



**SCIENTOMETRIC APPRAISAL OF THE JOURNAL OF INTELLECTUAL PROPERTY RIGHTS**

***AVALIAÇÃO CIENTOMÉTRICA DO PERIÓDICO DE DIREITOS DE PROPRIEDADE INTELECTUAL***

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**ABSTRACT:** This study examines the Scientometrics appraisal of the Journal of Intellectual Property Rights (JIPR) for eight years from 2003-2010. This paper analyses the year wise distribution of articles and citations, authorship pattern, the degree of collaboration, the subjects covered and the length of the articles in the journal. The results indicate that the average number of contribution per issue is 6.46, the maximum number of contribution of article is by single author and patents as subject is covered with more number of articles. The maximum length of an article goes to 13.59 with the minimum of 6.75 pages. It is found that this is an important journal in the field of IPR, which every organization should procure and make it available to the users.

**KEYWORDS:** Bibliometrics; Scientometrics; IPR; Patents; Copyright; NISCAIR.

**RESUMO:** O presente estudo analisa a avaliação cientométrica do Jornal de Direitos de Propriedade Intelectual (JDPI) por oito anos, de 2003-2010. Este artigo analisa a distribuição anual de artigos e citações, padrão de autoria, o grau de colaboração, os assuntos abordados e o comprimento dos artigos na revista. Os resultados indicam que o número médio de contribuição por edição é 6,46, o número máximo de contribuição do artigo é por autor único e patentes como sujeito é coberto com o maior número de artigos. O comprimento máximo de um artigo chega a 13,59 páginas, e o mínimo de 6,75. Verificou-se que este é um periódico importante no campo dos DPI, que cada organização deve adquirir e tornar disponível para os usuários.

**PALAVRAS-CHAVE:** Bibliometria; Cientometria; DPI; Patentes; Direitos Autorais; NISCAIR.

## 1 INTRODUCTION

Alan Pritchard first coined the term Bibliometrics in 1969 in preference to statistical bibliography, as he felt that the latter term has some built in ambiguity in it. He defined Bibliometrics as “the application of mathematical methods to books and other

media of communications”. The origins of statistical studies on scientific bibliometrics can be traced back to the twenties of the last century. In 1926, Alfead J Lotka (1926) published his pioneering study on the frequency distribution of scientific productivity. At almost the same time in 1927, Gross and Gross published their citation based study in order to aid the decision which elementary periodicals should best purchased by small college libraries. In particular, they examined 3633 citations from the 1926 volume of the *Journal of the American Chemical Society*. This study is considered the first citation analysis, although it is not a citation analysis in the sense of present-day bibliometrics. Eight years after Lotka’s article appeared, Bradford (1934), published his study on the frequency distribution of papers over journals. He established a relationship concerning the frequency distribution of papers over journals in particular.

The need for the evaluation of productivity and effectiveness of scientific research became imperative and time was now ripe for reception of his ideas since globalization of science communication, the growth of knowledge and published results, increasing specialization as well as growing importance of interdisciplinary in scientific research reached a stage where scientific information retrieval began to fail and funding systems based on personal knowledge and evaluations by peer reviews became more and more difficult. The Science Citation Index (SCI) and more recently *Web of Science* and Scopus have become the most generally accepted basic source for bibliometrics and scientometrics studies. Scientometrics is a branch of the “Science of Science”. Nalimov and Mulchenko (1989) defined ‘as a sub-field which applies quantitative methods to the study of science as an information process’. Haitun treats ‘as a scientific discipline, which performs reproducible measurements of scientific activity and reveals its objective quantitative regularities’. This article deals with the scientometric appraisal of “Journal of Intellectual Property Rights” for the years 2003-2010.

## **2 OBJECTIVES**

The objectives of this study, is to analyze the 48 issues (2003-2010) of the “Journal of Intellectual Property Rights” and

- To find out the year wise distribution and growth trend

- To find out the statistics of distribution of contribution in various fields of the subjects in this particular journal.
- To find out the authorship pattern of contributions
- To find out the degree of collaboration
- To find out the number of references cited.
- To find out maximum length of articles
- To quantify research and growth of different areas of knowledge.

