

Development of Disciplinary Repositories: A Case Study of Open DOAR

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Organizations across the world are ensuring their visibility online. They are making their intellectual contents available for all in the form of repositories. Creation of disciplinary repository is an essential effort in this direction. The study takes the glimpses from open-DOAR by making it main source from data collection to highlight the present scenario of these repositories. There are 145 English language Disciplinary repository developed so far in the World. Continent wise analysis shows up that 53% of these are hosted by North America and least hosted by Africa (1%). Country wise analysis highlights that US constituted 48% with 18% contribution from UK side. India has also experimented in the field with 3% repositories. Highest present of repositories 20% is devoted to the field of History and Archeology followed by Geography and regional studies (16%), Computes and IT (12%) Law and Political Science and multidisciplinary (11%) each. Figures indicate that journal articles occupy largest space in the repository and least space is occupied by patents.

Keywords: Open Access, Repositories, Green Path

1. Introduction

Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions (Suber, 2007). OA removes price barriers (subscriptions, licensing fees, pay-per-view fees) and permission barriers (most copyright and licensing restrictions). There are two primary vehicles for delivering OA to research articles, OA journals and OA archives or repositories. A repository is a networked system that provides services pertaining to a collection of digital objects (Kahn, 1995). The repository landscape is a complicated one in which there are different types of repositories, serving overlapping communities and providing overlapping services. Example repositories include: institutional repositories, publisher's repositories, dataset repositories, learning object repositories, cultural heritage repositories, Institutional Repositories, Government Repositories and Disciplinary Repositories etc. (Mellon, 2006) Disciplinary repository is a collection of research outputs with a common link to a particular subject discipline. These are likely to cover one broad-based discipline, with contributors from many different institutions supported by a variety of funders; the repositories themselves are likely to be funded from one or more sources within the subject community. Although for some Disciplinary repositories the funding may be fragile, if they are of enough importance to the community then funding crises are usually weathered. Deposit of content is voluntary. These repositories are usually concerned with dis-

semination. There are some easily identifiable primary ends provided by repositories, regardless of the type, but not all of them adopt all of the ends: to motion of open access to full text research outputs, Dissemination and promotion of research, Long-term preservation of intellectual content, Maintenance of a research record for purposes of administrative assessment and evaluation. (Jones, 2008)

2. Open DOAR

The OpenDOAR service provides a quality-assured listing of open access repositories around the world. OpenDOAR staff harvest and assign metadata to allow categorization and analysis to assist the wider use and exploitation of repositories. Each of the repositories has been visited by OpenDOAR staff to ensure a high degree of quality and consistency in the information provided. OpenDOAR is maintained by SHERPA. Users of the service are able to analyze repositories by location, type, the material they hold and other measures. openDOAR is a cumulative list beyond the basic listings which exist on web. OpenDOAR is being developed and maintained by the University of Nottingham as part of a portfolio of work in Open Access and repositories under the SHERPA umbrella. (University of Nottingham, 2008)

3. Literature Review

Melero, López., & prats (2008) analyzed the Registry of Open Access Repositories (ROAR) and the Directory of Open Access Repositories (OpenDOAR) and they observed that in their records 32 and 22 open access repositories from Spain are listed. Thus their findings report that the open access movement is an emerging issue in Spain. Based on OpenDOAR records, Dspace and ePrints are the software used most to implement repositories. Most Spanish repositories (78 %) are institutional, mainly created by universities. The commonest types of repositories are those archiving conference and workshop papers, theses and dissertations, and research papers (pre and post prints). An exploratory overview of the situation in Mexico, one of the leading countries in terms of scientific output in Latin America was undertaken by Galina and Gimenez (2008). They focused on OA journals and repositories already in place and in development and identified 72 Mexican OA journals using DOAJ. Of these journals 45 are from REDALyC which they identified as a key project in OA journal development in Mexico. Using OpenDOAR and ROAR, ten Mexican repositories were identified. Paper by Proudman (2008) seeks to highlight some of the results of a research project entitled 'Stimulating the Population of Repositories commissioned by DRIVER and SURF'. The author highlights a small selection of critical success factors for successfully populating a repository or IR-based service. Desk research was carried out using the directories OpenDOAR and ROAR to analyze the size of repositories in terms of metadata and full text numbers. Growth patterns and rates were also observed. As a result, a preliminary short-list of European repositories and services was created. Initial telephone interviews were then carried out with those on the preliminary short-list to verify the ROAR and OpenDOAR data. Further questions were posed on growth and take-up by the

