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# Open Access E-book Repositories: A Global Scenario

Fayaz Ahmad Loan

*University of Kashmir, Srinagar, J&K, India, fayazlib@yahoo.co.in*

Yaseen

*University of Kashmir, Srinagar, J&K, India, ufairashah@gmail.com*

Nelofar Jan

*University of Kashmir, Srinagar, J&K, India, karhuma09@gmail.com*

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# Open Access E-book Repositories: A Global Scenario

**Ufaira Yaseen:** Research Scholar, Center of Central Asian Studies, University of Kashmir, Srinagar, J&K, India. E-mail: [ufairashah@gmail.com](mailto:ufairashah@gmail.com)

**Nelofar Jan:** Research Scholar, Center of Central Asian Studies, University of Kashmir, Srinagar, J&K, India. E-mail: [karhuma09@gmail.com](mailto:karhuma09@gmail.com)

**Dr. Fayaz Ahmad Loan:** Documentation Officer, Center of Central Asian Studies, University of Kashmir, Srinagar, J&K, India. E-mail: [drfayazlone@gmail.com](mailto:drfayazlone@gmail.com) (Corresponding Author)

## ABSTRACT

The present study aims to study the status of open access e-book repositories in the OpenDOAR. In order to fulfill the set objectives, relevant data were extracted from the OpenDOAR and was organized in tabular forms based on certain parameters viz: Geographical distribution, Software usage, Language diversity, Subject coverage, Operational status, Repository type and Growth of Repositories. The findings reveal that repositories containing books were 1329 in number, out of which Europe was seen to be the most dominating continent contributing 55.2% of the repositories. The USA topped the list of countries by contributing 10.2% of the repositories. Most of the repositories preferred DSpace software (42.1%). 85.6% of the repositories belonged to Institutions. Almost 96% of the repositories were seen to be functional. Since the scope of the study was restricted to OpenDOAR only, hence cautions should be taken while generalizing the results.

**Keywords:** Open Access, Digital Repositories, Open Access Repositories, OpenDOAR, Green Road

## 1. INTRODUCTION

The growth in Knowledge has been taking place at a tremendous pace since the advent of Information and Communication technology, especially World Wide Web by Tim Berners Lee in 1983. As a result, there has arisen a growing demand for the maximum sharing and dissemination of the information by the

user community. Prior to the Information and communication technology, there were several barriers faced during the communication of information including geographical, linguistic as well as the financial barrier. Thus, to overcome these barriers, Information and Communication Technology, particularly World Wide Web played a major role and revolutionized scholarly communication in every aspect. Further, another revolutionary trend in the scholarly publishing called as Open Access enabled the users to access the junk of knowledge produced every day without paying anything. Although Open access concept had emerged long before the emergence of WWW, it gave a momentum to the Open access publishing in scholarly world and thus, today open access is one of the trending topics amongst the scholarly community.

### **1.1 Open Access**

Open access means free access to the scholarly literature. It has become a global movement in present era. Loan & Rather (2007) termed open access as a global platform for sharing research output freely across the nations. Open access has been comprehensively defined by the Budapest Open Access Initiative in 2002 as “Literature, freely available on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself”. Shah, Loan and Jan (2018) are of the view that the open access concept was present in the minds of scholars long before but Budapest Open Access Initiative formally launched this movement. Budapest statement on Open Access was followed by the Bethesda statement on open access publishing in April 2003 and Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities in October 2003. However, all the three statements emphasized on the promotion of open access in scholarly world and thus, the open access started gaining momentum and today, a large amount of scholarly literature is available freely to the users over the Internet. There are two ways to achieve Open access: One is the Gold Road and another Green

Road. In Gold road to open access, the authors publish in the journals that may or may not charge Article processing fees and after publishing, their work is made freely available to the users. In Green road to open access, the authors publish in traditional subscription-based journals after which they can self-archive their work in some open access repository wherefrom it can be assessed freely without any restriction. Open access repositories refer to the online archives that store the scholarly information for future use. These repositories act as the means for the dissemination of the intellectual output of the institutions that may be a research organization or university to communities and to the public at large (Singh, 2016).

## **1.2 OpenDOAR**

OpenDOAR is an authoritative directory of institution and subject-based open access repositories and provides a qualitative list of open access repositories around the world. Oliver and Swain describe OpenDOAR as the key resource for the open access community. It was initiated by the University of Nottingham, the UK in 2006. It is maintained by SHERPA services based at the Center for Research Communication (CRC). OpenDOAR staff harvest and assign metadata to allow categorization and analysis to assist the wider use and exploitation of the resources. OpenDOAR is supporting open access initiative not only at the institution level but globally.

