

Research Article

Impact of Open Access Journals in DOAJ: An Analysis

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Abstract The present study aims to investigate the trend and growth of open access journals at a global level, in DOAJ portal. Study is based on the data taken from the Directory of Open Access Journals (DOAJ) from 2002 to 2018, a database of fully open access peer-reviewed scholarly journals. Author found that there are 12065 journals indexed in DOAJ on all the field of study. The study presents findings on the contribution to DOAJ by country, year, language, and subject. Study found that, countries like United Kingdom and Indonesia publications are more in this portal and English is the most common communication language. Most of the journals do not charge article processing charges (APCs). Majority journals are Peer Reviewed journals. Medicine and Education related journals are highest in this portal, 11% of the 12065 journals in DOAJ have been awarded DOAJ special tag/designation. Contribution of Elsevier, Sciendo and BioMed Central publishers is more compared to other publications during the study period.

Keywords *Bibliometrics; DOAJ; Open access journals; Peer reviewed journals*

1. Introduction

Open access movement has benefited all the participants in scholarly information communication system. It has helped authors and researchers by providing enhanced visibility and increased impact of their work. At the same time, it has enabled users to access information from different parts of the world just at a click of mouse (Singh N). The Directory of Open Access Journals was launched in the year 2003 at Lund University in Sweden, with 300 open access journals and today it contains more than 12000 open access journals covering all areas of science, technology, medicine, social science and humanities. DOAJ is a community-curated list of open access journals and aims to be the starting point for all information searches for quality, online directory that indexes and provides access to high quality peer reviewed open access material. All data is freely available, 33, 24,126 articles can be searched online in this portal. Its mission is to increase the visibility, accessibility, reputation, usage and impact of quality, peer-reviewed, open access to scholarly research journals globally, regardless of discipline, geography or language. DOAJ is committed to being 100% independent and maintaining all of its services and metadata as free to use or reuse for everyone.

DOAJ is a not-for-profit an independent organization, all funding is via donations 40% of which comes from sponsors and 60% from members and publisher members. DOAJ is managed by Infrastructure

Services for Open Access C.I.C. (Community Interest Company) based in the United Kingdom. DOAJ has an Advisory Board, the members carry out their duties voluntarily. DOAJ partners with a broad range of organizations. The nature of the partnership varies and includes contracts for work, collaborations, or access to information resources that assist with their application review process. DOAJ uses the services of approximately 100 voluntaries editorial staff who review applications. Volunteers are bound by a Code of Conduct and an agreement that they must sign and return to DOAJ before they can carry out their duties. All volunteers are bound by the Code of Conduct to declare any conflicts of interest to the Managing Editors. (Directory of Open Access Journals, 2018)

Review of Literature

Few studies have been made by the different researchers on DOAJ.

Waghmare and Khaparde (2016) made a scientometric analysis of 128 papers published data is collected using the DOAJ and analyzed with the help of Microsoft Excel. The study focuses on various aspects of the journal such as year wise growth of papers, authorship pattern, degree of collaboration, author affiliated institutions, length of pages and average of citations. The study found that degree of collaboration and University of South Florida topped in the institution list. Kumar and Atchamamba (2015) examined the open access journals which are listed in the DOAJ, and analyzed the open access journals on Fisheries and Aquaculture published in various years, in different disciplines, languages, countries and license wise. Researcher revealed that, the majority of journals are published by United States; English being the most common communication language, the large numbers of journals are published in Aquaculture and fisheries disciplines, while very few journals are published in zoology, biology, ecology and environmental science disciplines respectively. Further, they found that the majority of journals were published during the year 2002-2011. Kumar (2014) analyzed the total 140 free full text with abstracts online journals in environmental science were accessed through DOAJ and these journals were analyzed based on e-journals, country wise distribution, language wise distribution, year wise growth pattern, institution wise distribution of publishers, distributions of subject headings their accessibility of archives of online journals in Environmental Science. It is found from the study that the United States publishes more and more open access journals. English language is dominating the open access e-journals in the field of Environmental science with 1st Rank. A majority of the e-journals publishing in the environmental science 37(26.43%) were contributed by university. Pujar (2014) said that, open access spurred by the Internet has brought in new vistas for dissemination of scholarly content in almost all the disciplines. It has enabled agencies, publishers and individuals to distribute scholarly content online, free from licensing restrictions and cost. Like other fields, the growth of open access has also benefited the field of library and information science (LIS). In this paper an attempt has been made to assess the current status of open access journals in LIS covered in Directory of Open Access Journals (DOAJ) based on various productivity parameters. Researcher found that, USA is contributing highest number of journals and English is the main language of communication in LIS field. Further he noted that, JCR has provided IF only for 6 (4.08%) journals. Lihitkar and Lihitkar (2013) studied 100 open access journals in the subject of Library and Information Science in their article. All these open access journals were accessed through DOAJ site and analyzed based on various parameters like country, languages, subject headings, keywords, their accessibility and availability of Archives of online journals in LIS field. Authors observed that eleven open access journals on LIS have been started in the year 2005 and 2006 followed by 8 journals in the year 1999, 2004, and 2007. It has been observed that maximum number of 30 open access journals on LIS have been published by United States, hence secured 1st rank which published 11 E-journals. English is the most common communication language for scientific community which is used by 88 open access journals on LISc.

