Open Access Scholarly Publishing in India: A Scientometric Perspective of DOAJ

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Abstract

The present study attempts to evaluate the initiatives taken by India to make its intellectual output accessible for all by publishing in Open Access resources like Open Access journals. Directory of Open Access Journals (DOAJ) is the most accepted and authoritative list of scholarly, peer-reviewed, fully Open Access journals. It also highlights various facets related to open access publishing in India on the bases of data collected from DOAJ. The position of India in terms of number of journals in the Directory of Open Access Journals (DOAJ) is fourth well ahead of countries such as Germany, Spain, Canada. Most of the Indian open access journals listed in DOAJ were started in the beginning of 21st century.

Keywords: *Open Access Journals; Scholarly Communication; Scientometric Study; DOAJ; India*

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1. INTRODUCTION

Open Access movement started with series of statements and declarations at Global level. The movement has gained momentum since a decade through three major statements made in Budapest, Bethesda and Berlin. Open Access movement is the worldwide effort to provide free online access to scientific and scholarly research literature, especially peer-reviewed journal articles and preprints. Open Access literature is digital, online, free of charge, and free of most copyright and licensing restrictions. It can be in the form of peer-reviewed journal articles and conference papers as well as technical reports, theses and working papers etc. Open Access benefits the academic world in general by removing subscription barriers to research material. Making it available freely will increase the number of readers. For an individual researcher this means higher citations for an open access article. Publishing Open Access also allows authors to retain more rights to their own work like distribution, re-use, etc.

Scholarly communication is often used interchangeably with the term scholarly publishing. Scholarly communication is the process of academics, scholars and researchers sharing and publishing their research findings so that they are available to the wider academic community (such as university academics) and beyond[1]. It includes both the dissemination and access to scholarship and research in a variety of formats and states of completion, such as published books or journal articles, research results and data sets, and drafts of papers[2].

Review of related literature has always been essential for research. According to Ali[3], "literature review is a comprehensive survey of the works published in a field of study, or related to a particular line of research, usually in the form of a bibliographic essay or annotated list of references in which attention is drawn to the most significant works". Literature review provides the researcher with a knowledge-base and helps in identifying the gaps in the literature.

Agashe, Ajay T, Lihitikar, Shalini and Lihitkar, Ramdas (2010) studied about the DOAJ, which lists open access journals, scientific and scholarly journals that meet high quality standards by exercising peer-review or editorial quality control and are free to all from the time of publication based on the Budapest Open Access Initiative. Altogether 48 Business and Management E-journals were analyzed based on Country, Languages. Subject Headings and Accessibility of

Archives of E-journals. Rafiq, Rather and Shah, Geelani (2008) attempts to evaluate the initiatives taken by India to make the intellectual output accessible for all by publishing them in Open Access resources like Open Access journals and archiving them in Open Access archives or repositories. The results revealed that India is continuously contributing in Open Access literature as some of the premier institutions, particularly in the science and technology area, are providing Open Access to their research publications.

Kumar G. H., et al. (2012) attempted to evaluate the initiatives taken by India in contributing to open access repositories and journals with special reference to agricultural sciences. The results revealed that India is continuously contributing in open access literature as some of the premier institutions, particularly in the agriculture sciences. The position of India in terms of number of journals in the Directory of Open Access Journals (DOAJ) is 5^{th} and in Directory of Open Access Repositories (OpenDOAR) India has 11th place in the world repository. Chauhan, Kaushal (2012) studied and evaluated open access e-journals in LIS available on Directory of Open Access Journals (DOAJ) which provides access to quality controlled Open access journals. The paper also provides guidance to students, researchers, scholars about free, full-text, quality-controlled scientific and scholarly journals in Library and information science available on DOAJ.

Husain, Shabahat and Nazim, Mohammad (2013) analyzed 106 open access journals in Media and Communication subject listed in DOAJ. The result revealed that most of the open access journals in Media & Communication were started during late 1990s and are being published from 34 different countries on 6 continents in 13 different languages. It is surprising to note that India's contribution towards OA journals in Media & Communication is almost nil.

S, Aswathy and A, Gopikuttan (2013) studied the contribution of open access literature in the subject physics through DOAJ. There were 153 journals in DOAJ in the subject physics contributed from 38 countries. USA was the top most country with 34 journals published. India ranked seventh position with 5 journals.

