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Introduction

Periodicals are the primary source of information and an important media for communication. They play a major role for communicating the latest research findings and publishing the articles containing the current development in any field of knowledge. Information is one of the most important resources for a nation and forms the integral base for the economic. Information has been growing out in an exponential rate which is often referred to as information explosion. Similarly the periodical publication has also been increasing day by day since the first scientific journal started publication in 1665. The periodicals are the indicators of literature growth in any field of knowledge. They emerge as the main channel for transmitting knowledge. Due to the escalating cost of the periodicals and lack of adequate library budgets the selection of any particular journal for a library should be done more carefully. Therefore, the library authorities are forced to reduce the number of journal subscriptions. Bibliometric analysis has many applications in the Library and Information Science filed in identifying the research trends in the subject, core journals, etc. and thereby framing new subscription policy for tomorrow. These studies will be helpful for librarians to plan a better collection development.

Bibliometrics

There are many definitions of the term 'bibliometrics' in the literature; only a few will be mentioned. Other definitions not discussed are provided by Fairthorne (1969), Hawkins (1977), Khawaja (1987), Burton (1988), Egghe (1988), Khurshid & Sahai (1991a,b) and Tague-Sutcliffe (1992a). An early definition is provided by Pritchard (1969b, pp. 348-349): "to shed light on the processes of written communication and of the nature and course of development of a discipline (in so far as this is displayed through written communication), by means of counting and analysing the various facets of written communication … the application of mathematics and statistical methods to books and other media of communication ...". Broadus (1987b, p. 376) reviews various other definitions, and then provides the following: "... the quantitative study of physical published units, or of bibliographic units, or of surrogates of either ...". In contrast to the other two terms (scientometrics and informetrics), Brookes (1990, p. 42) says: "I have no doubt that bibliometrics must now be conceded to library studies only. Its work is not yet ended as libraries continue to adapt to the changing world around them. And

bibliometrics itself needs the continued interest of outside experts, statisticians and others, in developing and refining its techniques." White & McCain (1989, p. 119) have the following definition and explanation: "Bibliometrics is the quantitative study of literatures as they are reflected in bibliographies. Its task, immodestly enough, is to provide evolutionary models of science, technology, and scholarship."

Indian Journal of Chemistry

Indian Journal of Chemistry (Section B) is a leading monthly journal in Organic and Medicinal Chemistry started publishing from 1976. It publishes papers on organic reaction mechanism, theoretical organic chemistry, structure-activity relationships, medicinal chemistry, synthesis of chiral compounds, bio-organic chemistry, enzymes in organic synthesis, reagents in organic synthesis, heterocyclic compounds, phytochemistry (natural products), amino acids, peptides and proteins, spectroscopy in characterization of organic compounds, chemoenzymatic and enantioselective synthesis of organic compounds, synthesis of fullerenes, metal-catalyzed asymmetric reactions, bioactive plant products and combinatorial chemistry. Apart from full length papers, notes and communications, the journal publishes short reviews on frontline areas under the column " advances in Contemporary Research". Moreover it is the one and only authoritative journal in chemistry, published in India.

Objectives of the Study

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

- To make an analysis of articles published in Indian Journal of Chemistry
- To identify the number of contributions published during the period of study
- To study the authorship pattern
- To identify geographical distribution of articles
- To study the length of articles
- To find out the number of cited documents and the average number of references per article.

Methodology

Methodology applied in the present study is bibliometric analysis which is used to study in detail the bibliographic features of the articles and citation analysis of reference appended at the end of each article, published in journal of chemistry from 2005-2009. The data pertaining to Indian Journal of chemistry regarding 974 articles made from volume 44 in 2005 to volume 48 in 2009. Then they are tabulated and analysed for making observations.

Data Analysis

Table-1 Year wise Distribution of Articles

Year	Vol. No.	No. of issues	No. of contribution	Percentage
2005	44B	12	261	26.80
2006	45B	12	218	22.39
2007	46B	12	183	18.79

2008	47B	12	156	16.01
2009	48B	12	156	16.01
Total		60	974	100

The above table showed that the maximum number of articles were published in the year 2005 (261) and minimum in the year 2008 & 2009 (156) articles. The journal publishes on an average of 195 articles per year.