Objectives

The main objectives of the present study are:

1. To reveal the present status of Directory of Open Access Journals.
2. To know the subject coverage of DOAJ.
3. To find out the type of licensing used in DOAJ.
4. To study the geographical and language wise distribution of journals in DOAJ.
5. To determine the year wise growth of open access journals in DOAJ.

2. Methodology

The data represented in this article is accessed and easily downloaded basic information about the journals from the Directory of Open Access Journals (DOAJ) and got all the required information on 9th September 2018 analyzed and generated tables and figures with the help of MS-Excel. Journals were analyzed based on discipline, country wise, language wise, year wise, type of license and others.

Scope of the Study

The scope of the study is limited to Directory of Open Access Journals that too limited to only top 10 subjects, publishers, country, languages and so on. And it is not covered any other directories and databases for the study purpose.

3. Data Analysis and Interpretation

Table 1: *Subject wise distribution of journals*

Subjects	No. of journals	Percentage
Business	369	8.24
Education	1005	22.45
Language and literature	308	6.88
Medicine	1151	25.71
Science	329	7.35
Social sciences	973	21.74
Special aspects of education	340	7.59
Total	4475	99.96

Table 1 reports top seven different subjects available in the Directory of Open Access Journals. Majority of the journals are belonged to the Medicine subject as it is contained 26% publications, followed by Education and Social Science subjects with around 22%. Remaining subjects like Business, Special aspects of education, Science related journals are published in between 8 to 7% publications, whereas Language and Literature related journals are very less.

It shows that, DOAJ is very powerful open access portal for Medicine and Education related professionals.

Table 2: *Distribution of journals according to publication fee*

Article processing charges	Number of journals	Percentage
Yes	3182	26.37
No	8815	73.06
No information	68	0.56
Total	4475	99.96

Now a days, few publishers are charging publication fee from the authors. In this DOAJ portal also there are journals that charge the authors. Even though DOAJ is an open access portal, processing fee is compulsory for few journals in this portal also. Table 2 found that, 26% of the journals are charging the article processing charges to the authors, whereas, majority 73% are not charging any charges to the authors and 68 number of journals have not provided any information related to article processing charges during the study period.

Table 3: Top 10 publishers in DOAJ

Name of the publisher	Number of journals	Percentage
Elsevier	342	15.68
Sciendo	328	15.03
BioMed Central	311	14.25
Hindawi Limited	273	12.51
Springer	192	8.80
MDPI AG	180	8.25
Wolters Kluwer Medknow Publications	171	7.84
SAGE Publishing	145	6.64
Taylor & Francis Group	137	6.28
Dove Medical Press	102	4.67
Total	2181	99.95

Various journals are published by the different publishing houses in the world. Table 3 shows the top 10 publisher wise distribution of journals in Directory of Open Access Journals Portal. Elsevier and Sciendo publishers published majority 15% journals in DOAJ whereas, BioMed Central and Hindawi published 14% and 13% journals. Remaining six publishers published 42% journals in this portal, majority 57% of the journals are published by top four publishing houses i.e. Elsevier, Sciendo, BioMed Central and Hindawi Limited.

On an average 218 journals are published by each publisher, and in this study only top four publishers published more than average number of journals in this portal.