2. DOAJ: NEW MEANS FOR PUBLISHING AND ARCHIVING

DOAJ (Directory of Open Access Journals) is the most recognized and most authoritative list of scholarly, peer-reviewed, fully Open Access journals and is hosted by Lund University Libraries, Sweden but is externally funded by sponsors and members. The initiative to start the project Directory of Open Access Journals (DOAJ) was taken in 2002 at the first Nordic Conference on Scholarly Communication (NCSC). The idea was to develop a one stop shop service which made it easier for libraries and aggregators to integrate OA journals data in their services, for OA-publishers to get their journals visible and for readers to find OA-material (Johansson, Anna-Lena and Wahlgren, Ingela, 2008). The aim of the DOAJ is to increase the visibility and ease of use of open access scientific and scholarly journals, thereby promoting their increased usage and impact. The DOAJ aims to be comprehensive and cover all open access scientific and scholarly journals that use a quality control system to guarantee the content. In short, the DOAJ aims to be THE one stop shop for users of open access journals. This directory aims to provide a service by maintaining an inventory of scientific, quality controlled, full text open access journals to amplify the visibility and ease of use of open access journals and thereby promoting their augmented usage and impact. DOAJ has 9991 journals from 124 countries worldwide in which public health contribution as on November 2013 is 238 journals. At article level search DOAJ contains 5686 journals.

3. OBJECTIVES

The main objective of the study is to evaluate India's contribution in the primary vehicle for delivering Open Access scholarly literature i.e Directory of Open Access Journals (DOAJ). The specific objectives of the present study are to:

- Identify the leading countries in terms of publishing OA journals
- Find out year-wise growth of public health OA journals in world wide
- To analyze publisher-wise distribution of OA journals
- To find out the distribution of priced vs. open access journals
- To categorize language-wise distribution of journals

- To find out public health contribution by publishing date

4. SCOPE

The scope of this study is limited to the Directory of Open Access Journals (DOAJ). The Directory of Open Access Journals (DOAJ) covers journals in all disciplines of knowledge from all over the world; however, the present study is limited to the subject Public Health contributions to DOAJ.

5. MATERIALS AND METHODS

There are 598 journals in DOAJ contributed by India as per the data accessed in November 2013. The relevant details regarding the number of journals, publisher, country, language, subject, publishing date etc have been collected and tabulated using MS Excel. The data were interpreted and analysed based on a set of parameters defined in the objectives of the study to get the right picture of India's contribution to Open Access Scholarly Output.

6. RESULTS AND DISCUSSIONS

6.1. Country-wise Contributions in DOAJ

There are 124 countries worldwide who have contributed journals to DOAJ since its inception. Table-1 and Figure-1 shows the list of top ten countries as per the journals in the DAOJ. USA is the top contributor with 1230 (21.99%) journals followed by Brazil with 932 (16.66%), UK with 629 (11.25%) journals contributed to DOAJ. India ranks number four in terms of number of journals contributed to DAOJ ahead of Spain, Egypt and Germany and the number is increasing every year passed by.

Tabel-1: Top Ten Countries Contribution to DOAJ

Sr. No.	Country	No. of Journals Contribution	Percentage
1	United States	1230	21.99%
2	Brazil	932	16.66%

3	United Kingdom	629	11.25%
4	India	598	10.69%
5	Spain	525	9.39%
6	Egypt	460	8.22%
7	Germany	350	6.26%
8	Romania	304	5.44%
9	Italy	292	5.22%
10	Canada	273	4.88%
	Total	5593	100.00%