## **2. LITERATURE REVIEW**

Several studies have been carried out on the status of open access publishing in scholarly world. Open access publishing has become the talk of the modern publishing era. Ganaie, Jan, Loan and Nisa (2014) conducted a study on the status of the open access repositories in the field of Library and Information Science in OpenDOAR. The authors conclude that the open access repositories in Library and Information Science are gaining momentum worldwide as more and more countries are registering themselves in OpenDOAR in the said field. Further, they conclude that United States is the topmost country contributing to OpenDOAR in LIS field. In an another study by Loan (2014), the author

studied the status of open access repositories in Asia and concluded that Asia is the third largest region in terms of number of open access repositories worldwide and Japan as the most predominant country contributing almost 35% of the open access repositories. The author also revealed that most of the repositories were that of universities and research centers. Lone, Rather and Shah (2008) accessed the Indian contribution to open access literature. They also conclude that India is ahead of countries like China, Australia and Japan in terms of number of journals in DOAJ and is sharing 10<sup>th</sup> position with Sweden and Spain in terms of number of repositories in OpenDOAR. Lone and Sheikh (2015) conducted an analysis of the Open access repositories in the field of health and medicine. The authors reveal that USA is contributing significantly in the Open access repositories, followed by Japan and U.K. Ali, Loan and Mushtaq (2018) analyzed the scientific repositories in OpenDOAR and found out that Europe and USA are the most predominant continent and country respectively contributing the highest number of repositories to Open DOAR. Further, the authors conclude that most of the repositories are institutional, using DSpace software and don't have well-defined metadata policy. Pinfield et al reviewed the worldwide growth of the open-access repositories using data collected from the OpenDOAR from 2005 to 2012 and found that globally, repositories are predominantly multidisciplinary; institutional; English-language based; use open-source software, and have an inadequate collection.

### **3. RESEARCH DESIGN**

#### **3.1 Objectives**

The present study makes an attempt to access the status of repositories containing books present in OpenDOAR. The specific objectives are:

- 1) To analyze the geographical wise (Continent wise and Country wise) distribution of e-book repositories.
- 2) To identify the software brands of the e-book repositories.
- 3) To identify various types of the e-book repositories.

- 4) To analyze the operational status of e-book repositories.
- 5) To analyze the linguistic information of the e-book repositories.
- 6) To analyze the growth rate of the e-book repositories.

### **3.2 Methodology**

In order to achieve the set objectives, the data comprising the repositories containing books were collected from OpenDOAR (<http://www.opendoar.org>) in the month of January 2018. The collected data were then tabulated for further analysis.

### **3.3 Scope and limitations**

The scope of the present study is restricted to the open access repositories containing books in the OpenDOAR. Since the source for data collection was OpenDOAR only, hence caution should be taken while generalizing the results.

## **4. DATA ANALYSIS**

### **4.1 Distribution of repositories by Continent**

The results show that Europe is emerging as the top most continent, contributing 55.2% of the repositories followed by Asia (16.3%), North America (13.5%) and South America (8.1%) respectively.

*Table 1: Repositories by Continent*

<b>No.</b>	<b>Regions</b>	<b>Repositories</b>	<b>Percentage</b>
1	Europe	734	55.2
2	Asia	217	16.3
3	North America	179	13.5
4	South America	108	8.1
5	Africa	41	3.1
6	Australasia	37	2.8
7	Caribbean	8	0.6
8	Others	5	0.4
	Total	1329	100

## 4.2 Distribution of Repositories by Country

The United States is leading in terms of the number of repositories containing e-books (10.2%) followed by Germany (8.3%) and the United Kingdom (6.2%) respectively (Table 2).

Table 2: Repositories by Country

No.	Countries	Repositories	Percentage
1	United States	124	10.2
2	Germany	101	8.3
3	United Kingdom	75	6.2
4	Poland	64	5.3
5	Spain	64	5.3
6	Italy	61	5
7	France	53	4.4
8	Japan	41	3.4
9	Brazil	36	3
10	Turkey	36	3
11	Australia	32	2.6
12	Others	642	48.31
	Total	1329	100