### **3 INTELLECTUAL PROPERTY RIGHTS (IPR)**

Intellectual Property Rights (IPR) means that the protection of the legal rights of the intellectual property. Patents have come to be recognized in the modern times as an important tool, not only to promote inventiveness but also to ensure adequate returns to the investments made. IPR has also become important for technological, industrial and economic development of a country. IPR as a system of rights is a relatively new comer. It is to be noted IPR is concerned with the subject “technology” which is not tangible. The ownership and transactions in other forms of property is government by law, so is the case with IPR thus, specific laws to protect IPR in a country are enacted based on the degree of balancing the conflicting interest. The Trade Related Aspects of Intellectual Property Rights (TRIPS) which are recognized by the agreement of World Trade Organizations are Patents, Designs, Trade Marks, Copyrights, Geographical Indications, Integrated circuits and trade secret.

### **4 JOURNAL OF INTELLECTUAL PROPERTY RIGHTS**

This journal is a bi-monthly publication from NISCAIR, New Delhi started in 1996 keeping in view the importance of IPRs and their protection. The objective of the journal is two-fold: firstly, to enhance communication between policy makers, organizational agents, academics and managers on the critical understanding and research on intellectual property (IP); secondly, to promote the development of the newly cultivated research field. The journal publishes contributed / 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.



## **5 SCOPE AND METHODOLOGY**

The total 48 issues of Journal of Intellectual Property Rights (JIPR) (2003-2010) were selected for the study. Information about each contribution such as number of author(s), number of references, page numbers, volume number, issue number, etc. were recorded and analyzed for making observations. The data has been calculated and represented in Tables. Welcome address, Inaugural address, introductory address, presidential address, keynote address, valedictory address of seminar / conference were excluded while counting the number of articles. In order to decide the subject field, the title and the thought content of the contributions were studied. The citations were counted by the type of document and volume wise. Based on analysis, a ranked list of cited journal is prepared. Attempt has been made to do a scientometric appraisal of all 48 issues (2003-2010) of the “JIPR”.

## **6 LITERATURE REVIEW**

Ramesh (2007), in his article on “Indian Journal of Information, Library and Society (2000-2006): A Bibliometric study” discussed the various features of the issues of the quarterly Indian Journal of Information, Library and Society. The study on authors emphasized the encouragement given to more reviews, suggested progressive authors, subject-wise analysis of book reviews, suggested for organized team research with more citations to be covered. Ansari et.al (2006), in their article on “Alzheimer’s Disease: A Bibliometric study” analyzed the literature collected from Index Medicus and explored its distribution from different parameters like country, authorship production and relate literature to classical law.

Rajendran Pillai, (2005), in his article on “Bibliometric analysis of KELPRO Bulletin’ demonstrated bibliometric analysis of articles and references provided at the end of each article contributed in KELPRO Bulletin from 1997-2004. The analysis covered mainly the number of articles, authorship pattern, subject-wise distribution of articles, average number of references per articles, forms of document cited, year wise distribution of cited journals, rank list of journals, etc. All the studies pointed towards the merits and weakness of the journal which would be helpful for its further development. Roy (2004), in his article on” Institutional Collaboration in Indian Library and Information Science Journal

(1991 to 2000)” discussed the study which was based on 1637 research papers in Library and Information Science (LIS) published in 10 Indian LIS Journals during 1991-2000. It was found that institutional collaboration in Indian LIS field was not high. 72% articles were contributed by single institute only 11% articles are published jointly by two institutions, 0.6% by three and 0.60% contributed jointly by four institutes. In Indian LIS journal, foreign collaboration with Indian institute was very negligible. Article published in only two journals have collaboration between an Indian institute and foreign institute. Those journals were Information Studies and SRELS Journal of Information Management.