Table-2 Distribution of Articles (Issue-wise)

Month	Volume Number					Total
	44B	45B	46B	47B	48B	
January	23	20	20	14	13	90
February	22	27	16	12	12	89
March	24	29	15	12	13	93
April	20	0	15	13	13	61
May	20	20	15	13	13	81
June	24	17	15	14	13	83
July	25	18	16	15	13	87
August	20	20	15	12	13	80
September	25	20	15	12	13	85
October	22	12	15	13	13	75
November	24	18	13	13	12	80
December	12	17	13	13	15	70
Total	261	218	183	156	156	974

The table 2 reveals distribution of articles (Issue-wise). Volume No. 44 shows the highest number of total articles. The second highest position is occupied by Volume No. 45. It is followed by volume 46. The lowest number of total articles in volume 47 and 48. The contribution of articles in volume 45 were more in March. The month January shows more issues in volume 46. In volume 47 and 48 the issues were more in July and December respectively.

Table-3 Authorship Pattern

Year	Number of Authors					Total
	1	2	3	4	5 & more	
2005	27	73	58	49	54	261
2006	21	67	56	33	41	218
2007	16	41	73	20	33	183
2008	18	37	28	43	30	156
2009	13	47	38	32	26	156
Total	95	265	253	177	184	974
Percentage	9.75	27.20	25.98	18.18	18.89	100

Table 3 reveals the authorship pattern of the articles published during the period of study. Maximum number of articles were contributed by two authors 265 (27.20%). This is followed by three authors with 253 (25.98%) articles, five and more authors were contributed 184 (18.89 %) articles, four authors with 177 (18.18%) and single author with 9.75% of the total articles.

Table-4 Year-wise Authorship pattern

Authorship	Year					Total	Percentage
	2005	2006	2007	2008	2009		
Single	27	21	16	18	13	95	9.75
Joint	234	197	167	138	143	879	90.25
Total	261	218	183	156	156	974	100

The above table-4 showed that out of 974 articles joint authors contributed 879 (90.25%) articles while the rest 95 (9.75%) articles were contributed by single author.

Table-5 Institution-wise contribution of articles

Name of the Institution	No. of Articles	Percentage
Universities	263	27.00
Colleges	169	17.35
Research Institutions	258	26.49

Chemical industries	284	29.16
Total	974	100

The table 5 above showed that majority of the articles 284 (29.16%) were contributed by chemical industries. This is followed by universities with 263 (27 %) and research institutions with 258 (26.49%) articles. The remaining 169 articles (17.35%) were contributed by colleges.

Table-6 Geographical Distribution of Articles

Name of the Institution	No. of Articles	Percentage
India	886	90.96
Foreign	088	9.04
Total	974	100

The table 6 showed that most of the contributions are from India with 90.96 % and the rest 9.04% only from foreign sources.

Table-7 Length of Articles

Pages	Year					Total	Percentage
	2005	2006	2007	2008	2009		
1-4	76	66	62	43	38	285	29.26
5-8	82	91	77	58	64	372	38.20
9-12	80	44	26	46	43	239	24.54
13 & more	23	17	18	9	11	78	8.00
Total	261	218	183	156	156	974	100

Table 7 reveals that the majority of articles 372 (38.20%) have the length of 5-8 pages followed by 285 (29.26%) articles with 1-4 pages, 239 (24.54%) articles with 9-12 pages and the remaining 78 (8 %) articles have the length of 13 and more pages.

Table-8 Forms of Document cited

Forms of Document	Total No. of Citation	Percentage
Journals	3418	45.23
Books	1726	22.84

Reference Books	308	4.07
Seminar/Conference Proceedings	1832	24.24
Dissertations	274	3.62
Total	7558	100

The table 8 above showed that majority of the contributors preferred journals as the source of information which occupied the top position with the highest number of citations 3418 (45.23%) of the total 7558 citations. The second highest position is occupied by Seminar / Conference proceedings with 1832 (24.24%) citations. It is followed by books with 1726 (22.84%) and dissertations with 274 (3.62%) citations.

Conclusion

The journal has published 974 articles during the period of study. The maximum number of articles (26.80%) were published in the year 2005. The present study reveals that the maximum number of contributors are joint authors with 90.25 %. Similarly most of the contributions are from India with 90.96, while foreign contributions is very less. The study revealed that majority of the authors preferred journals as the source of information providing the highest number of citations (45.23%). The maximum number of contributions have the length of 5-8 pages with 38.20%.

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