

## Data Analysis

Analysis of information or data is one of the important part of any study Data analysis is done for the purpose of huge volume of data is reduced into meaning full case report. Analysis of total 3605 citations appended to 204 articles was done in the journal during 2003 to 2012. It was done by using various parameters like to identify the core journals to rank of cited journal to rank. The cited author to find out geographical distribution of citations to find out the types of cited documents, the data or information was presented in the form of table and graphs to show the result prominently and easily.

The reference and user services quarterly :a scientometric study E-Journal is published quarterly in a year.

The present study is based on 10 volumes 40 issues of E- Journal reference and user services quarterly :a scientometric study during 2003-2012.

The present chapter deals with the Scientometric analysis of different E- journals as per the following parameters.

1. Average number of references per articles.
2. Relative Growth Rates [  $R(c)$  ] and doubling time [  $Dt(c)$  ] for publication
3. Relative Growth Rates [  $R(c)$  ] and doubling time [  $Dt(c)$  ] for citation.
4. Form wise Distribution of references
5. Authorship pattern
6. Year-Wise Degree of Collaboration
7. Organizational Contributions of Articles
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**Average number of references per articles.**

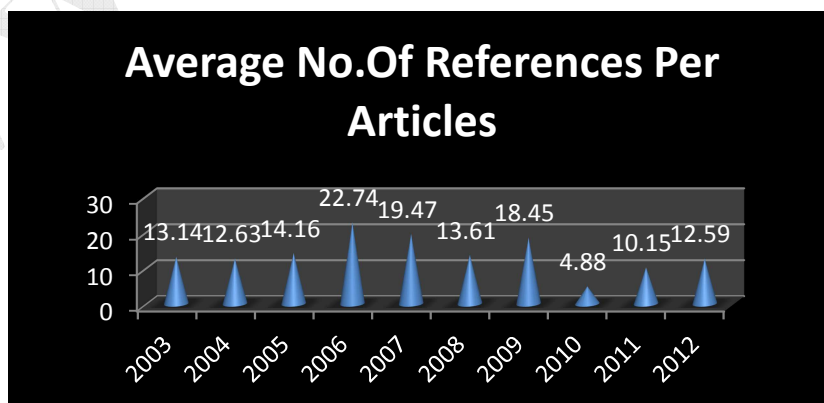
The Volume wise Distribution of contributions is shown in Table No.1

**Table No. 1 Average number of references per articles**

Average number of references per articles				
Year	Volume No.	No. of Issue	No. of Contribution	%
2003	24	19	334	13.14
2004	44	22	321	12.63
2005	45	21	360	14.16
2006	45-46	23	578	22.74
2007	46-47	31	495	19.47
2008	47-48	20	346	13.61
2009	48-49	28	469	18.45
2010	49-50	16	124	4.88
2011	51	18	258	10.15
2012	52	6	320	12.59
<b>Total</b>		<b>204</b>	<b>3605</b>	<b>100.00%</b>

Table 1 depicts the detail regarding the number of articles published during 2003-2012 which was 204 and the total number of citations was 3605. Year wise analysis of citation shows that average number of citation per article is maximum i.e. (22.74) in the year 2006 and minimum i.e.124 (4.8) in the year 2010.

Fig No.1 References Per Articles





**Relative growth rates [R(c )]and Doubling Time [Dt (C )] for publication:**

The Relative Growth Rate (RGR) is a measure to study the increase in number of articles / pages per unit of articles / pages per unit time (Mahapatra,1985) and Doubling time is directly related to Relative Growth (RGR).it is the time required for articles / citations to become double of the existing amount.

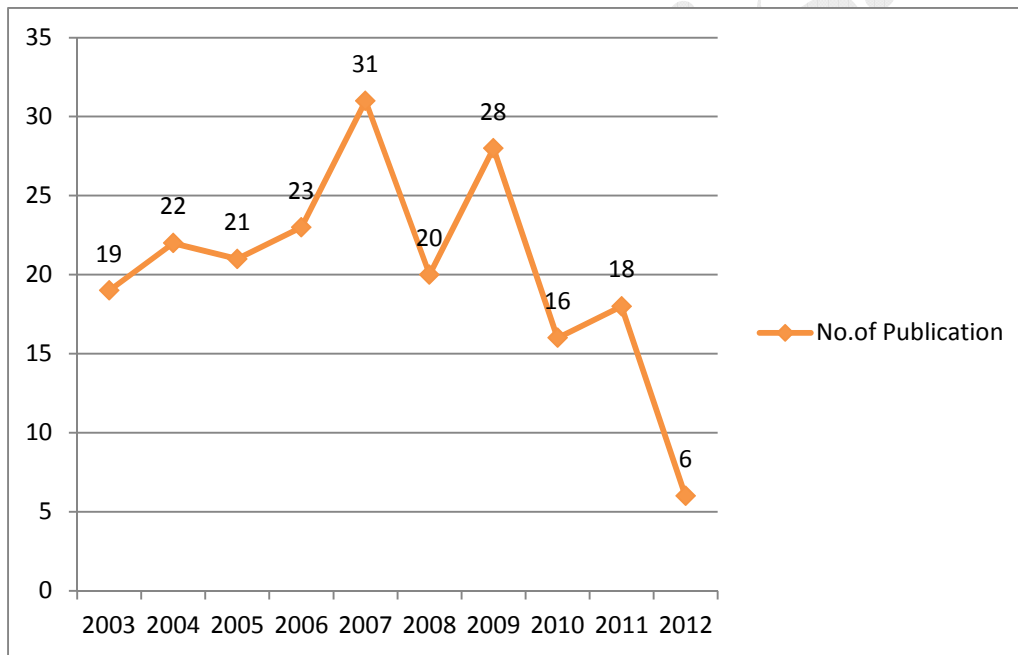
**Table 2: Relative growth rates and doubling time for publications:**

