

Challenges and Issues in Improve the Visibility and Impact of Indian Science, Technology and Medicine Journals

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Abstract

In India, many journals are being published pertaining to science, technology and medicine (STM). The impact of Indian scholarly communications depends on coverage of these journals in global bibliographic databases. Many reports say that the visibility and impact of Indian STM journals is not up to the mark. In this context, the author tries to analyze how the Indian STM journals can reach more users and can get good impact in the scholarly scientific communication.

Keywords: Indian STM Journals; Impact factors; Visibility – journals

Introduction

India is a developing country, and it is growing very fast in all the fields such as agriculture, education, economy, medical and science & technology. Nearly 10% of all its expenditure is on research and development. At present, in India, there are more than 687 universities including Central, Deemed, State and private [1] and nearly 89 CSIR Laboratory Centers [2] which are engaging in imparting higher education, involved in R&D activities respectively. The Indian Universities and R& D Institutions are producing and publishing enormous scholarly articles in journals. There were 6680 scientific publications till 1973, and there was 45% rise in the scientific publications in 1981-85. In India, lack of access to international journals and low visibility of the papers are the major problems faced by Indian researchers [3]. Articles published in peer reviewed journals are also primary means of measuring research output of an individual scientist or an institution or a country [4]. It is necessary to bring local published journals with international journals on the same platform which results in avoiding duplication research work. Researchers will get the global picture of the developmental phenomena of their study [5]. Authors of an article have different options while publishing an article. Authors of an article have different options while publishing in a journal. A study conducted by Neely in 1999 states that criteria considered by an author in selection of journals for publishing articles are- a) journal reputation b) impact factor, c). international spread/coverage and d) journal coverage indexed in

databases. They can select national or international journals for publication for their research output. Ulrich International periodical directory provides information about more than 3, 00,000 periodicals publishing from all parts of the world [6]. In India, there are more than 2000 STM journals available for publication of research articles. Indian Science Library [7] has published Directory of Indian ST journals. It contains details such as ISSN, Place and Address of Publication of Indian journals related to Science, Technology and Medicine. Researchers usually prefer to publish an article in peer-reviewed journals indexed in global reputed abstracting and indexing databases. And also they would like to search the scientific literature in such databases. A study conducted by R.Giri, P.Chand & B.K.Sen[8] on Indian Scientific and Technical journals in international and indexing and abstracting databases reveal that Chemical Abstracts Services (CAS) covers more number of journals (652) followed by CAB which abstracts 349 journals. DOAJ covers 287 journals and Scopus indexes 247 journals. Zentralblatt (162 journals), Index Copernicus (129 journals), Embase (123 journals), Mathematical Reviews (122 journals), and SCIE-E (102 journals) cover more than 100 number of journals. And 84 journals' impact factor related to Indian Science and Technology has been listed in Journal Citation Reports (JCR) reports from 1997 to 2009. However, this study does not check the Agricola database maintained by US Agriculture Department's National Agriculture Library. Agricola is also one of the main tools to search the journals related to agriculture and its related disciplines. In the present study we have identified 468 STM Indian journals listed in SCImago Journal Rank (SJR) list of 2013[9]. The table 1 shows the top 20 Indian STM journals listed in SJR ranking list of 2013.

Challenges and Issues

There is a strong relationship between database coverage and impact factor of journals. If a journal has to have a good impact factor, it should be indexed in reputed databases. Many reports say that Indian journals do not have good impact factors [10][11][12]. The following problems will be created if a journal is not indexed by reputed databases;

- Duplication of research might happen
- Chances that good research output may not reach the user, who are engaged in related research.
- Huge money, efforts and more time have to be spent for searching literature in individual journals.

Knowledge sharing and database coverage of scientific journals are correlated. Coverage of journal in bibliographic database is also a major factor which affects retrieval of information [13].

While adding in bibliographic databases, bibliometric visibility of an article depends on the research focus and the citation database [14]. If a journal has more coverage in global databases, definitely its visibility would be more. Bibliographic databases are used as a main tool to share knowledge in the scientific community. Some global databases insist certain pre requisites for indexing of journals. The reputed data bases such as Scopus or Web of science have fixed certain standards for indexing journals. Usually most of the journals would not maintain such international standards. The visibility of scientific scholarly communications can be improved by adopting standard international systems. Council of Science Editors (CSE) and World Association of Medical Editors have published standards which can be implemented by Indian

