

CITATION ANALYSIS OF INDIAN JOURNAL OF CHEMISTRY SECTION: A AND SECTION: B: A COMPARATIVE STUDY

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Abstract: - *The present paper focuses 50283 citations of Indian Journal of Chemistry (Volume-A and B). It discusses on form-wise distribution of citations, distribution of e-citations and p-citation, chronological distribution of citations, authorship pattern of citations, ranking of authors, ranking of publishers, geographical distribution of citations, Indian and foreign distribution of citations, language-wise distribution of citations, ranking of journals and ranking of books.*

Keywords : *Citation, Citation analysis, Indian Journal of Chemistry.*

INTRODUCTION

The present paper deals with the comparative study of citation analysis of Indian Journal of Chemistry volume: A and B Literature. The present study comprises with 10 volumes of A and B. volume -A with 32218 citations and volume-B with 18065 citations.

SURVEY OF LITERATURE

The review of literature shows the usefulness of citation analysis study to the librarians and researchers in the various disciplines. Citations analysis and citation impact analysis to satisfy 'useful purposes' in supporting the interests of the research environment (Wormell, 1998), Citation analysis is an effective but somewhat neglected technique of collection development and Evaluation. The method of

Citation analysis consists of counting and ranking the number of times documents are cited in bibliographies footnotes, and/or indexing tool (Baker and Lancaster, 1991). Citation analysis has many critics, and some have focused their criticism on the idea that citation analysis could be used as an input into the RAE -Research Assessment Exercise process (Norris and Oppenheim, 2003), citation analysis can be used to study the nature and characteristics of literature cited in the different discipline (Balasubramanian and Bhaskar, 1984).

(Jadhav and etal.2011) studied citation analysis of all the journal articles published in the journal 'University News' from January 2004 to December 2008 is carried out in 5 volume and 261 issues in its 1949. The citations taken for the study are 5968. The maximum number of citations were referred in 2007 to 2008 that is 2950 (50.6%), the most cited type of document is book 1549 (26.39%), the maximum number of citations were from India that is 3675 (62.61%), in authorship pattern single author citations are dominant that others that is 3011 (51.30%). (Ranveer & Khaparde 2016) studied their paper focuses on bibliographical entries listed at the end of the 76 Ph.D. theses 6410 citations on Mathematics submitted to Dr. Babasaheb Ambedkar Marathwada University Aurangabad. It discusses on form-wise distribution of citations, chronological distribution of citations, authorship pattern of citations, ranking of authors, ranking of publishers, geographical distribution of citations, Indian and foreign distribution of citations,

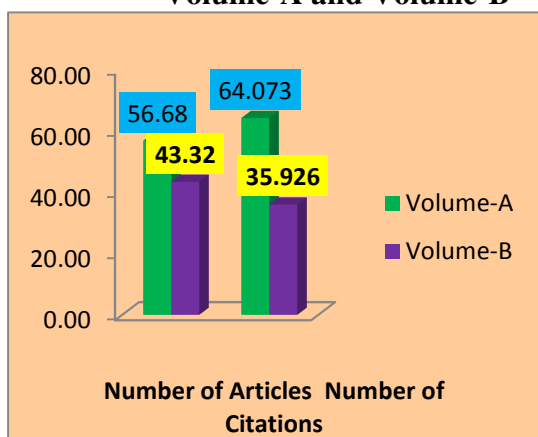
language wise distribution of citations, ranking of journals and ranking of books.(Magre U.Y & Sathe V.S) studied in their paper focuses 32218 citations of Indian Journal of Chemistry (Volume-A). It discusses on form-wise distribution of citations, distribution of e-citations and p-citation, chronological distribution of citations, authorship pattern of citations, ranking of authors, ranking of publishers, geographical distribution of citations, Indian and foreign distribution of citations, language-wise distribution of citations, ranking of journals and ranking of books.(Ranveer & Khaparde 2016) paper focuses on bibliographical entries listed at the end of the 75 Ph.D. theses 5784 citations on Statistics submitted to Dr. Babasaheb Ambedkar Marathwada University Aurangabad. It discusses on form-wise distribution of citations, chronological distribution of citations, authorship pattern of citations, ranking of authors, ranking of publishers, geographical distribution of citations, Indian and foreign distribution of citations, language-wise distribution of citations, ranking of journals and ranking of books.

