

Textile Research Journal, 2000-2015: A Bibliometric Study

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Abstract

With a view to analyzing research output and its various measures in this field, publications from 2000-2015 (15 years) were downloaded from the SCOPUS database. This paper presents the findings of a bibliometric study of *Textile Research Journal*. A total of 1,737 articles carrying 19,755 journal citations during the period of 2000-2015 were analyzed. In geographical analysis of said articles, it is found the highest articles (536, 30.86%) were produced by China and minimum articles (29, 1.67%) produced by Canada. Articles comes first as it is the preferred Articles type document with 1727 out of 1737 articles. Out of 1737 articles contributions (303, 17.25%) have pages length of 1-5 pages. The top two countries that contributed maximum articles to textile research were China (536, 30.86%) and US (521, 29.99%). This journal has got world-wide recognition and is steadily growing to be a very promising journal in the area of textile research by attracting scholarly articles from around the world.

Keywords: Bibliometrics; Authorship pattern; Geographical distribution; Citation analysis

I Introduction

The term *bibliometrics* was first introduced by Pitchard (1969). Bibliometric study provides careful evaluation of periodical literature by providing a complete picture of the core publications of any specific subject (Davarpanah & Aslekia, 2008). Bibliometric study is, therefore, being consistently adopted by the LIS researchers to assess and evaluate the scientific output of the published literature on any specific subject domain for a definite period through the

application of bibliometric and citation indicators. Moreover, bibliometric studies have been immensely useful for librarians in selection and weeding policies. It serves as a useful tool to the academic community in identifying most popular authors and potential publications. Furthermore, it helps in determining the highly cited journals, ranking of prolific authors, authors productive pattern, the journal impact factor, and other significant details of any specific literature under study.

In this study, the authors attempt to examine the publication output of *Textile Research Journal* (TRJ) from 2000 to 2015. TRJ has emerged as one of the leading research Journal in the domain of Textile Research. Textile Research is a peer-reviewed journal that introduces new concepts, innovative technologies, and improved understanding of textile materials, processes, chemistry and systems. Since its founding in 1930, the journal has served as the premier forum for research on fibers, fibrous assemblies, textiles, and other fiber-based materials such as nonwovens. This journal has endeavored to enrich the contents of each issue through balanced overseas contributions. Therefore, a bibliometric study of this journal is of vital significance.

2 Objectives

The present study aims to evaluate the articles trends of Textile Research Journal from 2000 to 2015 with the application of bibliometric indicators. The key objectives of the study are to find and study ;

- 1.) Distribution of articles and journal citations by year
- 2.) Authorship pattern
- 3.) Degree of authors collaboration
- 4.) Distribution of authors by country
- 5.) The document type of the publications in textile research.
- 6.) The length of the publications in textile research.
- 7.) Age, distribution of citations and publication half life

3 Methodology

For this study, the textile research data has been downloaded from SCOPUS multidisciplinary online database, which is an International indexing and abstracting database, using the search term “textile”. For this study, publications commencing from 2000-2015 (15 years) has been downloaded from the database. A total of 1,737 articles were found. The collected data has been classified by using Excel worksheet to process the gathered data for subsequent analysis.