Table 4: Top 10 countries in DOAJ

Name of the country	No. of journals	Percentage
United Kingdom	1406	11.65
Indonesia	1359	11.26
Brazil	1275	10.56
United States	664	5.50
Spain	656	5.43
Poland	536	4.44
Islamic Republic of Iran	416	3.44
Italy	333	2.76
Turkey	324	2.68
Romania	315	2.61
Remaining 118 Countries	4781	39.62
Total	12065	99.95

Table 4 depicts the top 10 country wise distribution of publication of different journals. United Kingdom, Indonesia and Brazil published majority around 11% of the journal's publications in DOAJ and stood 1st, 2nd and 3rd rank respectively. Remaining countries such as United States and Spain published and contributed just 6% of the journals. Poland, Iran, Italy, Turkey, Romania together published 16% in the study area by publishing 2 to 4% journals and remaining one hundred and eighteen countries contributed 40% publications in this DOAJ portal during the study period. Top three countries together published majority 33% journals in this study.

Table 5: *Top 10 languages in DOAJ*

Languages	No. of journals	Percentage
English	9379	54.91
Spanish	2331	13.64
Portuguese	1683	9.85
Indonesian	1132	6.62
French	883	5.16
Russian	485	2.83
Italian	436	2.55
German	344	2.01
Turkish	238	1.39
Persian	169	0.98
Total	17080	99.94

Journals are published in different languages of the world; language wise distribution of journals in Directory of Open Access Journals Portal is shown in Table 5. As usual English language is the most common communication language in this world and it leads all the languages. 55% of the journals are in the English language, Spanish language journals are 14% and Portuguese language journals are 10% of the publications in this study. Indonesian language published 7%, French language 5%, Russian, Italian, German, Turkish and Persian language journals are published 3% to 1% respectively. Study revealed that majority of the journals are published in English language.

Table 6: *Review wise distribution of journals*

Type of journals	Frequency	Percentage
Double Blind Peer Review	5778	47.89
Blind Peer Review	3418	28.32
Peer Review	2540	21.05
Editorial Review	133	1.10
Open Peer Review	131	1.08
Not known	65	0.53
Total	12065	99.97

Every journals impact factor is depending upon its quality of articles and these articles in the journals are reviewed by subject experts, some of them are peer reviewed and some are blind peer reviewed, Table 6 revealed that, 48% of the journals available in this DOAJ portal are double blind peer reviewed journals, followed by 28% blind peer reviewed journals and 21% peer reviewed journals. Around 1% of the journals are editorial reviewed and opened peer reviewed journals. Sixty-five journals have not mentioned anything about it. It is interesting to know that, nearly 50% of the journals are double blind peer reviewed journals.

Table 7: *Establishment year wise distribution of journals*

Year added to DOAJ	Frequency	Percentage
2018	1800	14.91
2017	2611	21.64
2016	1757	14.56
2015	1380	11.43
2014	438	3.63
2013	907	7.51
2012	544	4.50
2011	553	4.58
2010	573	4.74
2009	311	2.57

2008	281	2.32
2007	191	1.58
2006	165	1.36
2005	169	1.40
2004	193	1.59
2003	169	1.40
2002	23	0.19
Total	12065	99.91

