

IEEE TRANSACTION ON INDUSTRIAL ELECTRONICS: A SCIENTOMETRIC STUDY

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Abstract

The present study analysis the Journal of IEEE transactions on Industrial Electronics for the period from 1990 -1996. The study has observed with 453 articles 1128 authors with 3574 pages. The present study covers authorship patterns, author productivity, number of contributions, Length of articles and number of references cited was analyzed.

Keywords: aggregation, Journals, Periodicals, Electronics. patterns, tutorials

Introduction

Journals/Periodicals are the indicators of literature growth in any field. They are the main channel for transmitting knowledge. Bibliometrics are used to identify the literature growth of the particular field. Bibliometrics has emerged in the field of research and Development. The term bibliometrics was coined by Alan Pritchard in 1969. Bibliometrics is one the part of Ranganathan's librametric concept. Scientometrics is a branch of library and information science *Scientometrics* is the study of measuring and analyzing science research. Scientometric tools can be used to measure and compare the scientific activities at various levels of aggregation They can also be used to measure research collaborations, to map scientific networks and to monitor the evolution of scientific fields. Scientometrics is used for quantitative methods of Science. Bibliometrics study based upon quantitative measurements. The quantitative measurements are may be descriptive and evaluative bibliometrics. Descriptive bibliometrics are study of the productivity literature in the particular field. Evaluative bibliometrics are study of the literature used by researcher in the particular field. Journals/Periodicals are the indicators of literature growth in any field. They are the main channel for transmitting knowledge.

Source Journal: IEEE Transactions on Industrial Electronics

The IEEE, a non- profit organization, is the world's leading professional association for the advancement of technology. The full name of the IEEE is the Institute of Electrical and Electronic Engineers. The Foundation of IEEE brings the exhilaration of scientific discovery to students, fostering technological innovation, preserving history, and promoting public awareness of the long-reaching effects of engineering IEEE Transactions on Industrial Electronics is published twelve times a year by the IEEE Industrial Electronics Society. The journal publishes papers, letters, tutorials, surveys, and perspectives on the current trends in Industrial Electronics.

Review of Literature

1. **Thanuskodi (2010)** analysed the issues of Journal of social sciences and he identify the number of articles, authorship pattern, subject wise distribution of articles, average number of references per articles, forms of documents cited, year wise distribution of cited journals etc. He identified 273 articles are published and most of the journals are published from economics.

2. **Eswaran, Jeyachitra and N. Murugesapandian (2014)** analysed the issues of "IEEE transactions on Fuzzy Systems during the period of 2004-2008 with 451 articles. He identify most of the articles are published with more than one author.

3. **D Akhtar Hussain (2013)** analysed the journal of "Annals of Library and information Science" for the period of 2006-2010. It is found that the maximum numbers of articles are in the year 2010 contributing 43 articles and majority of the articles in the journal are two-authored and maximum number of the contributions is from New Delhi.

4. **S.Maheswari and N.Murugesapandian (2015)** analysed the journal "Webology". She studies the period from 2004 to 2013 and she conceals the maximum number of articles published in the year of 2008 and most of the authors were from India other than Foreign.

5. **Wolfgang GlaÈ nzel and Urs Schoep (1999)** analysed the journal of A bibliometric study of reference literature in the sciences and social sciences. He identified most of the journals are published from life sciences other that Science and Humanities.

6. **Madavamoorthy, Aditya Kumari and Hydarali (2012)** analysed the journal of Documentation from the period of 2006 -2012 and he identified most of the articles are published from universities with Foreign countries. Highest collaborative countries are UK and Iran.

Objectives of the Study

The present study has been undertaken with the objective of analysing the following aspects:

1. To study the analysis of articles published in IEEE Transactions on Industrial Electronics.
2. To identify the number of contributions published during the period of study
3. To study the authorship pattern.
4. To study the length of articles.
5. To find out the number of cited documents and the average number of References per article.

Methodology

Contribution of IEEE Transactions on Industrial Electronics were analysed for the period of 1990-1996. The data were downloaded and processed according to the objectives. Only full length of articles were considered and letter to the editor, announcements,

reports were not considered for this study. Totally 6 volumes, 36 issues and 453 contributions were analysed for this study.

Data Analysis

Table 1: Year wise Distribution of Contribution

Sl. No.	Year	Vol. No.	No. of Issues	No. of Articles						Total	%
				Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6		
1	1990	37	6	15	11	11	9	13	20	79	17.43
2	1991	38	6	16	10	10	10	13	14	73	16.11
3	1992	39	6	10	11	12	10	12	12	67	14.79
4	1993	40	6	17	14	11	8	8	6	64	14.12
5	1994	41	6	18	15	15	13	11	11	83	18.32
6	1995	42	6	16	14	14	13	19	11	87	19.2
				92	75	73	63	76	74	453	

Table 1 Shows that total no. of 453 articles were published from 1990 to 1995. The Highest numbers of articles published in 1995 i.e 87 articles were published. The second position occupied by the year 1994.