4 Literature Review

There have been a limited number of single journal bibliometric studies in the published literature all across the world. Some of the relevant studies in the aforesaid direction are worthy of examinations. Mote and Deshmukh (1996) conducted a bibliometric study on *Annals of Library Science and Documentation* and found that journals are the most cited forms of communication amongst the library and information scientists. Shokeen and Kaushik (2004), in their study of *Indian Journal of Plant Physiology*, revealed that journal articles are predominant with more than two thirds of total citations. Jena (2006) made an exhaustive bibliometric study of *Fibre and Textile Research* and unfolded the publication trend of this Indian journal from 1996 to 2004. Bharvi et al. (2007) analyzed 1,317 papers published in the first fifty volumes from 1978 to 2001 of the international journal *Scientometrics* and found that the US share of the papers is constantly on the decline while that of the Netherlands, India, France and Japan is on the rise and that the scientometric output is dominated by the single-authored papers. Zainab et al. (2009), in their bibliometric study of *Malayasian Journal of Computer Science*, reported their findings regarding the article productivity, authorship collaboration, and journal impact factor of MJCS. Serenko et al. (2010) conducted a bibliometric analysis of a body of literature contained in 11 major knowledge management and intellectual capital peer-reviewed journals and revealed the institutional and individual productivity, co-operation patterns, publication frequency, and other related parameters. Swain (2011) conducted a bibliometric study of *Library Philosophy and Practice* from 2004 to 2009 and revealed the partial compliance of authorship productivity pattern of LPP with Lotka’s Law at a slightly greater n value. Hussain and Fatima (2011)

evaluated the characteristics of the *Chinese Librarianship: an International Electronic Journal* from 2006 to 2010 through a bibliometric analysis. The present study endeavors to put in some new niceties to the corpus of existing literature.

5 Findings and Analysis

5.1 Year wise distribution of articles and journal citations

Table 1 shows the distribution of articles and corresponding citations by year. It is observed that a total number of 1,737 articles were published in TRJ from 2000 to 2015 with a total of 19,755 journal citations. The number of articles published per year has consistently witnessed an up-and-down trend during this period.

Table 1
Year wise Distribution of articles and journal citations

Year	No. of Articles	AC*	ACPA**
2000	112	1794	16.01
2001	106	1760	16.6
2002	116	1822	15.7
2003	108	1894	17.53
2004	115	2226	19.35
2005	73	1286	17.61
2006	68	1094	16.08
2007	73	1132	0.06
2008	65	722	0.09
2009	140	1394	9.95
2010	142	1424	0.09
2011	165	1388	8.41
2012	152	891	5.86
2013	134	538	4.01
2014	111	270	2.43
2015	57	120	2.1
Total	1737	19755	11.37

*AC=Article Citations, **ACPA=Average Citations Per Article

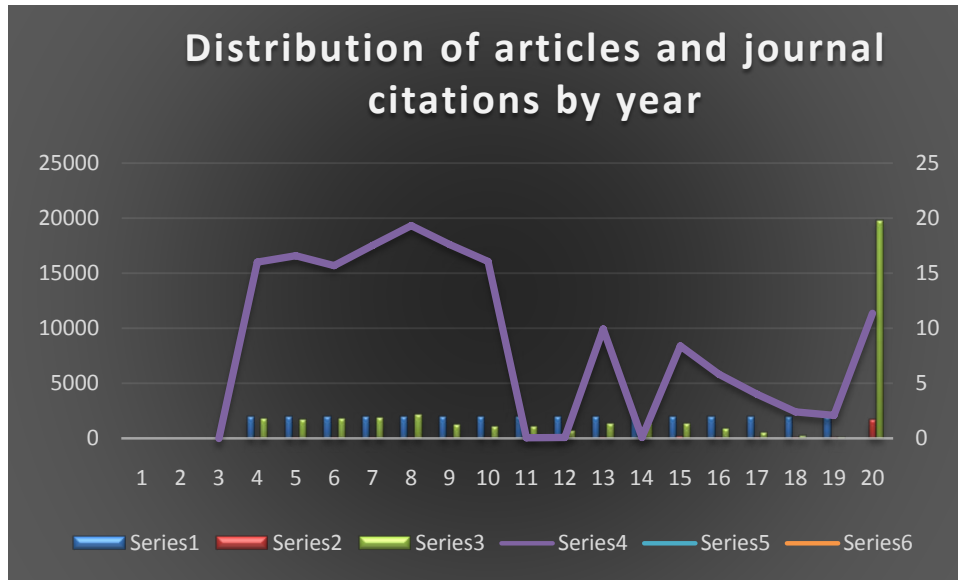


Fig. 1

5.2 Year wise distribution of Authorship Pattern

Table 2 shows single-authored contributions (100, 5.76 %), two-authored contribution (420, 24.17%), contribution from three authors (471, 27.11%), contribution from four authors (393, 22.62%), contribution from five authors (201, 11.57%) and more than five contributions are found (152, 8.76%).