research community. For Thomas & McDonald (2007) OpenDOAR registry of open repositories provided a starting list of candidate sites for evaluation. OpenDOAR listed 838 registered sites on the date the starting list was compiled. The article summarizes findings from a study of author/depositor distribution patterns within scholarly digital repositories. Further author/depositor distribution is analyzed. This statistical technique was used to evaluate participation patterns among more than 30,000 author/depositors whose works were found in various categories of digital repositories. Findings from this analysis, including comparisons of participation patterns across three categories of scholarly repositories, are presented along with an explanation of the questions and challenges that arose during the study. The article concludes with an evaluation of the analytical technique and its potential as one metric for judging a repository's success. Melero (2008) has found that the open access movement, which is spread all over the world, is still emerging in Spain, but it has advanced in the past three or four years with more frequent initiatives related to repositories and open/free journals. The author has come to the above finding by verifying the fact from various repositories and directories like 227 registered signatories of the Berlin Declaration include 21 Spanish institutions. The Registry of Open Access Repositories (ROAR) and the Directory of Open Access Repositories (OpenDOAR) have in their records 26 and 12 open access repositories from Spain, respectively, which represent still less than 2 % of the whole repositories in those directories. Among them 67 % are institutional, 25% aggregating and 8 % disciplinary repositories. The most frequent types of repositories are those archiving conference and workshop papers, thesis and dissertations, and research papers (pre and post prints). The creation of Digital Institutional Repositories for knowledge sharing and management in Academic Institutions in a developing country like India is a growing requirement. The paper by Gayatri and Smitha (2007) briefly describes a study conducted to determine the need of an Institutional Repository and implementation using Open Source Digital Repository software, DSpace at a Management Institution in India to enable knowledge sharing. The creation of a Digital Repositories for knowledge sharing in academic institutions in a developing country like India is a growing requirement. The Directory of Open Access Repositories (OpenDOAR) lists 16 Digital Institutional Repositories in India like Indian Institute of Science, National Institute of Technology, Rourkela. 10 of these repositories use DSpace software.

4. Objectives

- To identify the presence of disciplinary repositories by continent.
- To understand the proportion of disciplinary Repositories by Country.
- To estimate the distribution of subjects in disciplinary Repositories.
- To underpin the content type included by repositories.
- To identify the country wise Organizational Proportion hosting Disciplinary Repository.
- To identify the continent wise Organizational Proportion hosting Disciplinary Repository.

5. Scope

With the increased population of repositories, there are diverse lists of repositories available on the web. The present study is confined to identification of repositories listed in openDOAR with scope confined to study of disciplinary repositories and further restricted to English language. The study has analyzed various facets of disciplinary repositories like subject coverage, content types, continent wise and country wise distribution of repositories. Proportion of organizations hosting the repositories by country and by continent.

6. Methodology

The study was carried out in following steps:

- Step 1. OpenDOAR database was selected as the main source for data Collection.
- Step 2. The Search was confined to disciplinary repositories by choosing parameters like Country, organization, most frequent content type and subjects contained by repositories.
- Step3. The data was analyzed and conclusions were drawn and presented in the form of tables & charts.

Findings

Table .1 shows the number of repositories in each Continent. It is evident from the table that North America hosts highest percentage of repositories (53) and least hosted by Africa (1%). Australia and South America hosts same number while as Asia accounts to 3% English language Disciplinary Repository coverage.