Verma (2004), in her article on “Analysis of Contribution of IASLIC Bulletin” observed the 209 contributions of 10 Volumes of IASLIC Bulletin (Vol.36-45) which is an official publication of Indian Association of Special Libraries and Information Centers (IASLIC) and a leading journal in LIS. The article gave information about average number of contributions in each volume of journal, studied authorship pattern, state-wise and institution-wise distribution of contributions. It analyzed the contribution of IASLIC Bulletin in various field of subjects. Study also analyzed the citation appeared in 10 volumes of IASLIC Bulletin. Study gave information about average number of citations per contribution and the type of publication cited with their quantitative data, it presented a list of cited journals. The study showed a comparative study of all 10 volumes of the journal.

Hazarika et.al (2003), in their article on “Bibliometric analysis of Indian Forester: 1991-2000” discussed different parameters of the journal (Indian Forester) viz year-wise distribution of papers, distribution of papers among different types of organization, institution wise distribution among the Indian Council of Forestry Research & Education (ICFRE) institutes, state-wise distribution of papers in Indian territory and the foreign contributions, authorship pattern, number of citations and the length of the article are studied. Krishnamoorthy, et.al., (2009), have described in their article on “Bibliometric analysis of literature on diabetes (1995-2004)”, the maximum number of records (13244) was during 2003, followed by 12690 in 2002 and 11061 in 2001. Relative Growth Rate (RGR) was found to be decreasing year-wise. The Doubling Time (DT) was found to be increased every year. Ranking of the Journals based on the quantum of research output on diabetes during 1995-2004” showed that USA was the largest contributor of literature on diabetes. The research productivity of diabetes conforms to Bradford’s Law of scattering. Keshava et.al., (2008), in their article on “Papers in select Sociology Journals

(1999-2004): A bibliometric analysis” studied the growth of literature in the filed of sociology and related authorship pattern; value of group co-efficient for collaborative research and geographical distribution of paper during 1999-2003. The study showed that highest numbers of papers (86) were published in 2001 and 2003. The number of single author paper is highest, out at 84% out of total 475. The value of group co-efficient (GP) was only 0.16. The degree of collaboration among the co-authors was minimum (0.20) in article written by five authors and maximum (0.12) in two author papers.

## 7 ANALYSIS AND FINDINGS

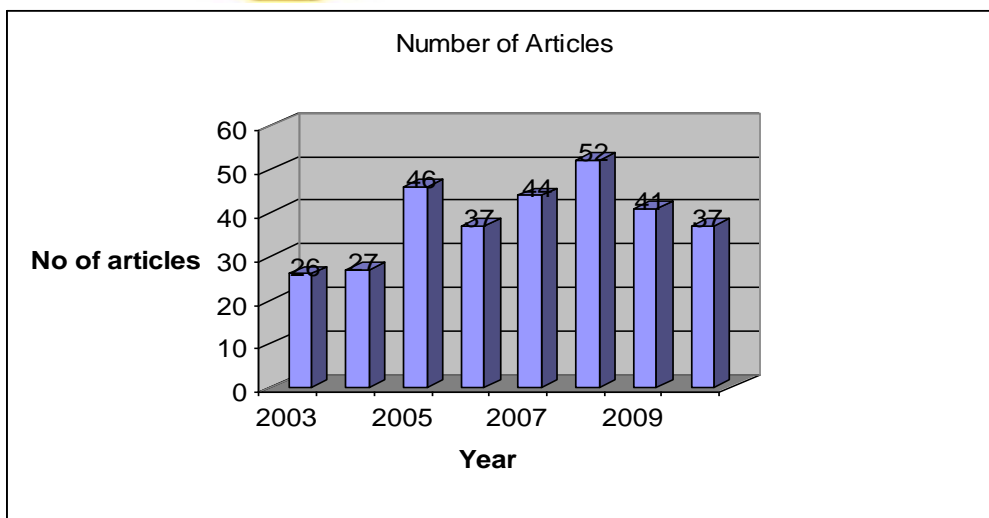
The data has been collected from “Journal of Intellectual of Property Rights” for eight years (2003-2010). They are categorized below in Table 1 for the total number of issues, articles and their percentage.