1. VOLUME-WISE DISTRIBUTION OF CITATIONS IN INDIAN JOURNAL OF CHEMISTRY VOLUME-A AND VOLUME-B

Table No. 1 Volume-Wise Distribution of Citations in Indian Journal of Chemistry Volume-A and Volume-B

| Sr. No. | Name of Volume | Number of Articles | % | Number of Citations | % |
|---------|----------------|--------------------|---------------|---------------------|------------|
| 1 | Volume-A | 1146 | 56.68 | 32218 | 64.073 |
| 2 | Volume-B | 876 | 43.32 | 18065 | 35.927 |
| | Total | 2022 | 100.00 | 50283 | 100 |

Figure No.1 Volume-Wise Distribution of Citations in Indian Journal of Chemistry Volume-A and Volume-B



It was seen from table and figure No.1 that there were total 1146 articles in volume-A and 32218 (64.073) citations were available and in volume-B there were total 876 articles and 18065 (35.927%) citations were available.

2 FORM WISE DISTRIBUTIONS OF CITATIONS IN INDIAN JOURNAL OF CHEMISTRY VOLUME-A AND VOLUME-B

The form wise distribution of citations of Indian Journal of Chemistry Volume-A and Volume-B is shown in table No. 2 and figure No.2

Table No. 2 Form Wise Distribution of Citations in Indian Journal of Chemistry Volume-A and Volume-B

| Sr. No. | Name of volume | No. of Forms of Documents | Predominant Document Types | | | |
|---------|----------------|---------------------------|----------------------------|-------|-------|------|
| | | | Journals | % | Books | % |
| 1 | Volume-A | 35 | 28494 | 88.44 | 2503 | 7.77 |
| 2 | Volume-B | 41 | 15794 | 87.43 | 1165 | 6.45 |

Figure No. 2 Form Wise Distribution of Citations in Indian Journal of Chemistry Volume-A and Volume-B

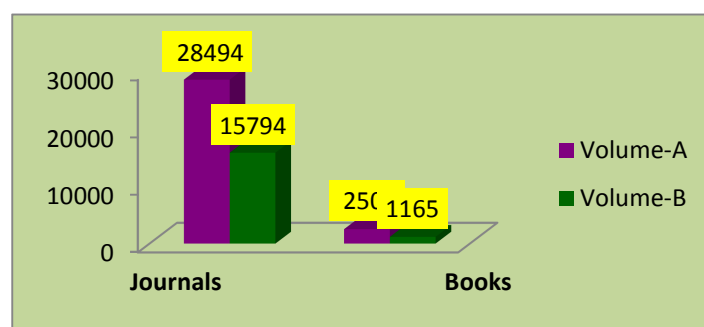


Table No.2 and figure No.2 shows distributions of different forms of cited literature used by the Indian Journal of Chemistry. Analysis of data indicates that the journals contributed to the highest with 28494 (88.44%) citations than the book citations with 2503 (7.77%) in volume- A whereas in Volume-B journals contributed to the highest with 15794 (87.43%) citations than the

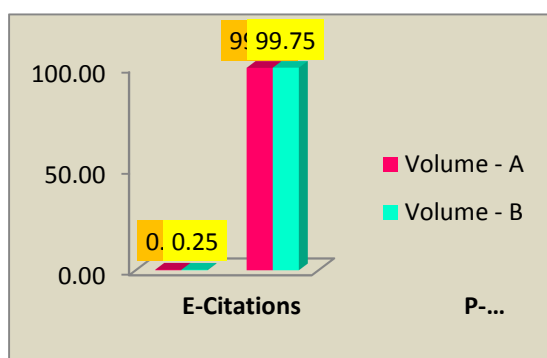
book citations with 1165 (6.45%) citations respectively.

3 DISTRIBUTIONS OF E-CITATIONS AND P-CITATIONS

Table No. 3 Distribution of E-Citations and P-Citations

| Sr. No | Name of Volume | E-Citations | % | P-citations | % |
|--------|----------------|-------------|------|-------------|-------|
| 1 | Volume - A | 96 | 0.30 | 32122 | 99.70 |
| 2 | Volume - B | 45 | 0.25 | 18020 | 99.75 |

Figure No.3 Distribution of E-Citations and P-Citations



The table No.3 and figure No.3 shows volume -A total number of 32218 citations, 32122 (99.70%) are printed citations whereas 96 (0.30%) are electronic citations and in B- volume the total number of 18065 citations, 18020 (99.75%) are printed citations whereas 45 (0.25%) are electronic citations, which indicates that the researchers depend mostly on printed literature than the electronic form of literature.