Relative Growth rates and doubling time for publications								
YEAR	NO. OF ARTICLE	CUMULATIVE NO. OF ARTICLE	LOG 1P	LOG 2P	[R (P)]	MEAN [R (P)]	[Dt (P)]	MEAN [Dt (P)]
2003	19	19		2.94		0.45		0.81
2004	22	41	2.94	3.71	0.77		1.11	
2005	21	62	3.71	4.13	0.41		1.11	
2006	23	85	4.13	4.44	0.32		0.6	
2007	31	116	4.44	4.75	0.31		0.46	
2008	20	136	4.75	4.91	0.16		0.45	
2009	28	164	4.91	5.1	0.19		0.23	
2010	16	180	5.1	5.19	0.09	0.11	0.27	0.24
2011	18	198	5.19	5.29	0.1		0.13	
2012	6	204	5.29	5.32	0.03		0.14	

It can be noticed that the Relative Growth of publication [R(P )] decreased from the rate of 0.77 in 2003 to 0.03 in 2012. The mean relative growth for the first five years (i.e. 2003 to 2007) showed a growth rate of 0.45 whereas the mean relative growth for the last five years (i.e. 2008 to 2012) reduced to 0.11. The corresponding Doubling Time for different years

[Dt( P)]gradually increased from 1 in 2003 to 0.45 in 2008 and it also shows that there is decrease in Doubling Time reduced to 6.07. Thus as the rate of growth of publication was decreased, the corresponding Doubling Time was increased. The Doubling Time for the first five years (i.e.2003 to 2012) was only 0.18 which was increased to 0.24 during last five years (i.e. 2008 to 2012). Thus as the rate of growth of publication was decreased; the corresponding Doubling Time was increased

**Fig No.2: Relative growth rates and doubling time for publications:**



**Relative growth rates [R( c)] and Doubling Time [Dt(C)] for citations:**

The relative growth [R (C)] and Doubling time [Dt (C)] of citations were determined and provided in the Table.

**Table 3: Relative growth rates and doubling time for Citations**

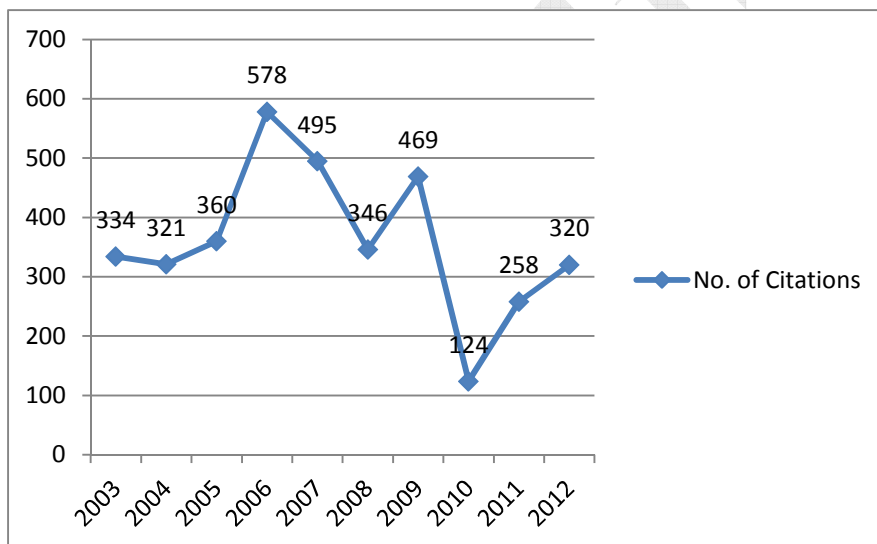
Relative Growth rates and doubling time for Citations								
YEAR	NO. OF CITATION	CUMULATIVE NO. OF CITATION	LOG 1C	LOG 2C	[R (C)]	MEAN [R (C)]	[Dt (C)]	MEAN [Dt (C)]
2003	334	334		5.81		0.45		0.66
2004	321	655	5.81	6.48	0.67		0.97	
2005	360	1015	6.48	6.92	0.44		0.63	
2006	578	1593	6.92	7.37	0.45		0.65	
2007	495	2088	7.37	7.64	0.27		0.39	
2008	346	2434	7.64	7.80	0.15	0.11	0.22	0.16
2009	469	2903	7.80	7.97	0.18		0.25	
2010	124	3027	7.97	8.02	0.04		0.06	
2011	258	3285	8.02	8.10	0.08		0.12	
2012	320	3605	8.10	8.19	0.09		0.13	
	<b>3605</b>							

