DESIDOC Journal of Library & Information Technology, Vol. 34, No. 1, January 2014, pp. 66-73

Journal of Intellectual Property Rights: A Bibliometric Study

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ABSTRACT

This paper analyses 605 papers published in the *Journal of Intellectual Property Rights* during 1996-2012, which indicates that the inflow of papers has increased during the period of study. The increasing inflow of articles show the popularity of journal among the scientific community as well as policy makers. The study shows that number of references per paper is increasing and the average reference per paper is 23. The proportion of single authored papers is decreasing, while the share of multi-authored papers is on the rise. About one-fourth of the papers published in the journal are from abroad and the rest from India. Among foreign countries US is the largest contributor. Among the performing sectors, academic institutions are the largest contributors to the journal followed by research institutions. As an agency, CSIR has contributed the highest number of papers and several of the prolific institutions and authors are also from CSIR.

Keywords: Bibliometrics, *Journal of Intellectual Property Rights*, IPR laws

1. INTRODUCTION

Before the dawn of 20th century, the knowledge or the innovation created by men fell within the public domain and anybody could use them for their benefit. However, as the time passed, the importance of these creations was realised and the commercial aspect started playing an important role. By the end of 20th century, things created and invented by the human mind were recognised as the intellectual property of the owner. The owner's right over these properties was accepted and named as Intellectual Property Rights (IPR). A new set of laws called IPR laws were enacted to provide protection to the owners under different names like patents, designs, copyrights, and trademarks, etc. The IPR were essentially recognised and accepted all over the world. Some of the reasons[1] for accepting these rights are:

(a) Providing incentives and due recognition to the inventors;
(b) Ensuring material reward for intellectual property; and
(c) Ensuring the availability of the genuine and original products.

Several agencies of the Government of India like Department of Science and Technology (DST), Department of Scientific and Industrial Research (DSIR), and the (CSIR) organised several programmes to educate scientists and policy makers about the importance of IPR and their protection. To boost it further, the then Director General of CSIR, Dr R.A. Mashelkar suggested to launch a journal on the issues of IPRs and thus originated *Journal of Intellectual Property Rights (JIPR).*

2. *JOURNAL OF INTELLECTUAL PROPERTY RIGHTS*

National Institute of Science Communication and Information Resources (NISCAIR), New Delhi is the nodal agency for publishing the science and technology journals for CSIR. Keeping this in view, NISCAIR was assigned the task of bringing out the *Journal of Intellectual Property Rights (JIPR)* in 1996. It is a peer reviewed, bi-monthly publication and is the first journal on the subject of IPR from India. The objective of the journal is two-fold: (a) to enhance communication between policy makers, organisational agents, academics, and managers on the critical understanding and research on intellectual property; and (b) to promote the development of the newly cultivated research field.The journal publishes contributed and invited articles, case studies and patent reviews; technical notes on current IPR issues; literature review; world literature on IPR; national and international IPR news, book reviews, and conference reports. At

Received 26 August 2013, revised 18 October 2013, online published 17 January 2014

present the journal is abstracted and indexed by Scopus, EBSCOhost Electronic Journals Services (EJS), Directory of Open Access Journal (DOAJ), Library and Information Science Abstracts Database (LISA) and Legal Information Institute of India (LIIofIndia) databases. National Bureau of Plant Genetic Resources (NBPGR, New Delhi) have included 14 articles from various issues of the journal as the study material for its course PGS-503 on intellectual property and its management in agriculture. Jawaharlal Nehru University's M Phil/ PhD's foundation course on IPR also has included some articles from the Journal as essential reading material. The Journal was included in the Science Citation Index-Expanded (SCIE) in the year 2010 and the impact factor of journal as per the Journal Citation Reports 2011 is 0.343.