Table 2: Year wise Distribution of Total Number of Pages

Sl. No.	Year	Vol. No.	No. of Issues	Total No. of Pages	%
1	1990	37	6	586	16.39
2	1991	38	6	504	14.1
3	1992	39	6	576	16.11
4	1993	40	6	579	16.2
5	1994	41	6	667	18.66
6	1995	42	6	662	18.52
				3574	

Table 2 shows that distribution of maximum number of pages was published in the year 1994. The second position occupied by 1995 with 662 articles.

Table 3: Total No. of Contribution and Total Number of Pages

Sl. No.	Year	Quantum of contributions	Quantum of pages	Average Number of Pages
1	1990	79	586	13.48
2	1991	73	504	14.48
3	1992	67	576	11.63
4	1993	64	579	11.05
5	1994	83	667	18.32
6	1995	87	662	13.14
		453	3574	

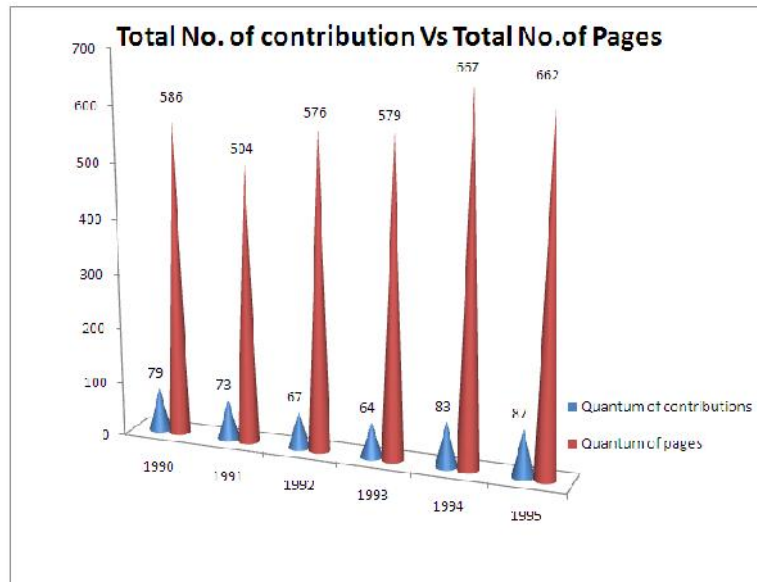


Table 3 shows that during the study period, quantum of pages published in the year 1994 and quantum of contributions in the year 1995.

Table 4: Length of Articles

Sl. No.	Year	One	Two	Three	Four	Five	Six	Seven	eight	Nine	Ten	Ten	Total
1	1990	0	2	7	5	5	17	13	8	11	5	6	79
2	1991	0	4	3	2	9	15	19	11	5	4	1	73
3	1992	0	1	1	1	5	6	13	14	9	7	10	67
4	1993	0	2	1	1	0	3	9	12	17	3	16	64
5	1994	0	0	4	3	5	8	16	15	13	12	7	83
6	1995	0	1	5	3	8	11	19	19	10	5	6	87
	Total	0	10	21	15	32	60	89	79	65	36	46	453
	%		2.2	4.6	3.3	7.06	13.24	19.64	17.43	14.34	7.9	10.15	

Table 4 Shows that during the study period articles with 7 pages are occupied first place and articles with 8 pages are occupied second place. Out of 453 articles 10 articles are published 2 pages.

Table 5: Distribution of Articles Vs Total no. of Authors

Year	Total No. of articles	No. of Authors	Average no. of authors per contribution
1990	79	188	42.02
1991	73	184	39.67
1992	67	178	37.64
1993	64	165	38.78
1994	83	207	40.09
1995	87	206	42.23
	453	1128	

Table 5 Shows that maximum number of articles that is, 87 published during the year 1995. Maximum number of authors that is, 207 authors published their articles during the year 1994.

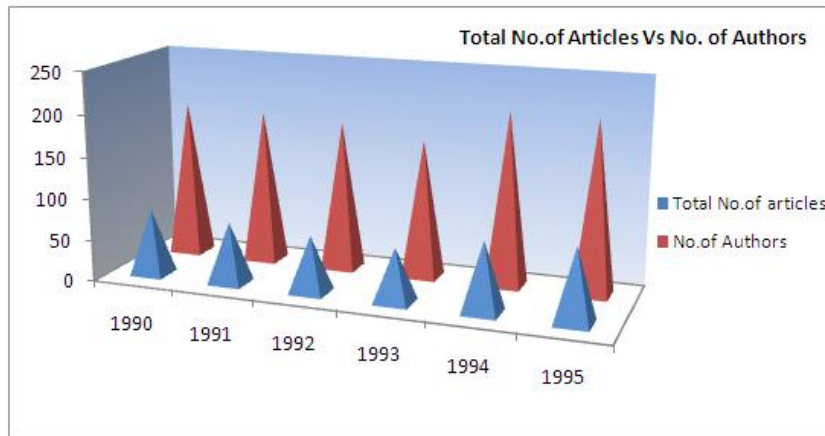


Table 6: Authorship Pattern of Contributions

Sl. No.	Year	Single	Double	Three	Four	Five	Five & above	Total
1	1990	13	34	24	5	3	0	79
2	1991	13	26	23	6	4	1	73
3	1992	7	27	22	8	2	1	67
4	1993	7	22	27	8	0	0	64
5	1994	15	36	14	14	2	2	83
6	1995	19	35	24	9	0	0	87
	Total	74	180	134	50	11	4	453
	%	16.33	39.73	29.58	11.03	2.42	0.88	