Table 1. Proportion of Repositories by Continent - Worldwide, English language, Disciplinary Repositories n*=145

Name of Continent	No of Disciplinary Repositories
North America	77(53)
Europe	57(39)
Asia	4(3)
Australia	3(2)
South America	3(2)
Africa	1(1)
Total	145(100)

*n represents total number of repositories

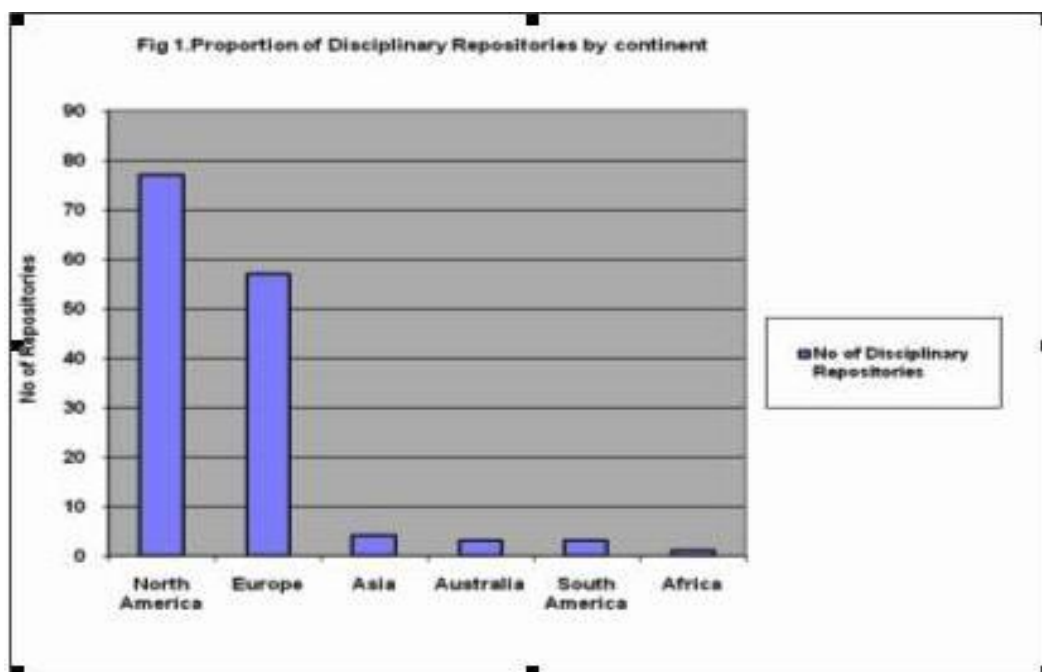


Figure in parenthesis indicates percentage
(Data collected November 15th, 2008, source opendoar)

Country wise distribution of disciplinary repositories show up that US is leading with 48% disciplinary repository building followed by UK with 18% repositories while as Italy, Brazil and India contributes 2% each in disciplinary repository building.

Table 2. Proportion of English language Disciplinary Repositories by Country n*=145

Name of the country	No of Repositories
United Nations	70(48)
United Kingdoms	26(18)
Germany	10(7)
Canada	7(5)
Italy	6(4)
Brazil	3(2)
Denmark	3(2)
India	3(2)
Others(13)	17(12)