4. CHRONOLOGICAL DISTRIBUTION OF CITATIONS

The period wise distribution of citations was measured by the number of year which elapsed between the publications of a cited

document. The whole time span of the documents used was divided into period groups, each of 10 years duration.

Table No.4 Chronological Distribution of Citations

| Sr. No. | Name of Volume | Starting of Year of Citations |
|---------|----------------|-------------------------------|
| 1 | Volume - A | 1870-1879 |
| 2 | Volume -B | 1850 - 1859 |

It was seen from Table No.4 that the researcher in the Indian Journal of Chemistry A-volume cited the literature from the year 1870 whereas the volume-B literature was cited from the year 1850 which shows that the volume-B literature was older than the volume-A literature.

5. OBSOLESCENCE OF INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B LITERATURE

An obsolescence and age study of literature is quite common in citation analysis it involves decline in the use of documents or citations received by the documents over a period of time. Table No.5 represents obsolescence of Indian Journal of Chemistry Volume- A and -B literature.

Table No.5 Obsolescence of Indian Journal of Chemistry Volume- A and -B Literature

| Sr. No. | Name of Volume | Obsolescence Period | Group of Years | Citations | % |
|---------|----------------|---------------------|----------------|-----------|-------|
| 1 | Volume - A | 60 | 1870-1929 | 127 | 0.39% |
| 2 | Volume -B | 75 | 1850 - 1924 | 112 | 0.61% |

The Table No.5 indicates that the half life period of Indian Journal of the Chemistry Volume- A literature cited by the researchers was

calculated as 60 years from 8070 -1929 with 127 (0.39%) citations. And the half life period of Indian Journal of Chemistry Volume- B literature cited by the researchers was calculated as 75 years from 1850 - 1924 with 112 (0.61%) citations.

6. AUTHORSHIP PATTERN OF INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B

The characteristics of any subject literature include not only the basic publishing pattern but that of authors themselves so the authors were analyzed to determine the percentage of four, five, six and more than fifteen authors. In order to have a clear picture the result of analysis of authors are presented.

Table No. 6 Authorship Pattern of Indian Journal of Chemistry Volume- A & B

| Sr.No | Name of Volume | Authorship Pattern | No. of Citations | % |
|-------|----------------|--------------------|------------------|-------|
| 1 | Volume - A | Four Authors | 7711 | 23.93 |
| 2 | Volume - B | Five Authors | 4294 | 23.77 |

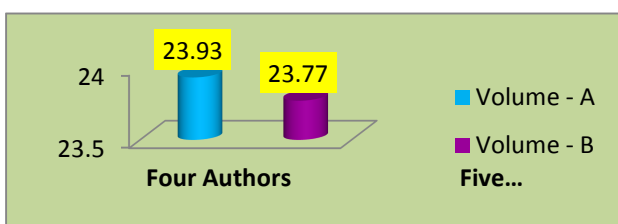


Figure No. 4 Authorship Pattern of Indian Journal of Chemistry Volume- A & -B

Table No.6 and figure No.4 reveals that four author publication was more in number in Indian Journal of chemistry volume-A with 7711 (23.93%) citations whereas in Indian Journal of

chemistry volume-B five authors publication was 4294 (23.77%).

7. PREDOMINANT AUTHOR IN INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B

Predominant authors in Indian Journal of Chemistry Volume- A and B is shown in table No.7. The author who is most preferred by researchers, that document is most important to keep in the library for that purpose author ranking is essential to librarians as well as researchers.

Table No. 7 Predominant Authors in Indian Journal of Chemistry Volume- A & B

| Sr.No | The Indian Journal of Chemistry Volume-A | | | The Indian Journal of Chemistry Volume-B | | |
|-------|--|-----------|------|--|-----------|------|
| | Name of Author | Citations | % | Name of Author | Citations | % |
| 1 | Sheldrick G M | 658 | 0.43 | Varma R S | 244 | 0.36 |
| 2 | Vogel A I | 638 | 0.41 | Kidwai M | 218 | 0.32 |
| 3 | Parr R G | 598 | 0.39 | Yadav J S | 206 | 0.30 |
| 4 | Gutman I | 522 | 0.34 | Sureshbabu V V | 199 | 0.29 |
| 5 | Srinivasan B R | 484 | 0.31 | Kumar A | 197 | 0.29 |

The table No.7 depicts that “Sheldrick G M” scores the top position with 658 (0.43 %) citations; second rank goes to “Vogel A I” with 638 (0.41 %) citations, followed by “Parr R G” with 598 (0.39 %) citations respectively in A volume. And in volume –B “Varma R S” scores the top position with 244 (0.36 %) citations;

second rank goes to “Kidwai M” with 218 (0.32 %) citations, followed by “Yadav J S” with 206 (0.30 %) citations respectively in B volume.