Table 6 shows that Authorship pattern of contributions. Maximum of contributions (180) are contributed by double authors (39.73%). Minimum of contributions (4) are contributed by five and above authors. 74 contributions are contributed by single authors.

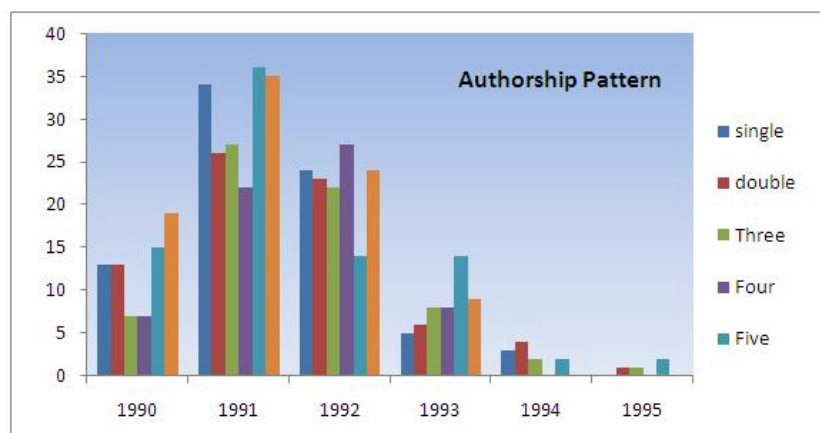


Table 7: Single Author vs. Multiple Authors

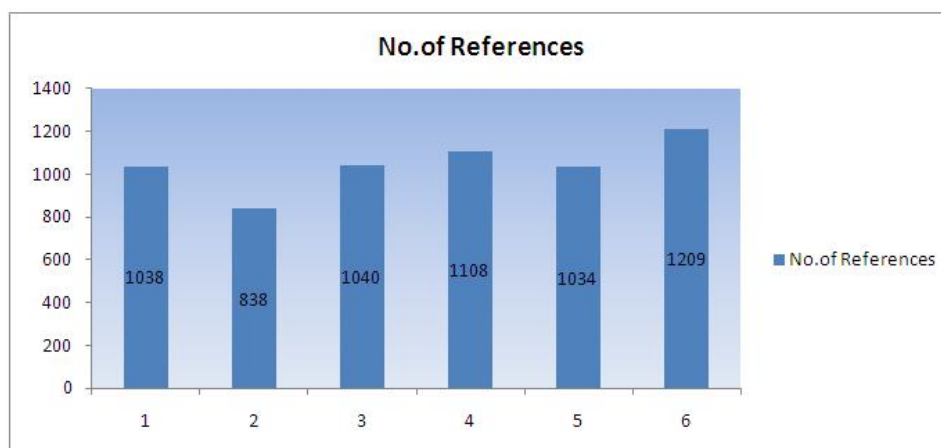
Sl. No	Year	Total Articles	Single Author		Multi Authors	
			No. of Contribution	Percentage	No. of Contribution	Percentage
1	1990	79	13	17.56	66	17.41
2	1991	73	13	17.56	60	15.83
3	1992	67	7	9.4	60	15.83
4	1993	64	7	9.4	57	15.03
5	1994	83	15	20.27	68	17.94
6	1995	87	19	25.67	68	17.94
Total		453	74		379	

Table 7 shows that maximum of contributions are contributed by multi Authors. Out of 453 contributions 379 contributions are contributed by multi authors.

Table 8: Total References cited in IEEE Transactions in Industrial Electronics

Year	Total No. of articles	No. of References	%
1990	79	1038	16.56
1991	73	838	13.37
1992	67	1040	16.59
1993	64	1108	17.67
1994	83	1034	16.49
1995	87	1209	19.29
	453	6267	

Table 8 shows that number of references cited by authors for their contributions in IEEE transactions on Industrial Electronics. During the period of study 453 contributions are contributed with 6267 references.



Conclusion

The journal published 453 contributions published during the period of 1990-1995. Maximum number of articles published in the 1995. This study reveals that maximum

number of contributions have the length of 7 pages. Maximum number of research articles contributions was contributed by joint authors. Highest percentage of reference cited in the year of 1993-64 contribution was contributed with 1108 references.

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