3. LITERATURE REVIEW

Individual journals have been the focus of several bibliometric studies in the past decade. For instance Narang[2] analysed 8396 citations appended to 737 articles published in *Indian Journal of Pure and applied Mathematics* published during 1998-2002 and found that contributions are increasing in successive volumes, journal articles are the most cited and Delhi University was the top contributors during the period of study. Jena[3] made a bibliometric study of 8114 citations appended to 507 articles published in *Indian Journal of Fibre and Textile Research* published during 1996-2004 found that rate of receipt and acceptance is six months and acceptance and publication is 11 months. Citation pattern of *Indian Journal of Environmental Protection* for articles published in 1994, 1999 and 2004 was studied by Biradar[4] and the study indicates that team research was preferred as compared to solo research. Articles published in *Journal of the Indian Society for Cotton Improvements* were analysed by Dixit and Katare[5]. Authors found that 450 journals were cited in 327 articles published during 1995-2004. Of these 74 % were journals originated from abroad. Articles published in *Pramana: A Journal of Physics* during 1982-2006 was made by Kumar[6], *et al.* Authors found that the number of articles being published in the journal is increasing, but the impact factor of the journal is constant. Garg[7], *et al.* developed a scientometric profile of the journal *Mausam* based on 369 items published in it during 2003-2006 and found that impact factor of the journal for 2005 and 2006 was higher than several journals being included from India in Web of Science and recommended its inclusion in it. Kumar & Kumar[8] examined 8093 citations given in the *Journal of Oil Seed Research* during the period 1993-2004 and found that 50% citations were contributed by 20 periodicals. Kulkarni[9], *et al.* examined citations in *Indian Journal of Pharmaceutical Education and Research* for a period of 1996-2006 and like other studies it was found that journals are the prominent source of citations. Kumar & Moorthy[10] analysed *DESIDOC Journal of Library and Information Technology* for 2001-2010 and found that the number of papers published by the journal has increased substantially and the average length of papers was 6-10 pages. Papers from single authors formed the major chunk of total papers published and government research institutes and universities were the main contributors. The present study makes a bibliometric analysis of the *Journal of Intellectual Property Rights* since its publication in 1996 to 2012 and is an extension of the study undertaken by Swain & Panda[11] for 2002-2010.

4. OBJECTIVES

The objectives of the study are to:

- Examine the number of contributions and the references cited during 1996-2012;
- Examine pattern of authorship and how it has changed over a period of time;
- Examine the geographical distribution of articles;
- Identify the most prolific institutions and prolific authors;
- Examine average length of articles in terms of pages; and
- Examine the citations earned by the articles published from 2002 onwards.

The study is based on the contributions listed under the article section of the issues of the source journal.

5. DATA AND METHODOLOGY

The source journal is an open access journal and is available on the CSIR-NISCAIR website[12]. The data for the study was downloaded from the said website for 17 years from volume 1(1996) to volume 17(2012). The data consists of year of publication with its volume number, name of the author with their affiliations and its geographical location, total count of authors, length of the articles in terms of the number of pages, number of references cited by the article. The data was downloaded on MS Excel sheets. Citations earned by the articles from 2002 onwards were examined from *Google Scholar*, and recorded on the same Excel sheet. Data was analysed to meet the objectives mentioned above. Complete count method has been followed for the analysis of the data. Under this method, each country or state or institution or authors in multi-authored papers are given unit credit for their contributions and thus the number of contributions is more than the actual

contributions. In the present case also, the actual number of papers published was 605 which have increased to 847 using complete count method.

6. RESULTS AND DISCUSSIONS

The results of various parameters listed under the objectives are:

6.1 Distribution of Output and References

Since its launch in 1996, the journal is appearing on schedule regularly. Table 1 presents the data on the number of articles, and the references received by each volume during 1996-2012.

6.1.1 Distribution of Articles

During the period of study the journal published 605 articles in 102 issues in 17 volumes. Thus, on an average the journal published about 36 articles in each volume, which means approximately 6 articles per issue. Data presented in Table 1 indicates that till 2004 the journal published less than average number of articles. However, the number of articles published 2005 onwards have increased consistantly (Fig. 1). The highest number of articles (56) were published in Volume 17 (2012) closely followed by the number of articles in volume 16 (2011). The pattern of publication of papers during 1996-2013 in blocks of two years is also shown. It indicates that except a dip in the third block (2000-2001) there is a constant increase in the number of papers published by the journal. It implies that the journal is getting popular among the community of scientists, technologists, and policy makers. This is also reflected by 5 special issues published by the journal during 2005-2012. These issues dealt with technology transfer with IPR (September 2005), patents and emerging technologies (January 2007), TRIPS and pharmaceutical industry (September 2008), IPR and agriculture (March 2011) and leveraging IPR for business advantage and (September 2012). These issues were included 15, 17, 17, 18, and 16 articles respectively.