It is observed from Table 3 in case of citations it was observed that the relative growth rate of citations was gradually decreased from 0.44 in 2003 to 0.09 in 2012. The mean Relative Growth [R(C)] of Citations during first five years (i.e. 2003 to 2012) was higher (0.45) than the last five years i.e. during 2008 to 2010(0.11).

The corresponding Doubling Time also indicate trend of 0.97 in 2003 to 0.13 in 2012. The mean Doubling Time [Dt( C )] during the half period (i.e. 2003 to 2012) was 0.66 which was increased to 0.16 during 2008 to 2012.

Thus the rate of growth of citations has been gradually reduced and corresponding Doubling Time has been increased.

**Fig No. 3: Relative growth rates [R( c)] and Doubling Time [Dt(C)] for citations**



**Form wise distribution of references:**

Journals , Book, Conference and other form of documents are cited in journal are shown in table no.4. The study regarding the Form Wise distributions of citations has been done in order to know the most dominant forms in which the information is cited.

**Table No.4: Form wise distribution**

Form wise Distribution														
FORM	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	no. of Referen	tive no. of	%	Cumulative %
Journal	20	23	24	39	34	29	33		13	12	238	238	66.1	66.1
Book	4	9	1	0	6	1	4	85	5	1	6	6	9	9
Conferenc	12		11	18	13		13		12	19	118	357		99.0
e	7	82	6	2	6	54	4	39	0	6	6	2	32.9	9
	3	0	3	6	13	1	1	0	3	3	33	360	0.92	100
<b>TOTAL</b>	<b>33</b>	<b>32</b>	<b>36</b>	<b>57</b>	<b>49</b>	<b>34</b>	<b>46</b>	<b>12</b>	<b>25</b>	<b>32</b>	<b>360</b>			
	<b>4</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>5</b>		<b>100</b>	

**Fig. No.4: Form wise Distribution**

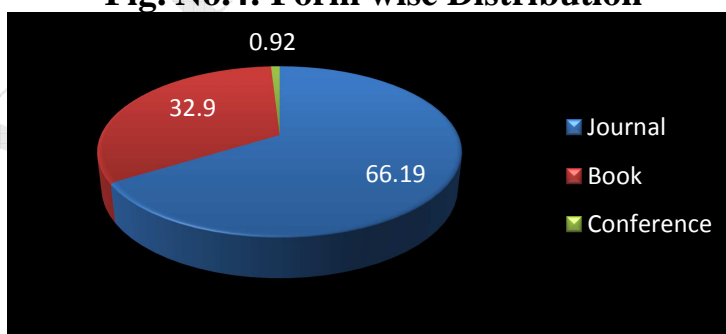


Table 4 gives form wise distribution of citation analysis and shows that of the total 3605 citation 2386 Citations are journal citation. It forms about 66.19% of the total. This is followed by other forms such as Conference 32.90%, Books (0.92%) etc. Where **hypothesis no.1 is proved “Journal Citations are more in number than other citations”**.

**Authorship pattern:**

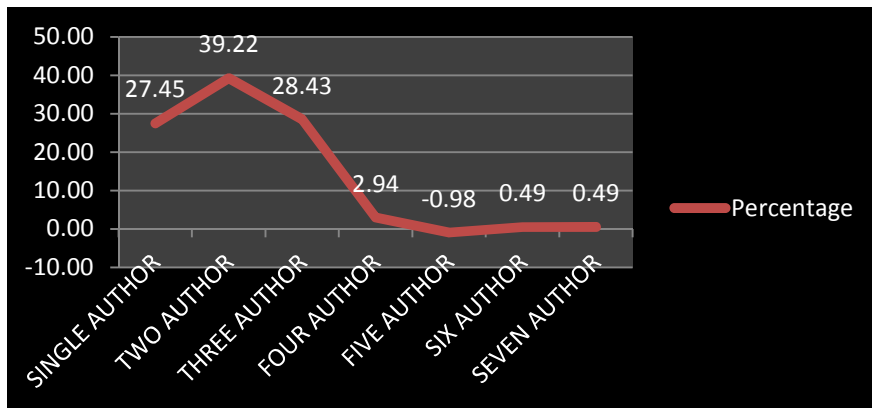
The authorship pattern is analyzed to determine the percentage of single and multiple authors.