## 4.3 Distribution of Repositories by Software used

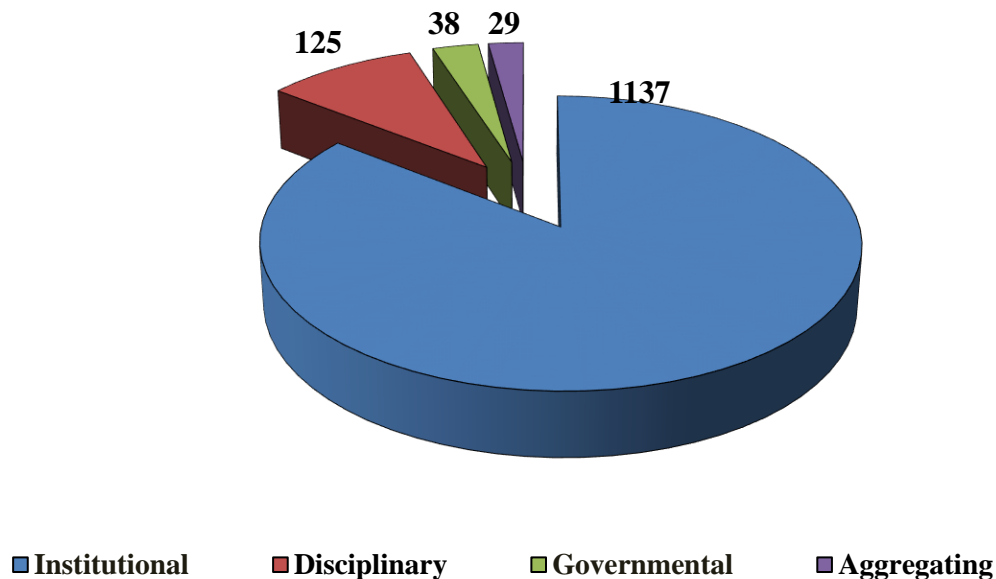
The software administrators have used the different types of software for creating and managing repositories. While analyzing the software used in the repositories containing books in OpenDOAR, the data depicts that a larger percentage of repositories use DSpace software (42.1%) followed by Eprints (15.2%), dLibra (3.8%). Opus, Digital Commons, and HAL also contribute a small percentage of 3.3%, 3.2%, and 2.9% respectively. A small percentage (7.1%) of the repositories doesn't mention the type of software used by them (Table 3).

*Table 3: Repositories by Software*

No.	Software	Repositories	Percentage
1	DSpace	559	42.1
2	Eprints	202	15.2
3	Unknown	95	7.1
4	dLibra	51	3.8
5	OPUS	44	3.3
6	Digital Commons	43	3.2
7	HAL	39	2.9
8	Others	296	22.3
	Total	1329	100

#### 4.4 Distribution of Repositories based on the type

The OpenDOAR contains repositories based on four categories. The majority of the repositories are Institutional (85.6%) followed by Disciplinary (9.4%), Governmental (2.9%) and Aggregating (2.2%) respectively (Fig. 1).



*Figure 1: Open Access Repository Types*



## 6.5 Operational Status of Repositories

While it has been seen that the major disadvantage of online resources is that they are no longer available over the internet with the passage of time, the data collected regarding the operational status of repositories containing books suggest that almost all the repositories are fully operational at present constituting 96.2% (1278) of the total repositories, while as a small percentage of repositories are available on trial basis (1.9%, 25). Broken links constitute 1.4% (18) of the repositories, suggesting that these repositories are technically malfunctioning whereas 0.6% (8) of the repository links is closed (Table 4).

*Table 4: Repository Operational Status*

<b>No.</b>	<b>Status</b>	<b>Repositories</b>	<b>Percentage</b>
1	Operational	1278	96.2
2	Trial	25	1.9
3	Broken	18	1.4
4	Closed	8	0.6
	Total	1329	100

## 4.6 Distribution of Repositories based on Language

Upon analyzing the linguistic information of the repositories containing books, it has been seen that the OpenDOAR constitutes the repositories in diverse languages. However English has been the dominant language constituting 924 repositories. The repositories in the Spanish language are 176 in number followed by German with 150 repositories. The repositories have also been added in multiple languages as well (Table 5).

*Table 5: Repositories by type of Language*

<b>Rank</b>	<b>Language</b>	<b>Repositories</b>	<b>Percentage</b>
1	English	924	69.53
2	Spanish	176	13.24
3	German	150	11.29

4	French	104	7.83
5	Portuguese & Italian	76	5.71
6	Polish	73	5.49
7	Japanese	45	3.39
8	Chinese	38	2.86
9	Turkish & Russian	36	2.71
10	Norwegian	31	2.33
11	Arabic	24	1.80
12	Ukrainian	22	1.66
13	Greek	19	1.43
14	Dutch & Swedish	17	1.28
15	Indonesian	16	1.20
16	Hungarian	13	0.97
17	Latin	11	0.83
18	Croatian	10	0.75

#### **4.7 Growth of E-Book Repositories**

From the table given below, it is evident that the growth in open access repositories is taking place very fast. In December 2005, there were only 51 repositories but the number has increased very drastically to 1329 in December 2017. The growth rate of repositories varies from 104% to 127% but during the December 2006, the growth has gone extraordinarily higher to 616%. The table below shows a positive trend towards the growth of repositories in OpenDOAR that contain books (Fig. 2).