**TABLE 1: YEAR-WISE DISTRIBUTION OF PUBLICATIONS.**

<b>Year</b>	<b>No. of issues</b>	<b>Number of Articles</b>	<b>Percentage %</b>
2003	6	26	8.38
2004	6	27	8.70
2005	6	46	14.84
2006	6	37	11.93
2007	6	44	14.19
2008	6	52	16.77
2009	6	41	13.23
2010	6	37	11.94
<b>Total</b>	<b>48</b>	<b>310</b>	<b>100</b>

From the above it is found that average number of contribution is 6.46 (310/48). The same is depicted as Figure 1 below:





From the above Table and Fig 1, it is observed that the highest number of contribution is 52 (16.77%) in the year 2008 and lowest number of contribution is 26 (8.38%) in year of 2003.

### 7.1 Subject-wise distribution of papers

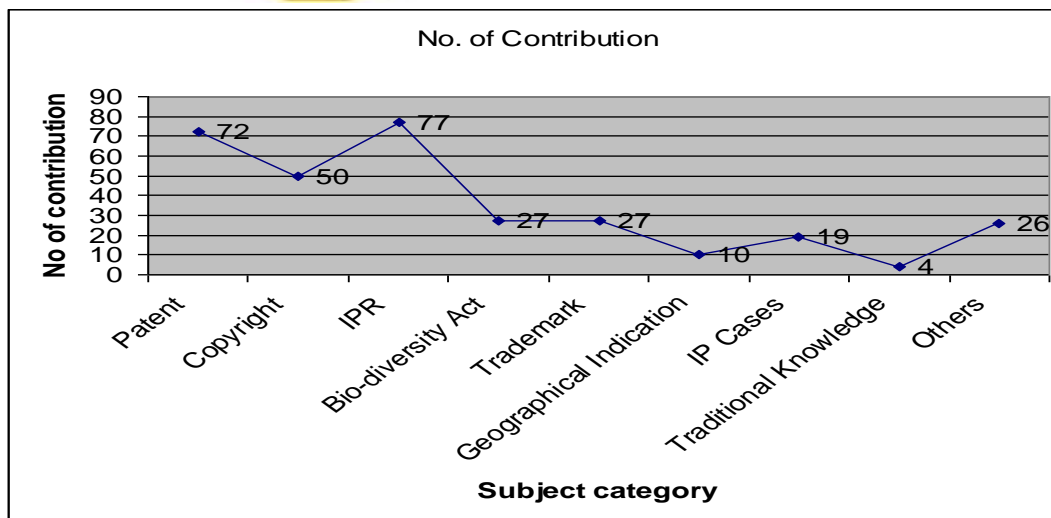
The data has been collected for different categories of subjects covered in the JIPR. The same is below in Table 2.

**Table 2: DISTRIBUTION OF SUBJECT FIELDS OF JIPR.**

S No	Subject field	No. of contributions	Percentage
1	Patent	72	23.07
2	Copyright	50	16.02
3	I P R	77	24.68
4	Bio-diversity Act	27	8.65
5	Trademark	27	8.65
6	Geographical Indication	10	4.44
7	I P Cases	19	3.20
8	Traditional Knowledge	4	1.28
9	Others	26	8.33
TOTAL		312	100

Table 2 shows, out of 312 contributions the highest number of contribution is from IPR. The same is depicted as graph below:

**Figure 2: DISTRIBUTION OF SUBJECT FIELDS OF JIPR.**



The data in relation to authors have been collected for single author, two authors, three authors and more than three authors, which is in Table 3

**TABLE 3: AUTHORSHIP PATTERN OF CONTRIBUTIONS.**

No. of authors	No. of contributions	Percentage
One	216	69.68
Two	67	21.61
Three	18	5.81
>Three	9	2.90
<b>Total</b>	<b>310</b>	<b>100</b>

Table 3 reveals that the contributions of single author are more i.e.216 (69.68%) than those of double, triple or more than triple authors, while the multiple authorship patterns has 67 (21.61%). The multiple authorship patterns are further analyzed to shed more light on the pattern of collaboration in Table 4 and Table 5.