Table 2
 Year wise distribution of Authorship Pattern

Years	One	Two	Three	Four	Five	More than Five	Total	%
2000	7	37	29	27	8	5	113	6.51
2001	5	29	43	22	6	1	106	6.10
2002	6	33	36	21	10	10	116	6.68
2003	6	31	37	23	7	3	107	6.16
2004	7	33	24	24	9	8	105	6.04
2005	6	14	22	14	9	3	68	3.91

2006	2	15	20	14	11	6	68	3.91
2007	6	15	24	15	9	6	75	4.32
2008	3	23	15	18	4	2	65	3.74
2009	5	45	33	34	13	10	140	8.06
2010	10	34	31	35	13	19	142	8.18
2011	19	28	49	38	22	19	175	10.07
2012	8	30	46	28	22	21	155	8.92
2013	6	29	24	31	27	18	135	7.77
2014	1	17	26	32	21	13	110	6.33
2015	3	7	12	17	10	8	57	3.28
Total	100	420	471	393	201	152	1737	100
%	5.76	24.17	27.11	22.62	11.57	8.76	100	

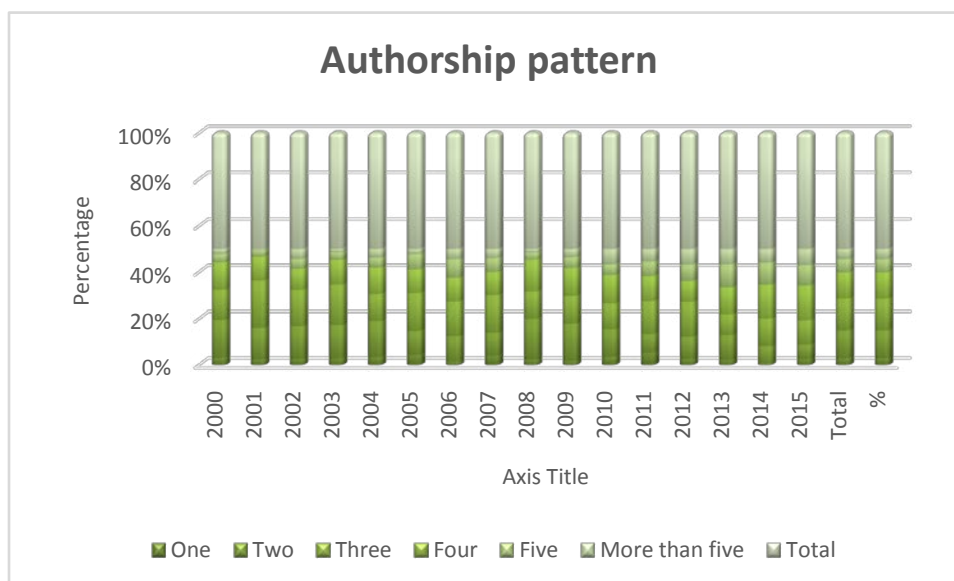


Fig. 2

5.3 Degree of authors' collaboration

It is clear from the above analysis that the percentage of multi-authored papers is more than that of the single authored papers. To determine the extent of collaboration in quantitative terms, the formula given by K. Subramanyam was used.

The formula is as follows:

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

Where

C = Degree of collaboration in the discipline

Ns = Number of single authored papers

Nm = Number of multi authored papers

$$C = \frac{1647}{1647+90}$$

$$C = 0.94$$

Thus the degrees of collaboration in TRJ research is 0.94. This brings out clearly the prevalence of its team research in this filed with the distribution of degrees of collaboration over the years from 2000 to 2015. Table 3 shows the degree of collaboration of authors in TRJ. It is found that the degree of collaboration in TRJ ranged from 0.93 to 0.99 during the publication phase under study. In comparison, Ramesh and Nagraju (2002) found the degree of collaboration in *International Journal of Tropical Geography* to be from 0.85 to 0.99.