**Table 5: Authorship pattern of the articles:**

<b>Authorship Pattern of Contribution's</b>											
<b>Authorship</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>TOTAL</b>
Single Author	3	5	6	3	11	3	11	3	11	0	<b>56</b>
%	15.79	22.73	28.57	13.04	35.48	15	39.29	18.75	61.11	0	27.45
Two Author	6	8	9	9	11	10	10	8	4	5	<b>80</b>
%	31.58	36.36	42.86	39.13	35.48	50	35.71	50	22.22	83.33	39.22
Three Author	9	7	6	7	9	6	6	4	3	1	<b>58</b>
%	47.37	31.82	28.57	30.43	29.03	30	21.43	25	16.67	16.67	28.43
Four Author	1	0	0	2	0	1	1	1	0		<b>6</b>
%	5.26	0	0	8.7	0	5	3.57	6.25	0	0	2.94
Five Author	0	1	0	1	0	0		0	0		<b>2</b>
%	0	-4.55	0	-4.35	0	0	0	0	0	0	-0.98
Six Author	0	1	0	0	0	0		0	0	0	<b>1</b>
%	0	4.55	0	0	0	0	0	0	0	0	0.49
Seven Author	0	0	0	1	0	0	0	0	0	0	<b>1</b>
%	0	0	0	4.35	0	0	0	0	0	0	0.49
<b>TOTAL</b>	<b>19</b>	<b>22</b>	<b>21</b>	<b>23</b>	<b>31</b>	<b>20</b>	<b>28</b>	<b>16</b>	<b>18</b>	<b>6</b>	<b>204</b>
%	<b>9.31</b>	<b>10.78</b>	<b>10.3</b>	<b>11.27</b>	<b>15.2</b>	<b>9.8</b>	<b>13.73</b>	<b>7.84</b>	<b>8.82</b>	<b>2.94</b>	<b>100</b>

Table 5 indicates that the details about the authorship pattern 56 articles (27.45%) out of 204 articles have been contributed by Two author 80 articles (39.22) by two authors and 58 articles (28.43%) by three authors. 6 (2.94%) articles by 5 authors, 2 (0.98%) articles by 6 and the lowest is 1 (0.49%) articles by 4 authors.

**Fig. No.5: Authorship pattern**



### Degree of Author’s collaboration:

Various methods have been proposed to calculate the degree of research collaboration. Here, in this study the formula proposed by Subramanian (1983) has been used.

Formula,

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

Where,

C = Degree of collaboration in a discipline

Nm = Number of multi authored articles in the discipline

Ns = Number of single authored articles in the discipline,

Here,

$$Nm = 151$$

$$Ns = 53$$

$$C = \frac{151}{204} = 0.74. \text{ Thus the degree of}$$

Collaboration is C =0.74.

So, in the study of collaboration during the overall 10 years (2003 – 2012) is 0.74.



## Year Wise Degree of Contributions

**Table No.6 Year Wise Degree of Contributions**

Year- Wise Degree of Contribution's							
YE A R	TOTAL NO. OF ARTIC LE	TOTAL NO. OF AUTH OR	NO. OF SING LE	PERCENTA GE OF ARTICLE	NO. OF MULTI AUTHOR ED ARTICLE S	PERCENTA GES OF ARTICLES	DEGREE OF COLLABORAT ION
2003	19	46	3	1.47	16	7.84	0.84
2004	22	98	5	2.45	17	8.33	0.77
2005	21	42	3	1.47	18	8.82	0.86
2006	23	58	3	1.47	20	9.8	0.87
2007	31	60	11	5.39	20	9.8	0.65
2008	20	45	3	1.47	17	8.33	0.85
2009	28	35	11	5.39	17	8.33	0.61
2010	16	35	3	1.47	13	6.37	0.81
2011	18	35	11	5.39	7	3.43	0.39
2012	6	13	0	0	6	2.94	1
<b>TOT AL</b>	<b>204</b>	<b>467</b>	<b>53</b>	<b>25.98</b>	<b>151</b>	<b>74.02</b>	<b>0.76</b>

Table 6 shows that the single author articles are highest than multi author articles. The single author articles are highest in the 3 year 2007 i.e.11 (5.39%) and highest multi author articles are observed in the 2 year 2006 and 2007 i.e.20 (9.80%).