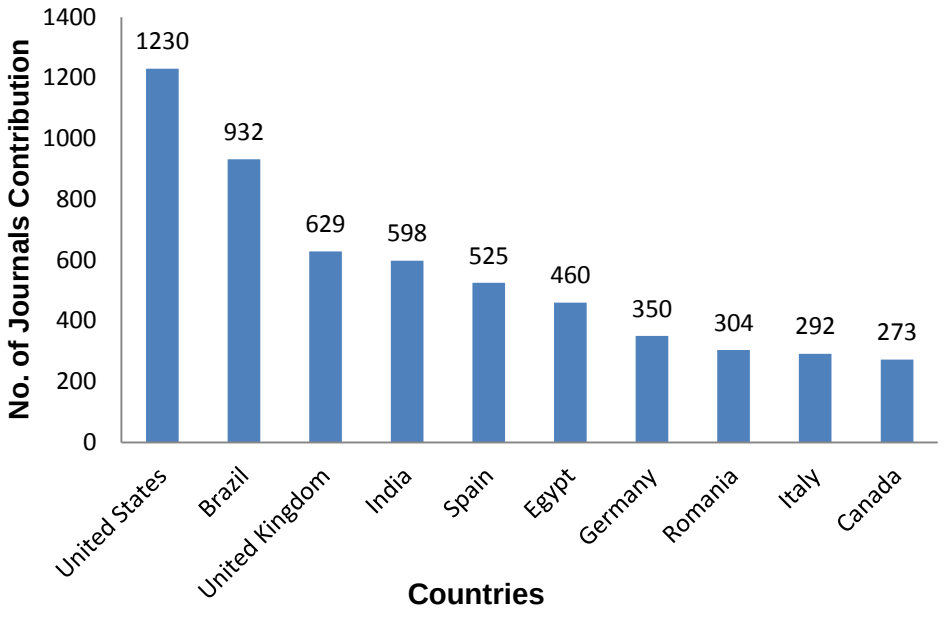

Fig.1: Top Ten Countries Contribution to DOAJ

6.2. Year-wise Indian contributions in DOAJ

India was not among the countries which contributed their journals to the Directory of Open Access Journals (DOAJ) when it was created in 2002. Since 2003, India has contributed to DOAJ continuously as shown in Table 2 . India is one of the top most contributed country now

and its placed fourth rank. Highest no of journals from India added to DOAJ in the year 2013 with 208 (34.78%) and lowest is 12 (2.01%) in the year 2003.

Table-2: Year-wise Indian contributions in DOAJ

Sr. No.	Year	No. of Journal Contribution	Cumulative	Percentage
1	2002	0	0	0.00%
2	2003	12	12	2.01%
3	2004	15	27	2.51%
4	2005	12	39	2.01%
5	2006	15	54	2.51%
6	2007	15	69	2.51%
7	2008	22	91	3.68%
8	2009	42	133	7.02%
9	2010	103	236	17.22%
10	2011	72	308	12.04%
11	2012	82	390	13.71%
12	2013	208	598	34.78%
Total		598		100.00%

6.3.Subject-wise Contributions of Indian Journals to DOAJ

All the 598 Indian journals in DOAJ have spread across different subject areas; Health Sciences, Technology and Engineering, General Works /Multidisciplinary, Science, Biology and Life Sciences, Chemistry, Social Science, Agriculture and Food Sciences, Business and Economics, Earth and Environmental Sciences, Languages and Literatures, Mathematics and Statistics, Library and Information Science and Law and Political Science. Subject categorization of Indian journals are listed in Figure-2. Health Sciences contributions are more in number with 229 (38.29%), followed by Technology and Engineering 127 (21.40%), General Works /Multidisciplinary journals are 56 (9.36%), Science 36 (6.02%), Biology and Life Sciences 30

(5.02%), Chemistry 25 (4.18%), Social Sciences 22(3.68%) and Library and Information Science 6 (0.84%) respectively.