8. PREDOMINANT PUBLISHERS IN INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B

Predominant publishers in Indian Journal of Chemistry Volume- A and B are shown in table No.8. The publishers are the most important in finding the information source where it is surely available.

Table No.8 Predominant Publishers in Indian Journal of Chemistry Volume A & B

| Sr.No | The Indian Journal of Chemistry Volume-A | | | The Indian Journal of Chemistry Volume-B | | |
|-------|--|-----------|------|--|-----------|------|
| | Name of Publishers | Citations | % | Name of Publishers | Citations | % |
| 1 | Academic Press | 185 | 0.57 | Academic Press | 123 | 0.68 |
| 2 | Wiley | 163 | 0.51 | John Wiley and Sons | 93 | 0.51 |
| 3 | John Wiley & Sons | 128 | 0.4 | Wiley | 75 | 0.42 |
| 4 | Elsevier | 113 | 0.35 | Pergamon Press | 66 | 0.37 |
| 5 | University of Gottingen | 99 | 0.31 | VCH Publishers | 39 | 0.22 |

Table No.8 shows the ranking of publishers. The publisher “Academic Press.” scores the top position with 185 (0.57%) citations, second rank goes to “Wiley” With 163 (0.51%) citations, followed by “John Wiley & Sons” with 128(0.40%) citations respectively in the Indian

journal of Chemistry volume-A, and the Indian journal of Chemistry volume-B “Academic Press.” scores the top position with 123 (0.68%) citations, second rank goes to “John Wiley and Sons” With 93 (0.51%) citations, followed by “Wiley” with 75 (0.42%) citations respectively.

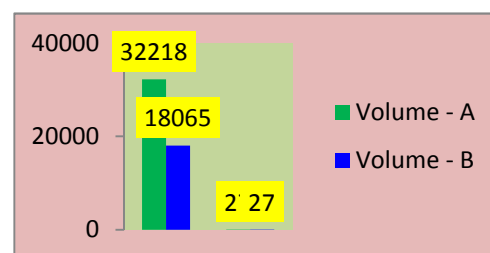
9. GEOGRAPHICAL DISTRIBUTIONS OF CITATIONS IN INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B

Geographical distribution of citations in Indian Journal of Chemistry Volume- A and –B is shown in Table No.9 and Figure No.5.

Table No. 9 Geographical Distributions of Citations in Indian Journal of Chemistry Volume- A and -B

| Sr. No. | Name of Volume | No. of Citations | No. of Countries |
|---------|----------------|------------------|------------------|
| 1 | Volume - A | 32218 | 27 |
| 2 | Volume - B | 18065 | 27 |

Figure No. 5 Geographical Distributions of Citations in Indian Journal of Chemistry Volume- A and -B



From the above table No.9 and figure No.5 it reveals that 27 countries were scattered in 32218 citations in the Indian Journal of Chemistry Volume- A and 27 countries were scattered in 18065 citations in the Indian Journal of Chemistry Volume- B.

10. INDIAN AND FOREIGN DISTRIBUTION OF CITATIONS OF THE INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND -B LITERATURE

Indian and Foreign distribution of citations of The Indian Journal of Chemistry volume- A and -B Literature is shown in table No.10 and figure No.6.

