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Open access repositories in Indian languages: Status

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Abstract
Open Access repositories are the most precious treasure for readers, researchers, teachers and the taught keeping in view the sky rocketing cost of readable material. It extends maximum support in innovation and progress of any nation as it disseminates knowledge and information through free access. The present study has been undertaken to find out the present status of open access repositories functional in India, types of repositories, subjects covered by repositories, different Indian recognised languages playing part in such repositories, the position of Indian recognised languages finding place in world class repositories with international fame Directory of Open Access Repository. Software technique is of vital importance in creation and maintenance of such Repositories, so which software is preferred for building such repositories. It has become extremely indispensable for modern institutions to maintain repositories, so this study can be beneficial for them as it reduces cost of their libraries, space problems and other precious documents.

Keywords: open DOAR (directory of open access repositories), open repositories, Indic languages repository, free access repository

Introduction

Repository is actually a store house of various research papers, articles and material created by the institution itself and retained digitally for the use of general public and researchers. Such Repositories allow free and open access to readers, researchers and general public to use it for any research, knowledge, information or entertainment purpose.

Indians account for almost 20% of the total global population, but inhabitants lag behind in the use of internet. Surprisingly, it is only 4.7% of global internet users. Further, lion's share of this small ratio uses it for entertainment only and not for research or innovation purposes. One major factor for non-use of internet may be due to working fluency in English language. In the near future with the use of Indian languages other than English on internet will increase the representation of Indians. However, government is devoting best efforts to bring Indians on digital platform. Obviously with the promotion of digital platform, there will be considerable demand for Open Access Repositories.

There are 22 recognised official Indian languages as on 8th June, 2017. Unfortunately, the number of OA Repositories is very small in Indic languages. It is just 29 only as detailed below:

Bengali	3 (1 Indian, Bengali & English, Operational 2 Bangladeshi)
Gujarati	3 (Indian)
Hindi	11 (10 Indian 1 United State)
Kannada	2 (Indian)
Malayalam	2 (Indian)
Marathi	1 (Indian)
Nepali	1 (Nepal)
Sanskrit	1 (Indian)
Tamil	3 (1 Indian 2 Sri Lanka)
Urdu	2 (1 United State 1 Pakistan)

But there are only 21 repositories operational in India shown by the Open DOAR. The factual position of operated repositories in India is 15 only because all the repositories are operational in multi-languages.

The advancement of computer & Internet increase volumes of journals and facilitates users with research findings. But rise in subscription rate of journals, the growth of library has been hampered. Chan (2004) [1] described the scholarly serial subscriptions costs, particularly for science and medical journals have been increasing rapidly over the last two decades. At the same time, research library budget has been decreasing.

"OA repositories are freely accessible online digital archives of research outputs that have been deposited by the authors. This is also known as self-archiving. Institutional repositories archive research publications are for example a specific University or organisation whereas subject-based repositories collate publications for a given discipline" described by University of BRADFORD, West Yorkshire (UK) [2].

Some research libraries see IRs as a means to expand on the amount and diversity of scholarly information that is collected and preserved, thus enhancing teaching, learning and research at the host institution and beyond (McCord, 2003) [3].

In literature of open access repositories we find articles, research papers, thesis and dissertations for benefitting researchers, students and the teaching community. At present no doubt the pace of digitisation is not as per expectation in India compared to developed countries, yet to some extent it is helpful. Users can read the coveted material, download or upload, search or can log in to the full text articles but with lawful purpose. Readers can access these data free of cost, copyright hassle free subject to certain minor conditions.

As all are aware that an institutional repository is on-line platform created for storing and preserving readable material

in digital form, which is generally intellectual output created by Institution itself.

Open Access Repositories can also preserve pre-published as well as peer reviewed published papers, thesis and dissertations which the researchers or institution is willing to disseminate for wide impact or publicity without financial or other access barriers.

Review of Literature

While conducting Review of the literature available concerning open access repositories in Indian recognised official languages, newsprints, and print media as well as electronic media was consulted apart from going through peer reviewed literature of experts and specialists of this field. One has to undergo such tedious job just to explore deeply in the subject.

Krishnamurthy & Kemparaju (2011) [4] The 20 repositories studied covered collections of diverse types. These collections have unique content. Originality/value. Author study the IR software and data based on the content type, metadata and characteristics.

Tonta (2008) [5] this paper defines the concepts of OA and IR briefly reviews the current situation of IRs in Europe. It then chronicles the development of IRs in Turkey. Turkish Grand National Assembly would make the publications coming out of research projects supported by public funds open access through institutional archives.

Roy & Others (2013) [6] study reveals that several key issues such as contents quality, metadata standards, preservation technique, workflow pattern, customization and technical specifications of software, copyrights policy, OAI-PHM compatibility etc. that need to be properly considered before developing repository for any organization.

Gul and shah (2012) [7] study explore and evaluate the Indian open access repositories which had been set up, taking data from Open DOAR. A closer study of these demonstrated a huge variety in sizes, organizational models, functions and topics. The study asserted that the steady development of repositories in India.

Bjork (2014) [8] described on open access subject repositories registered in DOAR and ROAR. IRs had an impact on subject-based repositories.

Pinfield *et al* (2014) [9] reveals the worldwide growth of open access repositories for the period 2005 to 2012 using Open DOAR as a data collection tool. Multidisciplinary and English language repositories dominate disciplinary and subject based repositories. It shows that initial repository development was focused on North America, Western Europe and Australasia, particularly the USA, UK, Germany and Australia.

Wilson and Jantz (2011) [10] institutional repository deposits among the American Research Libraries (ARL) shows great variation in English and Linguistics.