*n represents total number of repositories

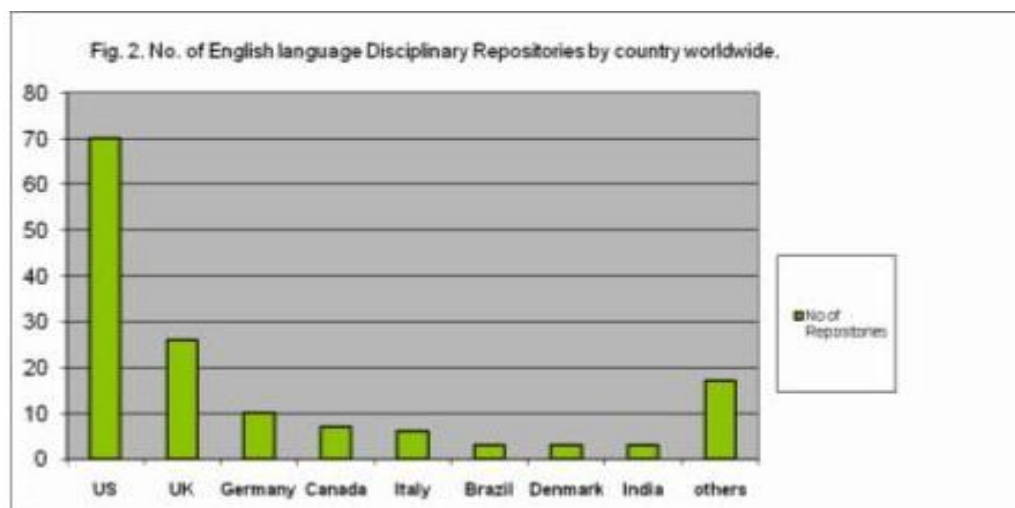


Figure in parenthesis indicates percentage

Figures in Table.3 indicate that most of the disciplinary repositories are devoted to the field of History and Archeology (20%), Geography & Regional Studies (16%), Computer and IT (12%) Law and Politics and Multidisciplinary with 11% each. Repositories devoted to other disciplines range between 1-8.

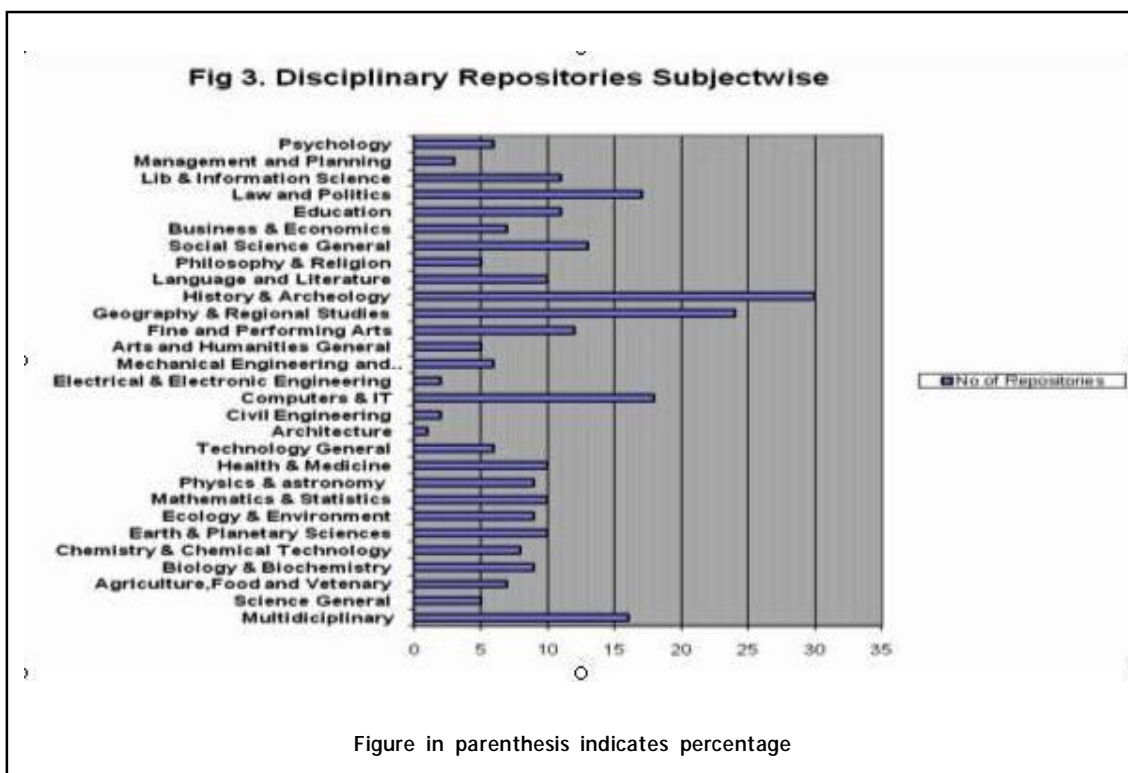
Table 3. Disciplinary Repositories Subject wise