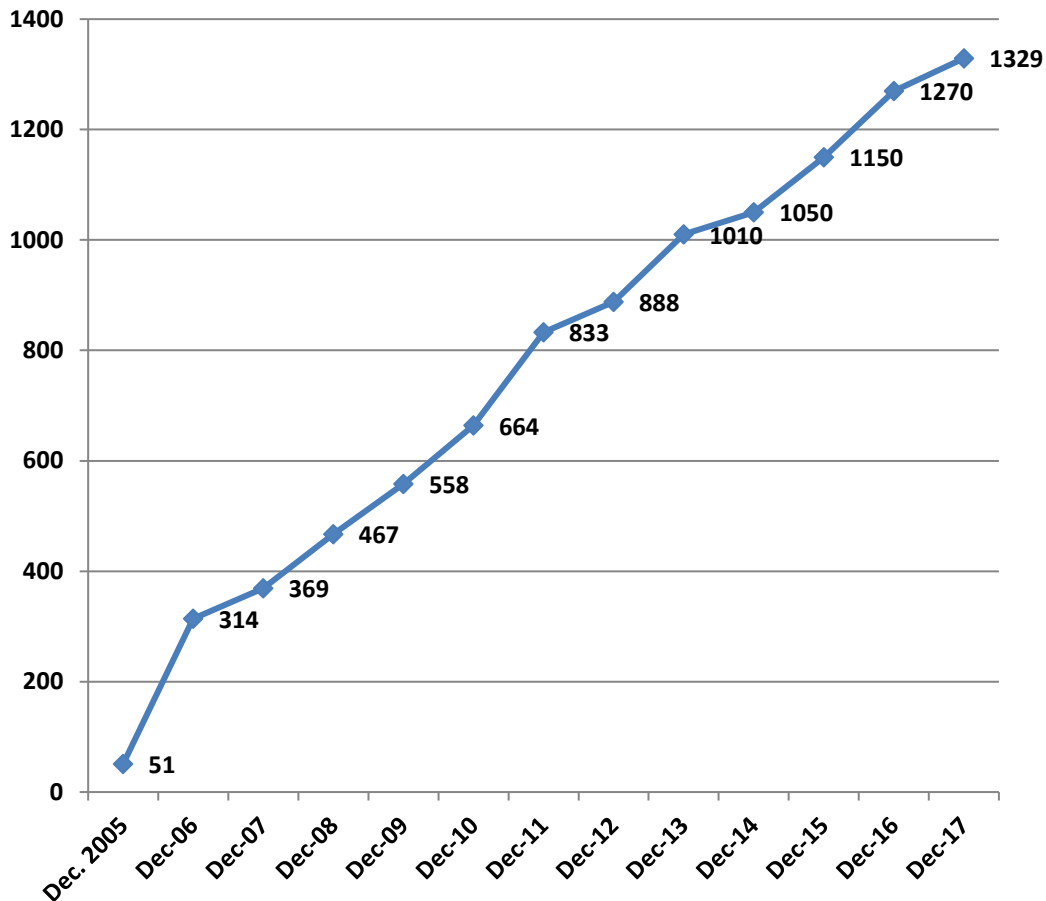


Figure 2: Growth of Repositories

## CONCLUSION

Open access movement has gained popularity all over the world and has become the talk of the modern scholarly communication particularly since the Budapest Open Access Initiative that has taken Open access to new heights. There is a growing trend in open access to scholarly material, be it Journals or Books. Also, there is an increasing trend in the development of open access repositories that have paved a new way for accessing the information whenever and wherever needed without any restriction. This study attempted to analyze various aspects of open access repositories particularly containing books in OpenDOAR. OpenDOAR has made a great contribution towards the open access movement. A total of 1329 repositories were found to be containing books on various subject categories, most of them being multidisciplinary. Some of the areas are lacking behind, particularly engineering fields, where the

percentage of repositories has been found to be very less. There is a need to give special attention towards all those subject fields so that these may not lag behind in sharing their information on open access platform. Further, the repositories are seen to be contributing in various languages, but there is a scope to include the repositories in local languages like Hindi as well. The developed countries like the USA are continuously contributing to their literature in open access form and the same needs to be done by the developing countries also. India's contribution towards open access repositories is negligible. Efforts should be done by educational institutions like universities, especially research centers to encourage their scholarly community to contribute more and more towards open access publishing. Librarians in particular need to conduct awareness programs and workshops so that open access initiative becomes a huge success.

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