Table 3
Degree of Authors Collaboration

Year	Ns	Nm	C
2000	7	105	0.93
2001	5	101	0.95
2002	6	110	0.94
2003	6	102	0.94
2004	7	108	0.093
2005	6	67	0.91
2006	2	66	0.97
2007	6	67	0.91
2008	3	62	0.95

2009	5	135	0.96
2010	10	132	0.92
2011	10	156	0.93
2012	8	144	0.94
2013	6	128	0.95
2014	1	110	0.99
	2	54	0.96
	90	1647	0.94

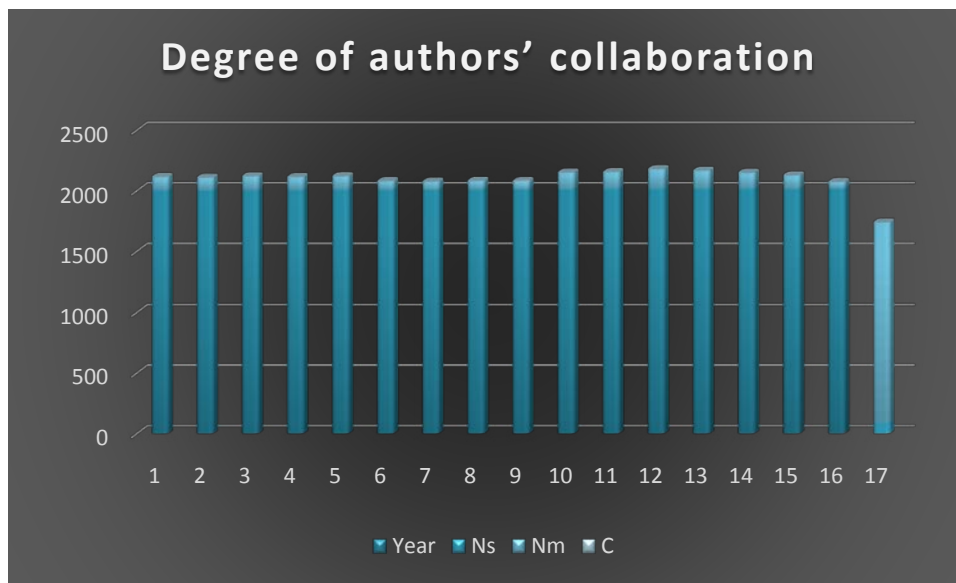


Fig. 3

5.4 Distribution of authors by countries

Table 4 shows a list of all countries from where contributions were originated. The top three countries were China (536, 30.86 %), US (521, 29.99%) and Japan (262, 15.08%). During the analysis it has been observed that most of the articles are contributions by joint authors from different places. From the analysis it has been observed that the highest numbers of contribution is from China articles and the percentage is (536, 30.86%) and lowest number of contribution is (29, 1.67%) has been contributed by authors from Canada. Most significantly, it has a fairly wide author distribution in 6 countries, including UK, France, Germany, India, Italy and Canada.

Table 4
 Distribution of authors by country

Countries	No. of authors	Cumulative Authors	Percentage	Cum %
China	536	536	30.86	4.25
US	521	1057	29.99	8.38
Japan	262	1319	15.08	10.46
UK	116	1435	6.68	11.38
France	104	1539	5.99	12.21
Germany	70	1609	4.03	12.76
India	57	1666	3.28	13.22
Italy	42	1708	2.42	13.55
Canada	29	1737	1.67	13.78
	1737	12606	100	100