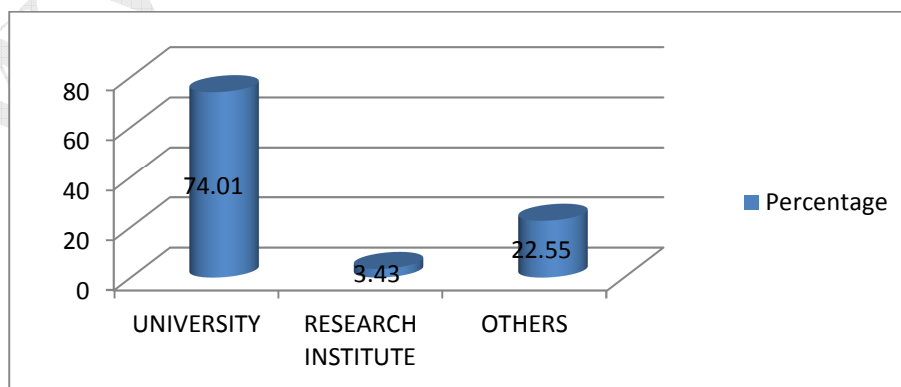
**Organizational Contribution of Articles**

**Table 7: Organizational Contribution of Articles**

Organization Contributions of Articles											
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
UNIVERSITY	17	15	14	18	22	16	14	15	15	5	151
	89.4	68.1	66.6	78.2	70.9			93.7	83.3	83.3	
	7	8	7	6	7	80	50	5	3	3	74.01
RESEARCH INSTITUTE	0	0	0	0	3	0	1	1	2	0	7
									11.1		
	0	0	0	0	9.68	0	3.57	6.25	1	0	3.43
OTHERS	2	7	7	5	6	4	13	0	1	1	46
	10.5	31.8	33.3	21.7	19.3		46.4			16.6	
	3	2	3	4	5	20	3	0	5.56	7	22.55
<b>TOTAL</b>	19	22	21	23	31	20	28	16	18	6	204

Authors from Universities are the major contributors with 151 (74.01) contribution from 2003-20112 and followed by other institute with 46(22.25) contribution. Where **Hypothesis No.3 is valid i.e. “Universities are major contributors”**.

**Fig No.7: Organizational Contribution of Articles**



## Country wise Distribution

**Table No.8: Country wise Distribution**

Table No.8: Country Wise distribution											
COUNTRY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
Africa	1	2	3		3	3	3	1	2	1	19
Albany	1			3							4
Augustine					2						2
Bangladesh						1	1	1	1	1	5
Botswana	1	1	1	3	3	1	1	1	2		14
Brazil									2	1	3
China		1				1	1		1		4
Eritrea	1										1
Gambia								5	2		7
Ghana	1	3	3	1	3	1	2	1		1	16
Gordon				1	2						3
Granada		1					1				2
Guatemala											0
Gulfstate			1	1							2
Ibadan								1	1		2
India			2		3	3	3				11
Kenya	1	1	2	1		1					6
Lesotho					2		1				3
London						2					2
Malaysia	1	4	2					1	1		9
Mauritius		1				1					2
Namibia				1							1
Netherlands	1	1		1	3	1	1	1	1		10
Nigeria	2	3	1			2	2				10
Pakistan	1		1		1			1			4
Peru					1	1	1				3
Sierraleone			1	2	2		2		1		8
Southafrica	1										1
Swaziland		2	1				1				4

Taiwan								1			1
Tanzania					2	1	3				6
Thailand					1			1			2
Trinidad											0
Tunisia				2				1			3
Turkey							1				1
Uganda											0
Uk	5	1	1	5	1		3		3		19
Usa	2	1	2	2	2	1	1		1	2	14
	19	22	21	23	31	20	28	16	18	6	204

The country having a maximum number of 3605 citations appended in 204 articles have been considered. The study regarding the country wise distributions of citations has been done in order to know the most dominant countries in which the information is cited. Table reveals that USA India have 3605(100).

**Ranked List of Most cited Journals:**

The journals Citations were further analyzed to establish a list of journals. Table 9 provide ranked list of the top most frequently cited journal.

**Table No.9: Ranked List of journals**

<b>Ranked List of Journals</b>				
<b>SR. NO.</b>	<b>RANK NO.</b>	<b>NAME OF JOURNAL</b>	<b>NO. OF CITATIO N</b>	<b>%</b>
1	1	Library Hi Tech	104	4.36
2	2	Online	100	4.19
3	3	College and Research Libraries	95	3.98
4	4	Academic Librarian	71	2.98
5	5	Computers and Libraries	70	2.93
6	6	Reference & User Services Quarterly	57	2.39
7	7	Journal of Academic Librarianship	42	1.76
8	8	RQ	37	1.55
9	8	The Reference Librarian	37	1.55
10	9	Information Development	34	1.42
11	10	Bulletin of the Medical Library Association	32	1.34
12	10	Public Libraries	32	1.34
13	11	Journal of Information Science	29	1.22
14	12	Library Review	24	1.01
15	13	African Journal of Library, Archives and Information Science	22	0.92
16	13	Journal of Developmental Education	22	0.92
17	14	Journal of Documentation	19	0.8
18	15	Journal of the American Society for Information Science	17	0.71
19	15	Journal of the American Society for Information Science and Technology	17	0.71
20	15	Library Management	17	0.71