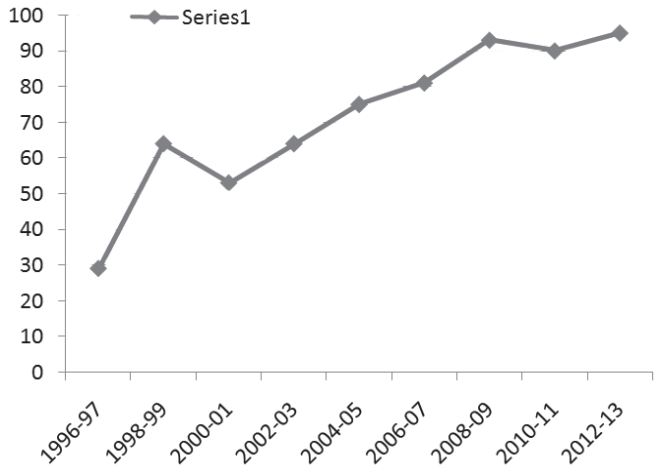

Figure 1. Pattern of inflow of papers (%) during 1996-July 2013.

Table 1. Distribution of contributions and reference according to year/volume

Year (volume)	No. of contributions	No. of references	Reference/paper
1996 (1)	15	51	3.4
1997 (2)	14	83	5.9
1998 (3)	36	107	2.9
1999 (4)	28	369	13.2
2000 (5)	24	127	5.3
2001(6)	29	349	12.0
2002 (7)	32	338	10.5
2003 (8)	32	784	24.5
2004 (9)	29	923	31.8
2005 (10)	46	1153	25.1
2006 (11)	37	1342	36.3
2007 (12)	44	1823	41.4
2008 (13)	52	1408	27.1
2009 (14)	41	1024	24.9
2010 (15)	37	951	25.7
2011 (16)	53	1261	23.8
2012 (17)	56	1645	29.4
Total	**605**	**13738**	**22.7**
2013 (18)	**39***		

***Published in the first four issues of 2013 and have not been included in the analysis. These have been used for plotting the output in Figure 1 to examine the pattern of growth.

6.1.2 Distribution of References

References are an important part of any publication. These provide the reader with the background information about the topic being discussed in the paper. At the same time these assure the reader that the author(s) are familiar with the history of the topic being investigated and reported. Table 1 also provides data on the number of references cited in each volume. It reveals that the number of references per paper is increasing over the period of time. However, the pattern of references is chaotic. The average number of references were about 23. Analysis of data indicates that before 2003, the number of references per paper is less than the average, but after that these have increased. Among all the years the highest number of references per paper is for volume 12 (2007) and the lowest number of references per paper is in volume 3 (1998). The number of references is low in the beginning because the journal had just started and the field of IPR was nascent to India. These have increased over the period of time as the awareness of IPR is growing with time.

6.1.3 Authorship Pattern of Contributors

Earlier, authors used to publish articles independently but now most of the research work being carried out is in collaboration and one or more number of authors together publish an article. Statistical data indicate that percentage of research produced by teamwork has been growing steadily for more than half a century[13]. Study of authorship pattern deals with the kind of authors and the nature of collaboration among them and collaborative trends of authors. The extent of collaboration depends on the number of participants involved in the work. Collaboration is high in the field of science, technology and medicine than that of social sciences and humanities. Collaboration is observed the least in the field of humanities. Table 2 provides the details about the authorship pattern among the articles in the source journal for the period 1996-2012 in two blocks. Data presented in Table 2 indicates highest number (67.8 %) of articles have been contributed by single authors and the rest by two or more than two authors respectively. This indicates that like in other discipline of social sciences here also single authored papers dominate. Authors calculated the values of co-authorship[14] (CAI) for two blocks of output to study how the pattern of authorship has changed during 2005-2012 as compared to 1996-2004. The value of CAI given in Table 2 indicates that the proportion of two and more than two authors have increased in the second block as compared to the first block. The change of the pattern of authorship during 1996-2012 is depicted in Fig. 2. It also indicates that the proportion of single authors have decreased from over 90 % to about 60 % in the later period, while the proportion of two and multi-authored papers have increased.