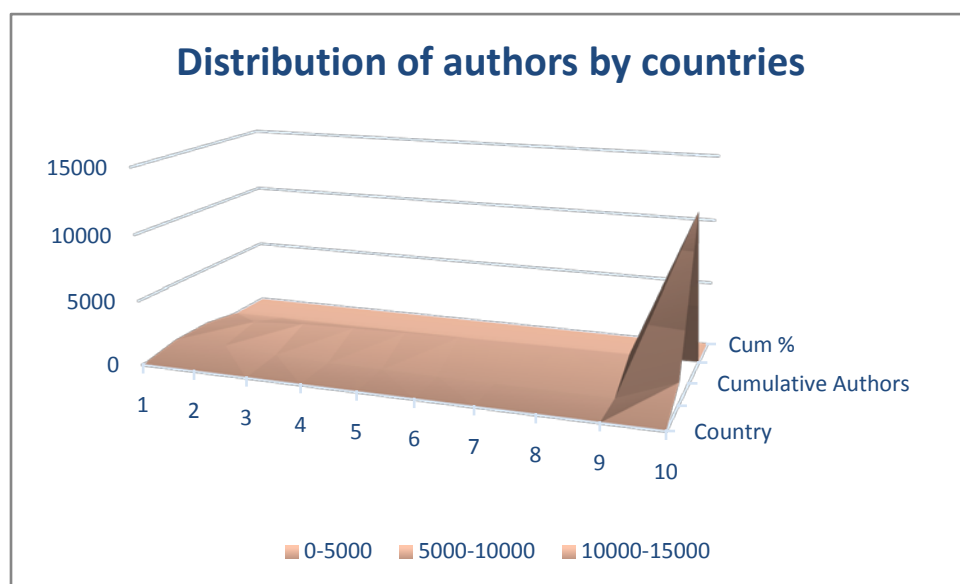


Fig. 4

5.5 Document types

Document illustrates the distribution of publication accordingly to documents types research articles comes first as it is the preferred document type with (1727, 99.42%) documents followed by conference paper (4, 0.23%) documents, letter with (1, 0.06%), and review (5, 0.29%).

Table 5
Document types

Sr .No.	Document Type	Total	%
1	Articles	1727	99.42
2	Conference Papers	4	0.23
3	Letters	1	0.06
4	Reviews	5	0.29
		1737	100

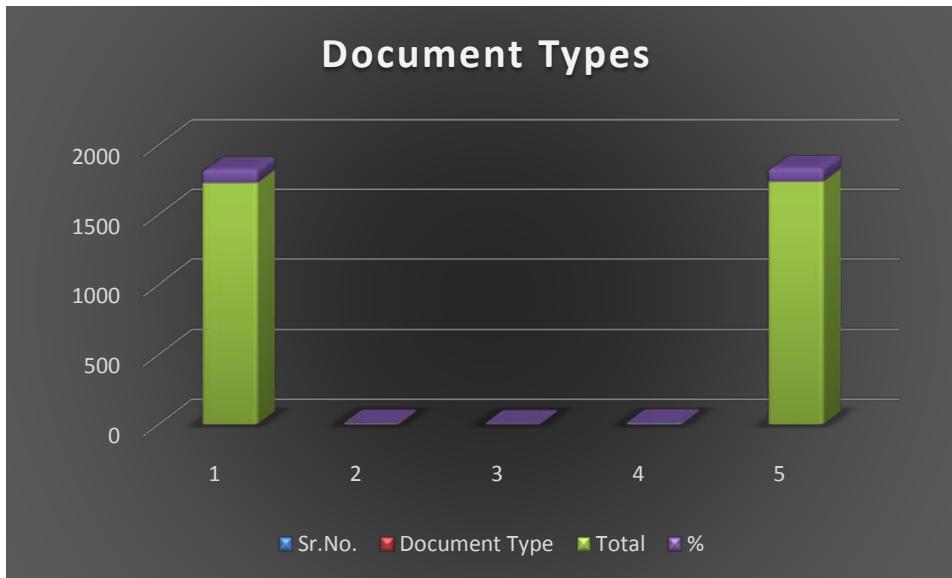


Fig. 5

5.6 Length of Pages of articles

The length of articles and the total pages of the articles are shown in the Table 6. Out of 1,737 articles (303, 17.24%) have pages length of 1-5 pages while (989, 56.29%) contributions have length of 6-10 pages, (361, 20.54%) have pages length of 11-15 pages while (70, 3.98%) contributions have length of 16-20 pages, (70, 3.98%) and (34, 1.94%) have pages length of 20-25 pages. The highest value 989 in 6 to 10 pages and the lowest 34 value in 21 to 25.