Publication with two authors is 67 (21.61%) papers followed by three authorship pattern with 18 (5.81%) and more than three authorship pattern have 9 (2.9%) papers.

**TABLE 4: AUTHORSHIP PATTERN OF CONTRIBUTIONS (YEAR-WISE).**

Vol. No.	1 Author	%	2 Author	%	3 Author	%	> 3 Author	%
2003	21	9.72	3	4.48	1	5.56	1	11.11
2004	22	10.18	3	4.48	2	11.11	-	-
2005	30	13.89	10	14.92	5	27.77	1	11.11
2006	22	10.18	11	16.41	2	11.11	2	22.22
2007	30	13.89	12	17.91	2	11.11	-	-
2008	35	16.20	14	20.89	-	-	3	33.33



2009	29	13.42	6	8.95	4	22.22	2	22.22
2010	27	12.50	8	11.94	2	11.11	-	-
<b>Total</b>	<b>216</b>	<b>100</b>	<b>67</b>	<b>100</b>	<b>18</b>	<b>100</b>	<b>9</b>	<b>100</b>

Table 4 highlights authorship pattern of contributions year- wise. It indicates that out of 216 contributions of single author, the year 2008 has the highest number i.e. 35 (16.2%) and in 2003 the lowest number i.e. 21 (9.72); out of 67 contributions by two authors year 2008 have the highest number i.e. 14 (20.89%) and year 2003 & 2004 has the lowest numbers i.e. 3 (4.48 %); out of 18 contributions by the three authors the year 2005 have the highest number i.e. 5 (27.77%) and year 2003 has the lowest number i.e. 1 (5.56). In year 2008 there are 3 (33.33%) contributions by more than 3 authors and in year 2003 & 2005 only 1 and 1 contributions are there by more than three authors.

**TABLE 5: SINGLE AUTHORED vs MULTI-AUTHORED PAPERS.**

Year	With single author		With Multi-author		Total Contributions
	No. of papers	%	No. of papers	%	
2003	21	9.72	5	5.31	26
2004	22	10.18	5	5.31	27
2005	30	13.89	16	17.02	46
2006	22	10.18	15	15.95	37
2007	30	13.89	14	14.89	44
2008	35	16.20	17	18.08	52
2009	29	13.42	12	12.76	41
2010	27	12.50	10	10.63	37
<b>Total</b>	<b>216</b>	<b>100</b>	<b>94</b>	<b>100</b>	<b>310</b>

In Table 5, the highest number of contribution in category of single authorship are contributed in the year 2008 which is 35 (16.2%) out of 216 single authored paper, and in

multi-authored papers the highest number of contributions are contributed in the year 2008 having also 17 (18.08%) contribution out of 94 contribution.

Collaboration is a major area of authorship study, which indicates how authors work together to bring out a publication. The earlier analysis shows that percentage of multi-authored papers is more than that of single authored papers. To determine the extent of collaborative in quantitative terms, Subramanyam (1983), proposed a mathematical formula for calculating author's degree of collaboration in a particular discipline. The degree of collaboration among authors is the ratio of the number of collaborative publication to the total number of publications published in a discipline during certain period of time. The value of degree of collaboration can be calculated both for publication and citations as well it is expressed mathematically as:

The formula is  $C = N_m / N_m + N_s$ , where C = Degree of collaboration,  $N_m$  = Number of multi authored contributions,  $N_s$ = Number of single authored contributions.