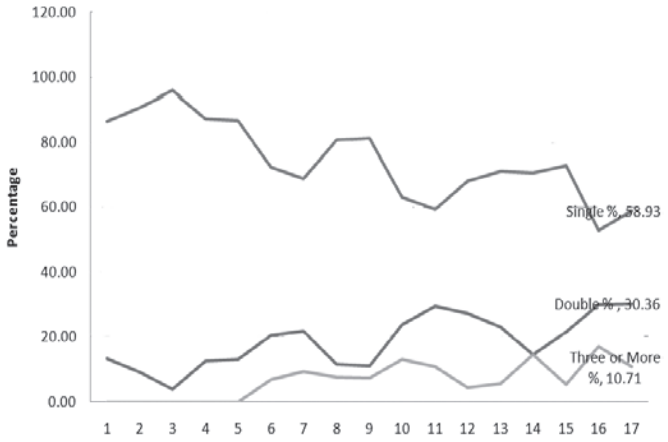

Figure 2. Change (%) in authorship pattern during 1996-2012.

6.1.4 Geographical Distribution of Contributions

Anonymous articles or articles for which the author location is not mentioned have been included in the category of others. Table 3 presents the data on the geographical distribution of the published papers. Based on the complete count of articles it is observed that 847 articles were contributed by Indian authors and authors from abroad. Of these, Indian authors contributed 71 % of the articles and the rest 29 % were contributed by authors from abroad. Contributions from abroad were from 38 countries. Of these, the USA contributed the highest number of papers followed by UK, China, South Korea and Switzerland. Sixteen countries, whose name has not been listed in the table contributed one paper each.

6.1.5 State-wise Indian Contributions

Data was also analysed to identify the Indian states those published papers in the journal.

Table 2. Authorship pattern of contributions

Block years	Single authored papers (CAI)	Two authored papers (CAI)	Papers with more than 2 authors (CAI)	Total
1996-2004	175 (116)	29 (65)	9 (52)	**213**
2005-2012	235 (91)	93 (121)	38 (128)	**366**
Total	**410 (67.8)**	**122 (20.2)**	**47 (7.8)**	**579**

*Does not include 26 annonymous papers

Table 3. Geographical distribution of contributions

S. No.	Name of country	No. of contributions (%)
1.	India	602 (71.1 %)
2.	USA	55 (6.49 %)
3.	UK	36 (4.25 %)
4.	China	16 (1.89 %)
5.	South Korea	14 (1.65 %)
6.	Switzerland	14 (1.65 %)
7.	Iran	8 (0.94 %)
8.	Brazil	5 (0.59 %)
9.	Taiwan	5 (0.59 %)
10.	8 countries with 4 papers each	32* (3.77 %)
11.	2 countries with 3 papers each	6** (0.71 %)
12.	4 countries with 2 papers each	8*** (0.94 %)
13.	16 countries with 1 paper each	16 (1.89 %)
14.	Others	30 (3.54 %)
Total		**847**

*Australia, Canada, Germany, Malaysia, Singapore, Spain, Sri Lanka and the Netherlands.
** Chile and Italy,*** Finland, Lesotho, New Zealand and Sweden

Figure 3 presents the graphical distribution of output according to different states. The graph indicates that among all the states, Delhi published the highest number (31.2 %) of papers followed by West Bengal, Karnataka, and Andhra Pradesh. Himachal Pradesh contributed the least number of papers. One possible reason for more papers from Delhi may be the concentration of academic and R&D institutions in it.