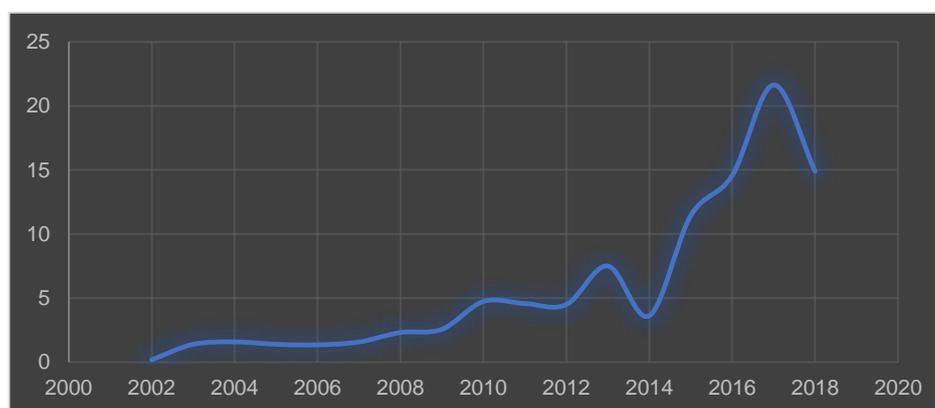


Figure 1: Establishment year wise distribution of journals

Table 7 and Figure 1 depict that, the year wise distribution of establishment of various journals in DOAJ portal. DOAJ was established in the year 2003 and before that, in the year 2002, 23 journals are added in DOAJ portal, gradually it increased year by year in the year 2011-12 it increased to around 5% journals. Big jump came in the year 2013 with 8% increase, but in the year 2014 adding of journals to DOAJ came down to 4%. But again, it raised to 11% in 2015, and 15% in 2016 and 18%. Majority of the journals were added in the year 2017 with 22% journals in the last seventeen years. More number of journals were added in between the year 2015 to 2018.

Table 8: License wise distribution of journals

Journal license	Description of license	Number of articles	Percentage
Creative Commons (CC)	Creative Common Attribution	4992	41.49
CC By-NC-ND	Attribution-Non-Commercial - No Derivatives	2686	22.32
CC By-NC	Non-Commercial Uses	2190	18.20
CC By-NC-SA	Attribution-Non-Commercial-Share Alike	899	7.47
CC By-SA	Attribution-Share Alike	725	6.02
	Publisher's own license	409	3.39
CC By-ND	Attribution-No Derivatives	129	1.07
Total		12030	99.96

Every publisher and journals are having license to publish and distribute the content of journals and allowed users to edit and redistribute the content in this informative world. Licenses are categorized into seven categories in DOAJ portal. Table 8 displays the license wise analysis of journals, majority 41% of the journals got license of Creative Commons, 22% journals got most restricted CC by 'Non-Commercial-No Derivative' attribution and 18% got CC by 'Non-Commercial'. 7% journals got it CC-By 'Non-Commercial – Share Alike', 6% journals got CC by 'Share Alike'. Publisher's own license and CC by 'No-Derivatives' got 3% and 1% licenses respectively.

Table 9: DOAJ seal wise distribution of journals

DOAJ seal to journals	Number of journals	Percentage
No	10772	89.28
Yes	1293	10.71
Total	12065	99.99

Table 9 depicts the DOAJ seal wise distribution of journals. In addition to being included in DOAJ, while all of the journals in the directory have been evaluated and deemed to be of substantial quality “the [DOAJ] Seal is an extra mark of approval that is awarded to journals” for adhering to “outstanding best practice”. As of September 2018, just 1293 (11%) of the 12065 journals in DOAJ have been awarded this tag of special designation. Journals that are awarded the Seal have answered ‘Yes’ to 7 questions that DOAJ has chosen specifically as indicators of an “extra high and clear commitment to open access best practices, of extra high levels of commitment to publishing technologies, and the most ‘open’ form of open access”.

4. Findings

1. Study revealed that, DOAJ is a very powerful Open Access Portal for Medicine and Education related professionals, as this subject journals and articles are more compared to other subjects in this portal.
2. Majority of the journals in this portal are not collecting any article processing charges or publishing charges from the authors.
3. Elsevier publisher is the major contributor to DOAJ portal.
4. Majority contribution to this DOAJ portal came from United Kingdom, Indonesia and Brazil by contributing 33% of the journals in this portal.
5. Again, it is revealed here also that, English language journals are more compared to any other language journals.
6. If you see the quality wise distribution of the journals in this portal, 97% of the journals are peer reviewed journals.
7. Big boost to DOAJ came in the year 2017 with 22% journals were added during this year alone.
8. Only 11% of DOAJ journals got DOAJ special seal (tag) for practicing extra high level commitment to open access publications.

5. Conclusion

In summary, DOAJ is widespread and covers open access scientific and scholarly journals and not restricted to any specific language or subject area. Directory of Open Access Journals are increasing its share of the overall volume of reviewed journals. It has helped authors and researchers by providing enhanced visibility and increased impact of their work. At the same time, it has enabled users to access information from different parts of the world just at a click of mouse. The Directory of Open Access Journals (DOAJ) is the main source of information in facilitating organized access to open access literature. There is a need to raise ‘DOAJ’ special seal for practicing extra high-level commitment to open access publications.

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