Table 6
Length of Pages of articles

Years	1 --5	6--10	11--15	16--20	21--25	Total
2000	26	74	10	9	1	120
2001	26	76	3	4	4	113
2002	44	68	4	2	2	120
2003	32	70	5	1	2	110
2004	33	77	5	2	0	117
2005	28	44	1	4	2	79
2006	8	52	9	8	1	78
2007	12	47	11	3	1	74
2008	45	15	1	1	0	62
2009	11	82	40	4	2	139
2010	11	84	40	6	8	149
2011	11	76	48	5	2	142
2012	8	82	54	6	2	152
2013	3	63	59	6	3	134
2014	4	52	46	7	2	111
2015	1	27	25	2	2	57
Total	303	989	361	70	34	1757
%	17.24	56.29	20.54	3.98	1.94	100

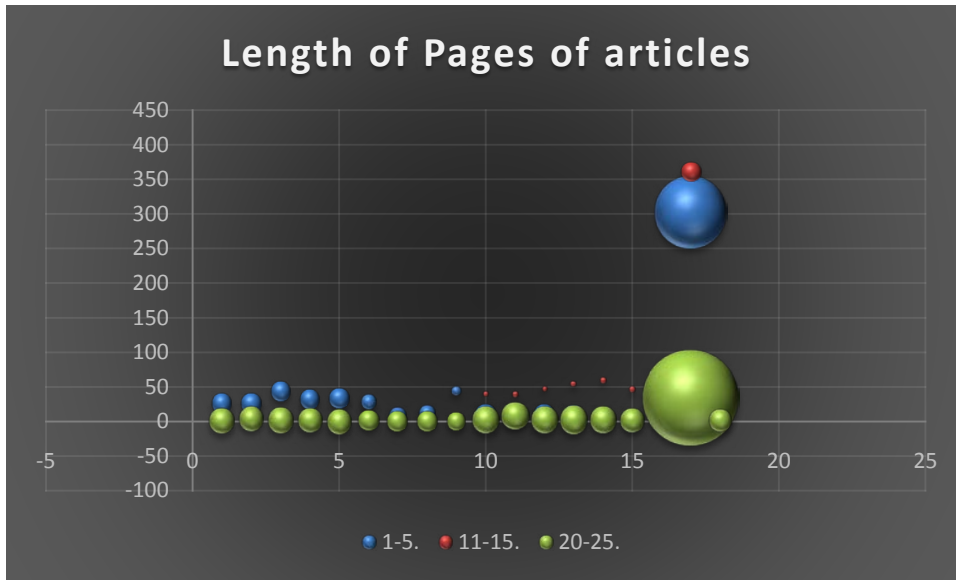


Fig. 6

5.7 Age distribution of cited journals

Table 7 reveals the details of number of citations appearing at the end of contributions during 2000-2015 out of 1,737 contributions published. The highest number of contributions with citations in year 2004 as no. of citations 2226 (11.27%) to be maximum and lowest number of contributions with citations in year 2015 with number of citations as 120 (0.61%).