6.1.6 Most Prolific Institutions

Total output excluding anonymous and individual papers came from 272 institutions located in India and abroad. These institutions were scatted among academic institutions (universities and colleges), R&D institutions, law institutions/universities, private

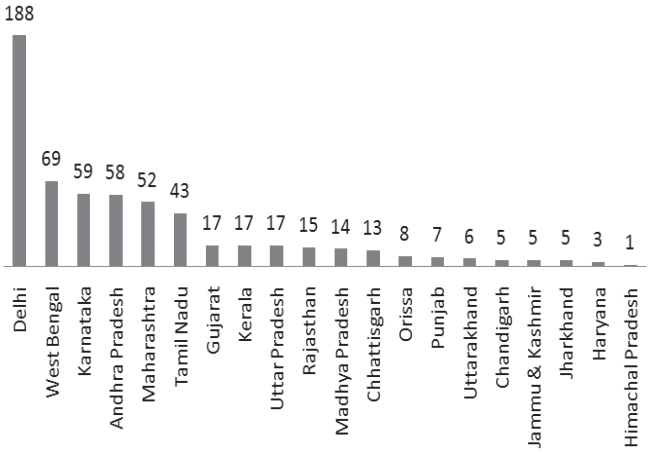

Figure 3. Geographical distribution of contributions by states

legal firms and others which could not be classified among these. Like distribution of scientific output[15], here also the share of academic institutions was the highest (204) followed by research institutions (185), legal educational institutions (164), and private legal firms (76). The remaining 218 papers were scattered among others (130), individuals (62) and anonymous (26). Several of these institutions contributed only one paper each, while some others contributed between 2-9 papers. Details of their contributions along with the names of prolific institutions are given in (Table 4). However, the output is concentrated among 14 institutions which contributed 10 or more papers and their contribution is more than one-fourth (27.3 %) of the total output. Of the prolific institutions seven were law educational institutions and five were R&D institutions, of which four belonged to CSIR. Also, the share of CSIR and its constituent R&D institutions was the highest. Their share in the total output excluding institutions not listed in Table 4 is 74 publications. However, the total share of CSIR and its constituent units is 94 publications. One possible reason for this may be that CSIR is the agency that files maximum number of patents from India and the scientists of CSIR are well aware of the IPR laws.

6.1.7 Most Prolific Authors

The total output was contributed by 616 authors from India and abroad. Among the contributing authors 93 were women authors, which is quite a significant number as the women authors constitute about 15 % of the total authors. Table 5 presents the data on the contribution of prolific authors. The nine prolific authors contributed 114 paper and the rest 733 papers were contributed by 607 authors. Authors also examined the citations of the prolific authors during 2002-2012 using *Google Scholar*. It was found that among all the authors V.K. Gupta of CSIR-NISATADS received the highest citations.

6.1.8 Length of Articles

Journals often mention about the number of words in the instruction to authors and the author(s) is supposed to keep the article length within that limit. Accordingly the length of articles submitted to the journal under study varied from 5000-7000 words. An analysis was made of the length of articles in terms of page numbers as word counts were not available. For this the page lengths have been divided into three categories i.e. 1-5, 6-10 and more than 10. Data for the same in two blocks (volume 1-9 and volume 10-17) is presented in Table 6. The data has been divided into two parts to examine how the proportion of page numbers has changed in two blocks. An analysis of data

Table 4. Most prolific institutions

S. No.	Name of institute	No. of papers
1.	National University of Juridical Sciences, Kolkata	46
2.	National Institute of Science, Technology and Development Studies, New Delhi	30
3.	Council of Scientific and Industrial Research (CSIR), New Delhi	23
4.	Indian Council of Agricultural Research (ICAR), New Delhi	18
5.	Manipal University, Karnataka	17
6.	Hidaytullah National Law University, Raipur	13
7.	National Law school of India University, Bangalore	11
8.	NALSAR University of Law, Hyderabad	11
9.	National Law Institute University Bhopal	11
10.	National Institute for Interdisciplinary Science and Technology, Thriuvananthapuram	11
11.	National Institute of Science Communication and Information Resources, New Delhi	10
12.	National Law University, Delhi	10
13.	Symbiosis Law college Pune	10
14.	World Intellectual Property Organisation (Switzerland)	10
	Total	**231**
	Number of institutions contributing 9 papers each =1	9
	Number of institutions contributing 8 papers each =5	40
	Number of institutions contributing 7 papers each =1	7
	Number of institutions contributing 6 papers each =3	18
	Number of institutions contributing 5 papers each =5	25
	Number of institutions contributing 4 papers each =24	96
	Number of institutions contributing 3 papers each =23	69
	Number of institutions contributing 2 papers each =48	96
	Number of institutions contributing 1 papers each = 148	148
	Anonymous and Individual papers	108
	Total	**616**
	Grand Total	**847**