editors [15] or World Association of Medical Editors [16]. CSE has published a white paper on promoting integrity in scientific journal publications. Editors can adopt the norms specified in the white paper for improving the quality of journals. If Indian journals introduce such systems, definitely their visibility and impact can be improved. The editorial board of Indian scientific journals should adopt the peer review systems along with the good Plagiarism checking systems for accepting the articles for publication. A study conducted by Chan and Costa[17] reveals that a peer reviewed journal is still remains as the primary vehicle for the dissemination of scientific results in spite of electronic publishing and new modes of scholarly publication. They can also go for open access publication of articles. Google enables the published open access articles visible to all research community. Institution repositories (IRs) are also hopeful solution to get more viability and impact for scholarly communications. Authors of individual articles can also get more visibility and impact for his/her article by blogs, if he/she retains the copy right from the publisher while publishing articles.

Table 1: Top 20 Indian STM journals ranked in the list of SRJ 2013

Sl.No	Name of Journal	Journal(j) Proceedings(p)	SJR Impact
1	Journal of Carcinogenesis	j	1,117
2	Bulletin of the Astronomical Society of India	j	1,091
3	Proceedings of the International Congress of Mathematicians 2010, ICM 2010	p	0,917
4	Pharmacognosy Reviews	j	0,843
5	Journal of Food Science and Technology	j	0,839
6	Journal of Biosciences	j	0,781
7	Conservation and Society	j	0,762
8	Noise and Health	j	0,742
9	Journal of Minimal Access Surgery	j	0,682
10	Indian Journal of Fibre and Textile Research	j	0,673
11	Indian Journal of Medical Research	j	0,638
12	Differential Equations and Dynamical Systems	j	0,630
13	International Journal of Artificial Intelligence	j	0,620
14	Pharmacognosy Magazine	j	0,568
15	Advanced Materials Letters	j	0,551
16	Indian Journal of Traditional Knowledge	j	0,550
17	Journal of Global Infectious Diseases	j	0,546
18	Pharmacognosy Research	j	0,530
19	Journal of Human Reproductive Sciences	j	0,517
20	Indian Journal of Pharmaceutical Education and Research	j	0,511

Conclusion

Impact factor will be calculated as an index or marker of journal quality based on the frequency of journal articles cited in scientific publications. That means impact factor of a journal reflects the frequency of journals' articles are cited in the scientific literature. [18]. Impact factor of a journal reflects the frequency with which the journal's articles are cited in the scientific literature. Hence, it is necessary to increase publication of research articles in journals with good impact factor.

In 1948, Nobel laureate Sir C.V. Raman addressed the Institution of Engineers regarding scientific literature publishing in journals[19].According to Sir C.V. Raman emphasize that a country's richness should not be measured on its physical wealth but on the production of scientific literature. He emphasize that India is the only country that consistently and steadily encouraged scientific studies and scientific research, the basis of all wealth. Sure, impact factor of STM journals of India will be increased if scientists across the country decide to strengthen high quality.However, considering Impact Factor as a prestige is undecided among the scientists.

As the scientific production of the country is strongly related to the number of national journals covered by databases, a centralized system is required for management of contents of all Indian STM journals. In India, National Library is the apex body of the Library system which serves as a public library. It is a permanent repository of all type of documents published in India. National Library is entitled to receive one copy of each publication published in the country whether it is a book or scientific article under the Delivery of Books and Newspapers (Public Library) Act, 1954.The Act states that "library matter of any kind, nature and description and includes any document, paper or other thing published by a national publisher"[20]. This clearly indicates that national journals' publishers should deposit the issues of their journals to the national library or centers specified in the Act. Then why such system for journals is not following? If the system is not following, then why not National Library is not taking the interest in content management of journals? Indian Science Abstracts (ISA) is collecting and indexing the bibliographic details of the journals listed in the Directory of Indian ST journals, but it does not cover all Indian STM journals. Of course, most of the scientific journals are registered at Registrar of Newspapers for India (RNI). But RNI is not concerned for content management service. An urgent constitution of an authority by the union government of India is needed for the online indexing and content management of all Indian journals. If existing law is not sufficient to enforce, then Indian government should make new Act/law which enables all Indian journal publishers to submit the contents of their journals/magazines to one agency or ISA mandatorily. It is not a difficult task at least to do the content management of journal articles since more journals are being published through online. Then only all journals appear on one platform for indexing which enables scientific scholarly communications to reach all users without time and place barrier. The National Knowledge Commission (NKC) should be involved in solving the problems pertaining to content management of Indian journals.

In India, there is no dearth for resources, experts and research activities. Bur we lack awareness related to proper documentation of information in a scientific manner which causes non-visibility of on-going and done research activities.

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