For examples, the value of "C" for 2003 is  $C = 5/5+21=5/26=0.19$

**TABLE 6: DISTRIBUTION OF DEGREE OF COLLABORATIVE PAPERS.**

Year	2003	2004	2005	2006	2007	2008	2009	2010
Degree of collaboration	0.19	0.18	0.34	0.40	0.31	0.32	0.29	0.27

From the collected data, the citations are Tabulated below:

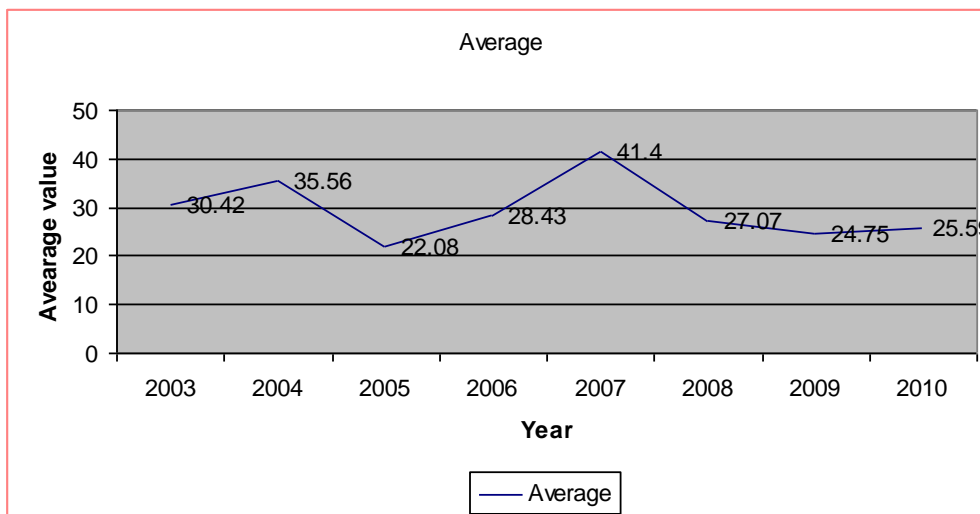
**TABLE 7: DISTRIBUTION OF CITATIONS (YEAR WISE).**

Year	2003	2004	2005	2006	2007	2008	2009	2010	Total
No of citations	791	960	1016	1052	1822	1408	1015	947	9011
Percentage	8.78	10.65	11.27	11.67	20.22	15.62	11.26	10.50	100

**TABLE 8: AVERAGE CITATION PER CONTRIBUTION IN EACH YEAR.**

Year	2003	2004	2005	2006	2007	2008	2009	2010	Total
No. of contributions	26	27	46	37	44	52	41	37	310
No of citations	791	960	1016	1052	1822	1408	1015	947	9011
Percentage	8.78	10.65	11.27	11.67	20.22	15.62	11.26	10.50	100

**FIGURE 3: GRAPH SHOWING AVERAGE CITATIONS.**



From the above Table 7 and 8, it is found that average citation is 29.06 (9011/310), which is good enough. The number of pages for each article and total pages of all articles are counted and tabulated below.

**TABLE 9: LENGTH- WISE DISTRIBUTION OF CONTRIBUTIONS.**

Year	No. of articles	Cumulative total of articles	No. of Pages	Cumulative total of pages	Average page per article
2003	26	26	304	304	11.69
2004	27	53	367	671	13.59
2005	46	99	410	1081	8.91
2006	37	136	250	1331	6.75
2007	44	180	365	1696	8.25
2008	52	232	438	2134	8.42
2009	41	273	339	2473	8.26
2010	37	310	296	2769	8.0

For 310 articles, total number of pages is 2769. It is found as an average per article the page runs to 8.93.

## CONCLUSION

The following findings and conclusion can be drawn from the present study:

- The study shows a trend of stable growth in contribution published in JIPR (2003-2010). However there was decrease a number of contributions in 2003, the average number of contribution per issue is 6.46.

- Most of the contributions are by single author, where as more than three authors contributions are very much less.
- The subject coverage of the articles is mostly in the subject field of Patent, Copyright, Trademarks, etc.
- It is found from the study that the numbers of citation are growing substantially. However, the maximum number of citations are in 2007 (1822) and minimum in 2010 (947).
- It is found that be the average length of article is 13.59 pages (Minimum) and maximum of 6.75 pages.

From the study, it has been found that this JIPR as a reputed journal in the field of Intellectual Property Rights. It is indexed in LISA, the most renewed abstracting services, add value to this journal. It is suggested that this journal must be made available in R&D organizations and industries and to be utilized by students, IPR and research professionals.

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