Table 7
 Age distribution of cited journals

Year	No. Citations	Percentage	Cumulative percentage
2000	1794	9.08	1794
2001	1760	8.91	3554
2002	1822	9.22	5376
2003	1894	9.59	7270
2004	2226	11.27	9496
2005	1286	6.51	10782
2006	1094	5.54	11876
2007	1132	5.73	13008
2008	722	3.65	13730
2009	1394	7.06	15124
2010	1424	7.21	16548

2011	1388	7.03	17936
2012	891	4.51	18827
2013	538	2.72	19365
2014	270	1.37	19635
2015	120	0.61	19755
	19755	100	204076

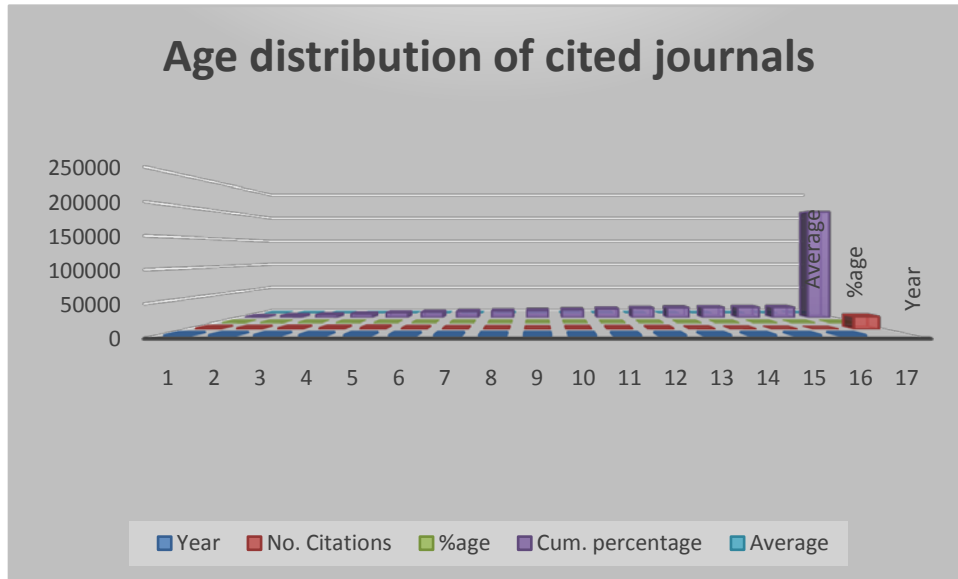


Fig. 7

The findings of the study could be summarized as below:

1. The total number of 1,737 articles were published in TRJ from 2000 to 2015 with a total of 19,755 journal citations.
2. The degree of collaboration in TRJ ranged from 0.93 to 0.99 during the publication phase under study.
3. Articles type was noticed as predominant document type with 1727 (99.42%) documents followed by conference papers 4 (0.23%), letters with 1 (0.06%), and reviews 5 (0.29%).
4. The top three countries contributors were China (536, 30.86 %), US (521, 29.99%) and Japan (262, 15.08%).
5. Regarding authorship pattern, The figures were for single-authored contributions (100, 5.76 %), two-authored contributions (420, 24.17%), contribution from three authors (471,

27.11%), contribution from four authors (393, 22.62%), contribution from five authors (201, 11.57%) and more than five contributions are found (152, 8.76%).

6. In terms of length of pages of articles, the highest value 989 were recorded as 6 to 10 pages and the lowest 34 value from 21 to 25 pages
7. The average number of 11 citations per article indicates that the authors review a considerable amount of literature before writing a paper, which is a healthy sign for good research. The highest number of contributions with citation in year 2004 no. of citation (2226, 11.27%) and lowest number of contributions with citation in year 2015 no. of citations (120, 0.61%).
8. The journal publishes articles only in English

Conclusion

The findings of this study indicate a very healthy trend of researchers interest in publications on textile research. Analysis of various parameters for TRJ reveal almost similar trend for other research journals also, however the increased average number of citations per article further supports this trend. Textile Research Journal has successfully completed 16 years of publication. It has got world-wide recognition and is steadily growing to be a very promising journal in the area of textile research by attracting scholarly article from around the world. Moreover, the scholarly contents of this journal are fairly cited. In the study, articles show an increasing trend each year except in the year 2015. This type of study is helpful for libraries, researchers, readers for scholarly communication to choose right journal for research study.

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