21	16	Library Administration & Management	16	0.67
22	16	Libri	16	0.67
23	17	Research Strategies	15	0.63
24	18	Archie Library Quarterly	14	0.59
25	18	Library Hi Tech News	14	0.59
26	19	American Archivist	13	0.54
27	19	International Information and Library Review	13	0.54
28	19	Medical Reference Services Quarterly	13	0.54
29	19	The Electronic Library	13	0.54
30	20	Bulletin of the Medical Library Association	12	0.5
31	20	Journal of Library Administration	12	0.5
32	21	New Library World	11	0.46
33	22	British Medical Journal	10	0.42
34	22	Decision Support Systems	10	0.42
35	22	Education for Information	10	0.42
36	22	Journal of Academic Librarianship	10	0.42
37	22	Journal of Library & Information Services in Distance Learning	10	0.42
38	22	Library and Information Science Research	10	0.42
39	22	Library Collections, Acquisitions and Technical Services	10	0.42
40	23	Library Journal	9	0.38
41	23	Nigerian Libraries	9	0.38
42	23	Teaching of Psychology	9	0.38
43	23	The Guardian	9	0.38
44	24	College and Research Libraries	8	0.34
45	24	Communications of the ACM	8	0.34
46	24	ESARBICA Journal	8	0.34
47	24	Journal of Library and Information Science	8	0.34
48	24	Libraries and the Academy	8	0.34
49	25	American Journal of Psychoanalysis	7	0.29
50	25	Collection Management	7	0.29
51	25	Information and Management	7	0.29
52	25	Information Technology and Libraries	7	0.29
53	25	Information Technology for Development	7	0.29

54	25	International Journal of Information Management	7	0.29
55	25	International Journal of Mobile Communications	7	0.29
56	25	Journal of Librarianship and Information Science	7	0.29
57	25	Library Collections, Acquisitions, and Technical Services	7	0.29
58	25	Library Trends	7	0.29
59	25	Management Journal	7	0.29
60	25	Online Information Review	7	0.29
61	25	Program	7	0.29
62	25	Science and Technology Librarianshi	7	0.29
63	25	Scientometrics	7	0.29
64	26	American Library Journal	6	0.25
65	26	Interlending and Document Supply	6	0.25
66	26	Library Quarterly	6	0.25
67	26	MIS Quarterly	6	0.25
68	26	Telematics and Informatics	6	0.25
69	27	Advances in Librarianship	5	0.21
70	27	African Journal of Library and Information Science	5	0.21
71	27	IFLA Journal	5	0.21
72	27	Information Research	5	0.21
73	27	Information Systems	5	0.21
74	27	Information Today	5	0.21
75	27	Journal of Education for Library and Information Science	5	0.21
76	27	Management Quarterly	5	0.21
77	27	Publishers Weekly	5	0.21
78	27	Reference Services Review	5	0.21
79	27	Special Libraries	5	0.21
80	27	Vanguard	5	0.21
81	27	World Development	5	0.21
82	28	Agricultural Economics	4	0.17
83	28	College and Research Libraries News	4	0.17
84	28	Electronic Networking Applications and Policy	4	0.17
85	28	Information Systems Journal	4	0.17
86	28	Information Technology and Libraries	4	0.17

87	28	Journal of Teaching in Travel and Tourism	4	0.17
88	28	Journal of the Medical Library Association	4	0.17
89	28	Pak-LIS News	4	0.17
90	28	Research Evaluation	4	0.17
91	28	The International Journal for Communication Studies	4	0.17
92	28	The Library Quarterly	4	0.17
93	29	Al-Anbaa	3	0.13
94	29	American Journal of Public Health	3	0.13
95	29	American Libraries	3	0.13
96	29	Aslib Proceedings	3	0.13
97	29	BOTA BOTA News	3	0.13
98	29	D-Lib Magazine	3	0.13
99	29	Education Libraries Journal	3	0.13
100	29	Educom Review	3	0.13
101	29	Electronic Library and Information Systems	3	0.13
102	29	First Monday	3	0.13
103	29	Health Libraries Review	3	0.13
104	29	Information Quarterly	3	0.13
105	29	International and Comparative Librarianship	3	0.13
106	29	Journal of AGSI	3	0.13
107	29	Journal of Information Management	3	0.13
108	29	Journal of Personality	3	0.13
109	29	Journal of Research on Computing in Education	3	0.13
110	29	Journal of Small Business Management	3	0.13
111	29	Library Services Association	3	0.13
112	29	Library Trends	3	0.13
113	29	Management Bulletin	3	0.13
114	29	MEDICC Review	3	0.13
115	29	Nigerian Library and Information Science Review	3	0.13
116	29	Online	3	0.13
117	29	Research Methods, Instruments, & Computers	3	0.13
118	29	Review of Educational Research	3	0.13
119	29	Society	3	0.13
120	29	Technology Research and Development	3	0.13
121	29	The Journal of Academic Librarianship	3	0.13