Table 5. Highly prolific authors

S. No.	Name of the author	Output	Citations (2000-12)
1.	M D Nair*, Private Consultant, Chennai	28	15
2.	V K Gupta, CSIR-NISTADS, New Delhi	24	35
3.	Zakir Thomas**, CSIR, New Delhi	23	4
4.	Sudhir Kochhar, Indian Council of Agricultural Research, New Delhi	9	14
5.	Deli Yeng, Trinity University, USA	7	0
6.	Trevor Cock, Bird and Bird LLP, London, UK	7	5
7.	M M S Karki, CSIR-NISCAIR, New Delhi	6	4
8.	R A Mashelkar, CSIR, New Delhi	5	11
9.	K C Kankanala, Brain League IP Services, Bangalore	5	0
	Total	**114**	
	Number of authors contributing 4 papers each = 10	40	
	Number of authors contributing 3 papers each = 19	57	
	Number of authors contributing 2 papers each = 58	116	
	Number of authors contributing 1 paper each = 520	520	
	Grand Total	**847**	

* Earlier with Southern Petrochemicals Industries Corporations LTD, Chennai

** Earlier with the Government of India and joined CSIR in 2008

indicates that of the 605 articles published in the journal during 1996-2012 it is observed that more than half (52 %) of the contributions were in the category of page length 6-10 pages followed by page lengths of more than 10 pages. Page length of 1-5 pages was the minimum. Further analysis of data indicates that 6-10 page share has increased in the second block while of other two categories have declined in the later block.

Table 6. Length of articles in term of page numbers

Vol. No.	Pages (1-5)	Pages (6-10)	Pages >10	Total
1-9	66 (28 %)	98 (41 %)	75 (31 %)	**239**
10-17	69 (19 %)	214 (59 %)	83 (22 %)	**366**
Total	**135 (22 %)**	**312 (52 %)**	**158 (26 %)**	**605**

6.1.9 Citation Pattern of Articles as Reflected in Google Scholar

Citation analysis is the major thrust area of bibliometric research. It deals with the analysis of the bibliographic references which generally appear at the end of the scientific communication. Citation analysis measures the impact of each article by counting the number of times they were cited by other articles. High levels of citations to a scientific publication have been interpreted as signs of scientific influence, impact, and visibility. An author's visibility can be measured by determining how often these publications have been cited in other authors' publications. In the present case the citations were examined using *Google Scholar*. Citations were available in *Google Scholar* from Volume 7(2) onwards. Table 7 provides the data on the pattern of citations for different volumes. The data presented in Table 7 indicates that the articles published in volumes 7 and10 of the journal have the highest average citation. Volumes 16 and 17 have low average citations because of the smaller citation window for these.

Table 7. Distribution of citations (volume-wise)

Volume No. (No. of papers)	No. of citation	Average citation
7 (32)	62	2.0
8 (32)	35	1.1
9 (29)	42	1.5
10 (46)	98	2.1
11(37)	42	1.1
12 (44)	40	0.9
13 (52)	69	1.3
14 (41)	54	1.3
15 (37)	51	1.4
16 (53)	39	0.7
17 (56)	11	0.2
Total (459)	**543**	**1.2**