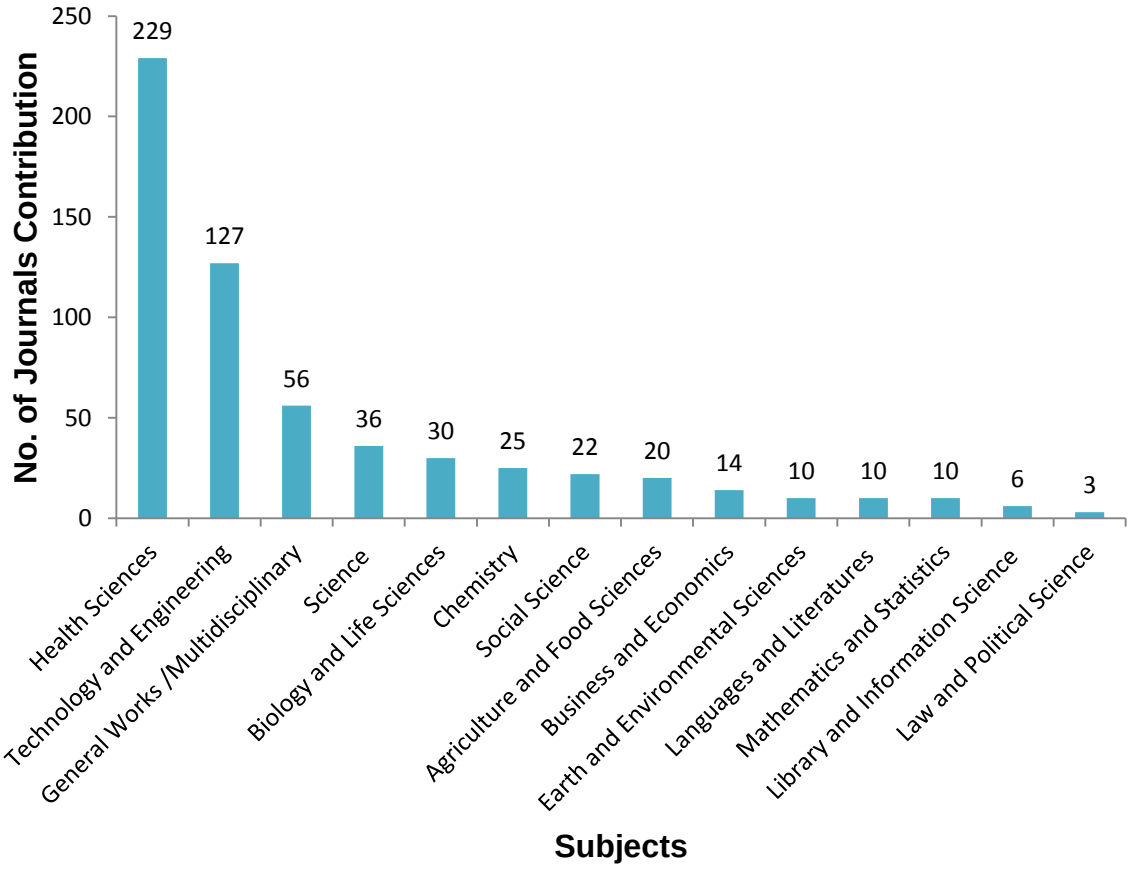

Fig.2: Subject-wise Contributions of Indian Journals in DOAJ

6.4 Publishers-wise Contributions of Indian Journals in DOAJ

Table-3 gives list of publishers-wise Indian contributions to the Directory of Open Access Journals. Out of 598 Indian contributions from 377 publishers, Medknow Publications tops the table with 78 (13.04%) contributions, followed by AIRCC with 24 (4.01%), NISCAIR with 17 (2.84%), Sciencedomain International publishers with 15 (2.51%), Indian Academy of Sciences and Bioinfo Publications with 10 (1.67%) contributions each. There are 337 publishers from India who contributed one journal each to DOAJ.

Table-3: Publisher-wise Contributions of Indian Journals in DOAJ

Sr. No.	Publisher	No. of Journals Contribution	Percentage
1	Medknow Publications	78	13.04%
2	Academy & Industry Research Collaboration Center (AIRCC)	24	4.01%
3	NISCAIR	17	2.84%
4	Science domain International	15	2.51%
5	Indian Academy of Sciences	10	1.67%
6	Bioinfo Publications	10	1.67%
7	Kamla-Raj Enterprises	9	1.51%
8	Shastri Education TrustÂ®	8	1.34%
9	Integrated Publishing Association	7	1.17%
10	Bonfring	7	1.17%
11	Wolters Kluwer Health and Medknow Publications	4	0.67%
12	RG Education Society	4	0.67%
13	Ingenious Knowledge Solutions	4	0.67%
14	Engg Journals Publications	4	0.67%
15	The Standard International Journals	3	0.50%
16	Scholar Science Journals	3	0.50%
17	S&S Publications	3	0.50%
18	Medip Academy	3	0.50%
19	Institute for Research and Development India	3	0.50%
20	Indian Association of Preventive and Social Medicine	3	0.50%
21	Eoryx Publications	3	0.50%
22	AkiNik Publications	3	0.50%
23	Technopark Publications	2	0.33%