Subjects	No of Repositoriesn=145
Multidisciplinary	16(11)
Science General	5(3)
Agriculture, Food and Veterinary	7(4)
Biology & Biochemistry	9(6)
Chemistry & Chemical Technology	8(5)
Earth & Planetary Sciences	10(6)
Ecology & Environment	9(6)
Mathematics and Statistics	10(6)
Physics & astronomy	9(6)
Health & Medicine	10(6)
Technology General	6(4)
Architecture	1(0.6)
Civil Engineering	2(1)
Computers & IT	18(12)

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Electrical & Electronic Engineering	2(1)
Mechanical Engineering	6(4)
Arts and Humanities General	5(3)
Fine and Performing Arts	12(8)
Geography & Regional Studies	24(16)
History & Archeology	30(20)
Language and Literature	10(6)
Philosophy & Religion	5(3)
Social Science General	13(8)
Business & Economics	7(4)
Education	11(7)
Law and Politics	17(11)
Lib & Information Science	11(7)
Management and Planning	3(2)
Psychology	6(4)

*n represents total number of repositories



50% space of disciplinary repositories worldwide are occupied by Journal Articles. Table. 4 depicts that unpublished reports and Working Papers occupy 41% while as Conference and Workshop Papers and Books, Chapters and Sections constitutes 37% each of available content type in disciplinary repositories. From fig.4 it is evident that Trend line decreases subsequently from journals to patents.

Table 4. Content Types in Disciplinary Repositories World Wide

Content Type	No of Repositories* = 145
Journal Articles	73(50)
Unpublished reports and Working Papers	60(41)
Conference and Workshop Papers	55(37)
Books, Chapters and Sections	54(37)
Multimedia and Audio Visual Materials	50(34)
Other Special Item Types	44(30)
Learning Objects	24(16)
Theses and Dissertations	24(16)
Bibliographic References	19(13)
Datasets	14(9)
Softwares	5(3)
Patents	2(1)

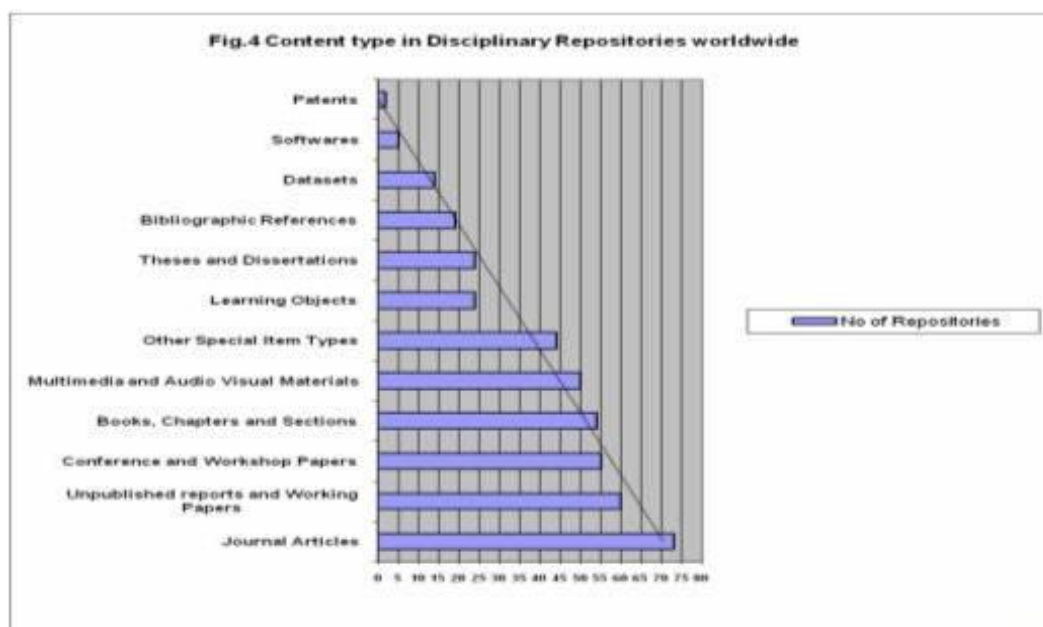


Table .5 is the number of organizations that host repositories in each Continent. North America is leading with 48% of repositories followed by Europe (43%) with only 3% contribution from Asian side.