122	29	Third World Quarterly	3	0.13
123		Two Times	276	11.57
124		One Time	590	24.73
		Total	<b>2386</b>	100

It was observed that the Library Hi Tech ranked 1<sup>st</sup> in position than other journal with maximum of citations i.e.104 (4.36%).276 journals with 2 citations & 590 journals with 1 citation respectively.

### Chronological Distribution of Citations:

The study regarding the ranking of year wise citations has been done in order to know the most dominant year; the ten year span of period was undertaken for the study.

**Table 10: Chronological Distribution of Citations:**

Chronological Distribution of Citations				
Period	No. of Citation	Cumulative Citations	% of Citations	Cumulative % of Citations
1900 & before	30	30	0.83	0.04
1901-1910	20	50	1.39	1.43
1911-1920	50	100	2.77	4.20
1921-1930	90	190	5.27	9.47
1931-1940	70	260	7.21	16.68
1941-1950	120	380	10.54	27.22
1951-1960	150	530	14.70	41.93
1961-1970	200	730	20.25	62.18
1971-1980	405	1135	31.48	93.66
1981-1990	765	1900	52.70	146.36
1991-2000	1300	3200	88.77	235.13
2001-2010	345	3545	98.34	333.47
Not Define	60	3605	100.00	
<b>Total</b>	<b>3605</b>			

Table 10 gives Ranking of the year of distribution of citation which shows that 3545 the highest number of citations out of a total of 3605 citations is in the year 2003-2012 and lowest number of citation in year 1991-2000.

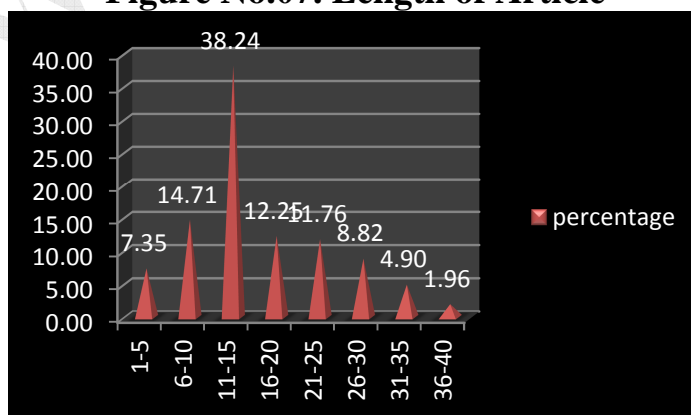
**Length of the Articles:** Indicates the details about the page length of the contributions

**Table No11: Length of Articles:**

Length of Articles												
NO. OF PAGES	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	%	%
1-5	3			1			11				15	7.35
6-10	2	2	2	11	5	1	1	1	4	1	30	14.71
11-15	6	11	17	4	10	13	6	4	5	2	78	38.24
16-20	5	2	1	3	1	5	3	1	3	1	25	12.25
21-25	3	2		1	5		3	8	2	0	24	11.76
26-30		2		3	5		2	1	4	1	18	8.82
31-35		2	1		4	1	1			1	10	4.90
36-40		1			1		1	1			4	1.96
	<b>19</b>	<b>22</b>	<b>21</b>	<b>23</b>	<b>31</b>	<b>20</b>	<b>28</b>	<b>16</b>	<b>18</b>	<b>6</b>	<b>204</b>	<b>100.00</b>

Table 11 above aptly reflects the distribution of length of the articles during the period of study. Out of 204 articles 78(38.24) had 11-15 pages followed by 30(14.71%) had 6-10 pages. The lowest range being 10(4.90%) articles in the range of 31-35. Only 4(1.96) article had length of 36-40 pages. Table shows year wise length of the articles.

**Figure No.07. Length of Article**



## Findings:

The findings are based on the analysis of collected data appended in 204 articles and 3605 references in “Reference and User Services, Quarterly” journal.

### Reference and User Services, Quarterly

#### Average number of references per articles:

The highest number of references per article is observed in the year 2006.e.578 (22.74%) and lowest in the year 2010 i.e.124 (4.88%).