Table No.10 Indian and Foreign Distribution of Citations of the Indian Journal of Chemistry Volume- A and –B Literature

| Sr. No. | Name of Volume | Geographical Area | |
|---------|----------------|-------------------|---------|
| | | Indian | Foreign |
| 1 | Volume - A | 241 | 2587 |
| 2 | Volume - B | 206 | 1143 |

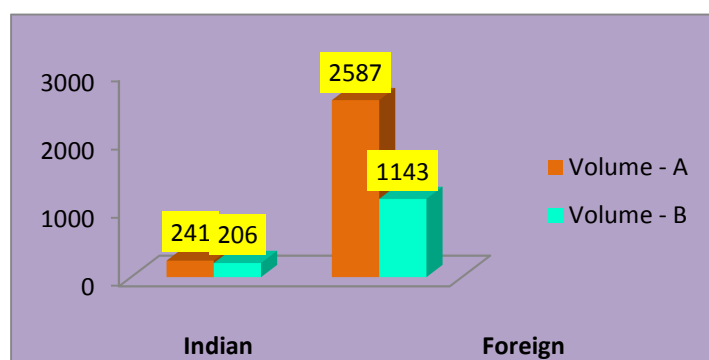


Figure No. 6 Indian and Foreign Distribution of Citations of Indian Journal of Chemistry Volume- A and –B Literature

Table No.10 and figure No.6 is reveals that the researchers in the Indian Journal of Chemistry mostly depend on foreign literature than Indian literature.

11. LANGUAGE WISE DISTRIBUTIONS OF CITATIONS IN INDIAN JOURNAL OF CHEMISTRY VOLUME- A AND –B

Language wise distributions of citations in the Indian Journal of Chemistry Volume- A and - B are shown in the table no.11.

Table No.11 Language Wise Distribution of Citations in Indian Journal of Chemistry Volume- A and –B

| Sr. No. | Name of Volume | No. of Languages | Predominant Language | No. Citations of Predominant | % |
|---------|----------------|------------------|----------------------|------------------------------|-------|
| 1 | Volume - A | 3 | English | 32200 | 99.94 |
| 2 | Volume - B | 4 | English | 18038 | 99.85 |

The researchers used Multilanguage literature in Indian Journal of Chemistry volume- A and –B were as English language was a predominant language used by both the researchers with 32200 (99.94%) citations in the Indian journal of Chemistry volume-A and 18038 (99.85%) citations of English language in the Indian journal of Chemistry volume-B.

CONCLUSIONS

The present study is based on 50283 citations appended to 20 volumes of the Indian journal of chemistry volume-A and volume-B, that there were total 1146 articles in volume-A and 32218 (64.073) citations were available and in volume-B there were total 876 articles and 18065 (35.927%) citations were available. In form wise distribution of citations the journal are mostly cited by the researcher of the Indian journal of chemistry volume-A with 28494 (88.44%) journal citations and Indian journal of

chemistry volume-B with 15794 (87.43%) journal citations, in distribution of e-citations and p-citations shows volume -A total number of 32218 citations, 32122 (99.70%) are printed citations whereas 96 (0.30%) are electronic citations and in B- volume the total number of 18065 citations, 18020 (99.75%) are printed citations whereas 45 (0.25%) are electronic citations, which indicates that the researchers depend mostly on printed literature than the electronic form of literature, In period wise distribution of citations that the researcher in the Indian journal of chemistry volume-A cited the literature from 1870 whereas the Indian journal of chemistry volume-B literature was cited from 1850 which shows that the Indian journal of chemistry volume-B literature was older than the Indian journal of chemistry volume-A literature. The half life period of the Indian journal of chemistry volume-A literature was 60 years whereas the half life period of the Indian journal of chemistry volume-B of 75 years. Four author publication was predominant than single author with 7711 (23.93%) citations in Indian journal of chemistry volume-A, and in the Indian journal of chemistry volume-B Five author publication was predominant with 4294 (23.77%) citations. The predominant author in the Indian journal of chemistry volume-A literature was Sheldrick G M scores the top position with 658 (0.43%) citations and in Indian journal of chemistry volume-B Varma R S. scores the top positions with 244 (0.36%) citations. Predominant publishers in the Indian journal of chemistry volume-A literature

were Academic Press scores the top positions with 185 (0.57%) citations and in the Indian journal of chemistry volume-B literature was Academic Press scores the top positions with 123 (0.68%) citations. The geographical distribution of citations in the Indian journal of chemistry volume-A shows the citations were scattered in 27 countries and the citations in the Indian journal of chemistry volume-B were scattered in 27 countries. Majority of citations were foreign citations that are 2587 in the Indian journal of chemistry volume-A and 1143 citations in the Indian journal of chemistry volume-B. English was a predominant language in the Indian journal of chemistry volume-A, and the Indian journal of chemistry volume-B literature i.e. in volume-A 32200 (99.94%) and in volume-B 18038 (99.85%).

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