24	SN Education Society	2	0.33%
25	Shri Pannalal Research Institute of Technolgy	2	0.33%
26	Seventh Sense Research Group Journal	2	0.33%
27	Scientific Planet Society	2	0.33%
28	Scientific and Academic Publication	2	0.33%
29	Scholars Research Library	2	0.33%
30	Pelagia Research Library	2	0.33%
31	Medknow Publications and Media Pvt. Ltd	2	0.33%
32	Laxmi Book Publication	2	0.33%
33	Infofacility	2	0.33%
34	Indian Psychiatric Society	2	0.33%
35	GKS Publisher	2	0.33%
36	EManuscript Services	2	0.33%
37	Educational Research Multimedia & Publication	2	0.33%
38	Celesta Software Private Limited	2	0.33%
39	PAdvanced Research Journals	2	0.33%
40	Academic Sciences	2	0.33%
41	Publishers with one journal	337	56.35%
	Total	598	100.00%

6.5 Distribution of priced vs. open access journals

Table-4 indicate that out of 598 publications, majority of the journals are No Article Processing Charge with 259 (43.31%), followed by Article Processing Charge with 257 (42.98%), No Information Article Processing Charge with 78 (13.04%) and Conditional Article Processing Charge with 4 (0.67%) respectively.

Tabel-4: Distribution of Priced Vs. Open Access Journals

Sr.No	Type of Publication	No. of Journal Contribution	Percentage
1	journals with No Article Processing Charge	259	43.31%
2	Journals with Article Processing Charge	257	42.98%
3	journals with Conditional Article Processing Charge	78	13.04%
4	journals with No information Article Processing Charge	4	0.67%
	Total	598	100.00%

6.6 Language wise Contributions Distribution

Table-5 indicates the language-wise distribution of Indian contribution to DOAJ. Out of 598 journals, 587 (98.16%) journal publish articles only in English, followed by 5 (0.84%) journals which accept articles in English, Hindi, Marathi, 2 (0.33%) English and Hindi, 1 (0.17%) in English, Hindi, Sanskrit, Marathi, 1 (0.17%) in English, Bengali, Hindi, Arabic, 1 (0.17%) in Hindi and 1 (0.17%) in Tamil, English language.

Tabel-5: Language-wise Distribution of Indian Contribution

Sr. No.	Language	No. of Journal Contribution	Percentage
1	English	587	98.16%
2	English, Hindi, Marathi	5	0.50%
3	English and Hindi	2	0.33%
4	English, Hindi, Sanskrit, Marathi	1	0.17%
5	English, Bengali, Hindi, Arabic	1	0.17%
6	Hindi	1	0.17%
7	Tamil, English	1	0.17%
	Total	598	100.00%

6.7 India's Contribution by Publishing Date

The Indian journals in DOAJ are mostly published since 1990's when the World Wide Web was born. However, two old journals, published prior to Indian's independence (Journal of Genetics in 1910 and Defence Science Journal in 1950), have also been included. Table-6 below shows that most of India's journals in DOAJ were published in the 21st century. India published 288 (48.16%) journals in the first decade of 21st century (2001-2010) and an equal number of journals 288 (48.16%) published in the last three years (2011-2013) itself.

Table-6: India's Contribution by Publishing Date

Sr. No.	Start Year	No. of Journal Contribution	Percentage
1	Up to -1980	5	0.84%
2	1981-1990	3	0.50%
3	1991-2000	14	2.34%
4	2001-2010	288	48.16%
5	2011-2013 (Nov 19th)	288	48.16%
	Total	598	100.00%

7 CONCLUSION

Open access to scientific journals is beneficial to scholars and has wide support as a concept, but it needs viable revenue models and great commitment among its promoters. Open Access journals are one of the potential solutions to the crisis in serial's pricing, particularly for a country like India, where most of the government academic libraries do not have adequate funds to keep the subscription of these journals by paying huge amounts.

The OA journals are now clearly and broadly being recognised as essential vehicle for scholarship in the digital world. This is evident based on the continuous growth of OA journals in different disciplines around the world. There are 598 journals in DOAJ contributed by India as per the data accessed in November 2013. The position of India in terms of number of journals

in the Directory of Open Access Journals (DOAJ) is fourth well ahead of countries such as Germany, Spain, Canada. Most of the Indian open access journals listed in DOAJ were started in the beginning of 21st century.

The continued development of OA journals depends a great deal on our continuing to overcome cultural, legal and financial barriers to their acceptance and use. Most of the public funding research institutions in India have started providing free access to their journals over the internet. It may be expected that in the next few years we will see sustainable growth of OA Journals as some leading publishers are also taking interest in OA journals publishing.

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