#### Growth and Rate of doubling time of Publication:

It can be noticed that the Relative Growth of publication [R(P)] decreased from the rate of 0.77 in 2003 to 0.03 in 2012. The mean relative growth for the first five years (i.e. 2003 to 2012) showed a growth rate of 0.45 whereas the mean relative growth for the last five years (i.e. 2008 to 2012) reduced to 0.11. The corresponding Doubling Time for different years [Dt(P)] gradually increased from 1 in 2003 to 0.45 in 2008 and it also shows that there is decrease in Doubling Time reduced to 6.07. Thus as the rate of growth of publication was decrease, the corresponding Doubling Time was increased. The Doubling Time for the first five years (i.e. 2003 to 2012) was only 0.18 which was increased to 0.24 during last five years (i.e. 2008

to 2012). Thus As the rate of growth of publication was decreased, the corresponding Doubling Time was increased.

### **Rate growth of citations:**

It is observed from Table 3 in case of citations it was observed that the relative growth rate of citations was gradually decreased from 0.44 in 2003 to 0.09 in 2012. The mean Relative Growth [R(C)] of Citations during first five years (i.e. 2003 to 2012) was higher (0.45) than the last five years i.e. during 2008 to 2012 (0.97).

The corresponding Doubling Time also indicate trend of 0.13 in 2003 to in 2012. The mean Doubling Time [Dt( C)] during the half period (i.e. 2003 to 2012) was 0.66 which was increased to 0.16 during 2008 to 2012. Thus the rate of growth of citations has been gradually reduced and corresponding Doubling Time has been increased.

### **Form wise Distribution of references :**

Journal ,Book, and Conference cited in the journal are shown in the table no 4. the study regarding the form wise distributions of citations has been done in order to know the most dominant forms in which the information is cited. Table 4 gives

form wise distribution of citation analysis and shows that 2386 citations out of a total of 3605 citations are journal citations. It forms about 66.19% of the total. Where hypothesis No.1 is proved “Journals citations are more in numbers than other document.

### **Authorship Pattern:**

The authorship pattern has been studied with 204 articles. It was analyzed to determine percentage of single, two, three, four, five, six or more than six authors. It also identifies the distribution of articles according to the number of contributors. The number of two author is highest and it accounts for 80(39.22%) and the number of six author and seven author are the lowest and it accounts for 1(0.49%).Where Hypothesis No.2 is not valid i.e. “Single authors are more in number.

### **Year –wise Degree of collaboration:**

It is observed that the two author articles are heights in number than co-authors. the two authored article are highest in the year 2007i.e.11 (5.39) and the three authored articles are highest in the year 2003 and 2007 i.e. 9 (47.37).

### **Organizational Contribution :**

In organization wise contribution it is observed that University are major contributors with 151(74.01%) from 2003-2012 which is followed by other institute i.e.46 (22.25).Where hypothesis No.3 is valid i.e. “Universities are the major contributors”

### **Country wise distribution:**

The countries on the basis of no of citations published are shown in table. The countries having a maximum number of 3605 citations appended in 204 articles have been considered. The study regarding the country wise distributions of citations has been done in order to know the most dominant countries in which the information is cited. It was seen that USA have 3605 (100%).

### **Ranked List of most cited journals:**

The journals Citations were further analyzed to establish a list of journals. Table 6 provide ranked list of the most frequently cited journals in both journals under study. It was observed that the Library Hi Tech journal ranked 1<sup>st</sup> in position than

other journal with maximum number of citations i.e. 104(4.36%).19journals were 2 citations and 100 journals with 1 citations respectively.

### **Chronological distribution of citations:**

The study regarding the ranking of the year citations has been done in order to know the most dominant year of the ten year span of period was taken. Citation in which the information is cited. Table 10 gives Ranking of year of distribution of citations which shows that 3545 the highest number of citations out of a total of 3605 citations is in year 2003-2012 and lowest number of citations in year 1911-1920 respectively Where it is seen that the researchers Cite the latest document.

The study shows that last 18-20 years (1991-2010) literature was cited

### **Length of Articles:**

Table 11 shows aptly reflect the distribution of length of the articles during the period of study. Out of 204 articles 78(38.24) had 11-15 pages followed by 30(14.71) had 6-10 pages. The lowest range being 10(4.90) articles in the range of 31-45.Only 4(196) article had length of 36-40 pages. Table shows year wise length of the articles.



## Conclusion:

Analysis is a branch of bibliometric where the unit of analysis is a document that is being cited as a bibliographic reference. It is the study of the distribution or scattering of references. The present study has been conducted citation analysis of the “Journal Collection Management” on the basis of ten objectives.

Citation studies do provide some guide lines for making process in their acquisition policy. These findings are much helpful for librarian and information scientists while taking decisions regarding collection development, removing out dated documents from the shelves and also in maintaining need based collection in libraries.

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