7. CONCLUSIONS

- The *Journal of Intellectual Property Rights* began as a bimonthly publication in 1996 and its popularity among the scientists, technologists and policy makers has increased as witnessed by the number of papers published over the past 17 years. The average number of references per article is about 23 and the number of references per article has increased over the period of time.
- Pattern of authorship of papers indicates that the highest contributions are single authored. However, the share of single authored papers has declined with time and the two or multi-authored papers has increased.
- As reflected by the geographical distribution of articles it appears that the journal is international in scope as about 29 % articles are from abroad excluding anonymous articles. Among the Indian contributions, it is seen that the authors from Delhi alone have contributed approximately 32 % of total Indian contributions which is the highest among Indian contributions. The high percentage may be owing to the fact that the journal is published form Delhi by CSIR-NISCAIR. It also indicates that Delhi is a strong hub for IPR studies.
- Among the foreign contributions, the United States of America is the highest contributor and about 4.25 % of total contributions to the journal which is about 17 % of total foreign contributions. The reason may be high degree of awareness among the US policy makers about the IPR.
- Most of the prolific institutions are law universities/ institutions. However, CSIR and one of its institutions are among the three top ranking institutions. Similarly, about half of the output of the prolific authors is by CSIR scientists. Also among the prolific authors CSIR-NISTADS author was the top cited author.
- More than half of the articles have a page length of 6-10 pages. Thus, the most of the articles are medium sized which is liked by the majority of the reader. It indicates that the care is taken to hold the reader's attention.

- Citation count of the article as seen from *Google Scholar* shows that the average citation earned by each articles published after March 2002 is 1.2. Among all the published volumes10 and 7 have almost same rate of citation.

REFERENCES

1. Kannan, N. Importance of intellectual property rights. *Inter. J. Intellect. Prop. Rights*, 2010, **1**(1), 1-5.
2. Narang, A. *Ind. J. of Pure and App. Math.*: A bibliometric study. *Annals Lib. Inf. Stud.*, 2004, **51**(1), 28-38.
3. Jena, K. L. A bibliometric analysis of the journal: *Indian Journal of Fiber and Textile Research* 1996-2004. *Annals Lib. Inf. Stud.*, 2006, **53**(1), 22-30.
4. Biradar, B.S. *Indian Journal of Environmental Protection*: A study of citation pattern. *Annals Lib. Inf. Stud.*, 2006, **53**(3), 109-13.
5. Dixit, S. & Katare, V.V. A bibliometric analysis of the *Journal of Indian Society for Cotton Improvement* 1995-2004. *Annals Lib. Inf. Stud.*, 2007, **54**(2), 119-23.
6. Kumar, A., *et al. Pramana: A Journal of Physics*, *Annals Lib. Inf. Stud.*, 2008, **55**(1), 52-61.
7. Garg, K. C.; Sharma, P. & Kumar, S. Scientometric profile of the journal *Mausam. Annals Lib. Inf. Stud.*, 2008, **55**(1), 76-80.
8. Kumar, S. & Kumar, S. Citation analysis of *Journal of Oil Seeds Research* 1993-2004. *Annals Lib. Inf. Stud.*, 2008, **55**(3), 35-44.
9. Kulkarni, A.P.; Poshett, B. & Narwade, G.R. *Indian Journal of Pharmaceutical Education and Research* 1996-2006: A bibliometric study. *Annals Lib. Inf. Stud.*, 2009, **56**(4), 242-48.
10. Kumar, Manoj & Moorthy, A.L. Bibliometric analysis of *DESIDOC Journal of Library and Information Technology* during 2001-2010. *DESIDOC J. Lib. & Inf. Technol.*, 2011, **31**(3), 203-08.
11. Swain, D.K. & Panda, K.C. *Journal of Intellectual Property Rights* 2002-2010: A bibliometric study. *Chinese Librarianship: An International Electronic Journal*. www.iclc.us/cliej/c135SP.pdf/ (accessed on 1 May 2013).
12. NISCAIR. http://nopr.niscair.res.in/handle/123456789/45/.
13. Clarke, B.L. Multiple co-authorship trends in scientific papers, *Science*, 1964,**143**, 822-24.
14. Garg, K.C. & Padhi, P. A study of collaborations in laser science and technology. *Scientometrics*, 2001, **51**, 415-27.
15. Garg, K.C.; Dutt, B. & Kumar, S. Scientometric profile of Indian science as seen through *Science Citation Index*. *Annals Lib. Inf. Stud.*, 2006, **53**(3), 114-25.

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