Table. 5. Proportion of Organizations hosting the Disciplinary Repository by Continent

Continent	Organizational Proportion hosting Disciplinary Repository n = 124
North America	60(48)
Europe	53(43)
Asia	4(3)
Australia	3(2)
South America	3(2)
Africa	1(1)

*n represents total number of repositories



Figure in parenthesis indicates percentage

Table 6 is an overview of proportion of organizations hosting Disciplinary Repositories by country. Here it is evident that US leads with 44% repositories followed by UK. India contributes only 2% of world contribution in the creation of Disciplinary Repositories.

Table 6. Proportion of Organizations hosting the Disciplinary Repository by Country

Country	Organizational Proportion hosting Disciplinary Repository n=124
United States	54(44)
United Kingdom	23(19)
Germany	9(7)
Canada	6(5)
Italy	6(5)
Brazil	3(2)
Denmark	3(2)
India	3(2)
Others	17(14)

*n represents total number of repositories

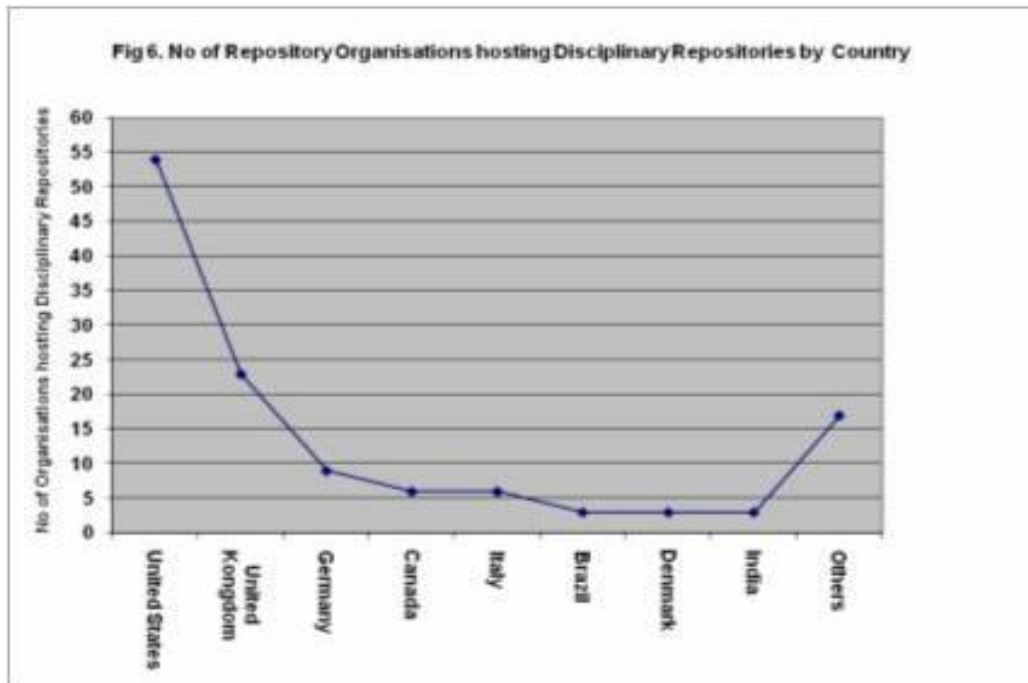


Figure in parenthesis indicates percentage

7. Conclusion

- US is leading in the arena with 53% contribution.
- Asia lacks far behind with only 3% contribution in the field.
- India has come up with only three repositories so far with none from J & K state there is need for creation and contribution of intellectuals in the repository formation.
- Most of the Disciplinary repositories are created in the fields like History and Archeology, Geography and Regional studies with least emphasis on rapidly growing field of Science and technology.

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