Research Objective

1. To find out how many repositories in the recognized official Indian languages, registered with open DOAR.
2. To determine repositories operational in India in recognised official Indian languages, registered with open DOAR.
3. To identify the subjects archived by Open Access Repositories in Indian Languages and Operational in India.
4. To know the highest number of items in Indian Open Access Repositories operational in India in Indian Language registered with open DOAR.
5. To determine various software used for creation of Indian Open Access Repositories in Indian Languages operational in India.
6. To identify types of repositories in Indian language operational in India.
7. To identify the core content type repositories registered with open DOAR in Indian Languages.

Methodology

The methodology adopted to confirm status of the Open Access Repositories in Indian officially recognised languages the data for 22 Indian official languages was consulted. Major data was collected from Open DOAR (Directory of Open Access Repositories) as on September 2017 out of 29 repositories identified in Open DOAR, a total of 15 were found covering Indian official languages operated in India. These 15 OARs have been studied in accordance with the objectives as listed by SHERPA services based at the Centre for Research Communication at the University of Nottingham, United Kingdom.

It is worth mentioning herein that Open DOAR staff allows categorization and analysis of its data and material for onward exploitation of this resource in public welfare. Accordingly, the undersigned chose 'OA Repositories in Indian languages' and analysed it. As on the aforesaid date, there were 79 OA Repositories in Indian languages were found which I extracted for onward analysis thereof using a Microsoft-Excel spreadsheet.

The population of this study is confined to the printed material, various national and international fame newspapers, magazines, exchange of views and information with learned experts, exploration of relevant material on Internet.

Findings & Discussion

I had to undergo three phases to reach conclusion. In the first instances I explored the internet Google Search Engine to gain access to Open Access Repositories of Indian recognised official languages and invariably Open DOAR was the major one. After gathering whole data I processed and analysed it in second phase. In the third phase, whole the data was categorised in different tabular form indicating different heads such as languages, number of repositories in the world, OA repositories of Indian languages operational in India, and the software used etc. etc. to reach out impeccable conclusion.

1. To find out how many repositories in the recognized official Indian languages, registered with open DOAR.

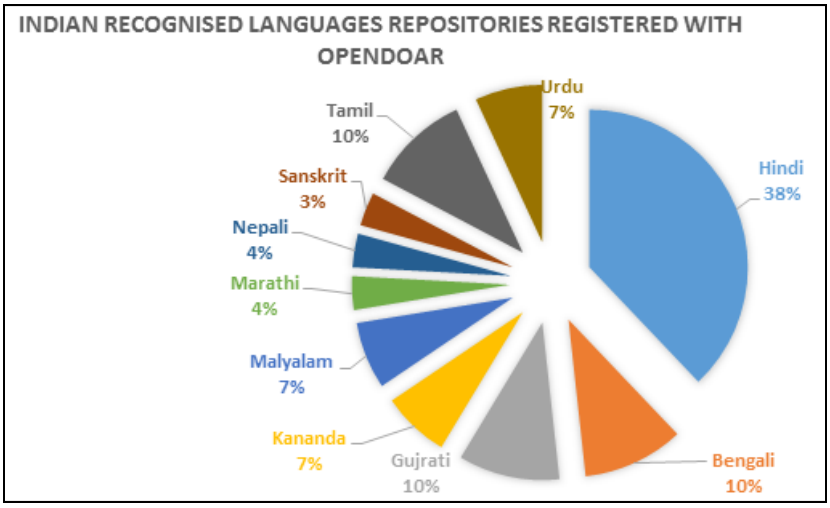

Fig 1

The present OA repositories operational in officially recognized Indic languages registered with international open DOAR are really too less, but still there is commendable job in Hindi language accounting for 38% (11) whereas in Sanskrit language it is only ONE single OA repository standing at the lowest. Regrettable for a language known to be the mother of almost all languages and furthermore, some opponents call it a dead language. Gujarati, Bengali and Tamil languages maintain 10% (3) repositories each followed by Kannada, Malayalam and Urdu having a share of 7% (2) each and then there are Nepali & Marathi languages to the tune of 4% (1) each.

Findings: These all above said repositories are in multi languages and not in one single language except Marathi repository.

2. To determine repositories operational in India in recognised official Indian languages, registered with open DOAR.

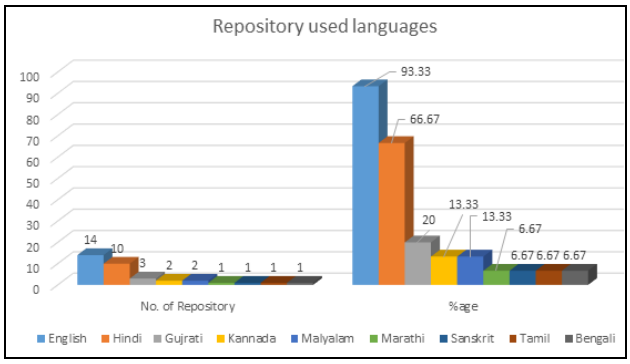

Fig 2

Most repositories with the less-frequent languages are multi-lingual.

There are actually 15 OA repositories operational in India wherein multi-lingual treasure retained apart from a single specific language. As such it computes to 35 such OA repositories.

Only one repositories is Vidya Prasarak Mandal – Pune is in Indian language i.e. Marathi. English is the top most language having maximum number of repositories (14) whereas the last place is for Marathi, Tamil, Bengali and Sanskrit having one each. Hindi scores second place with 10 repositories followed by Gujarati and Kannada two each.

Finding: Only one repository in Indian language Marathi was found operational in India. There is no such OAR in India which can be termed for any specific Indian language. All OARs have other languages in it.

3. To identify the subjects archived by Open Access Repositories in Indian Languages Operational in India.

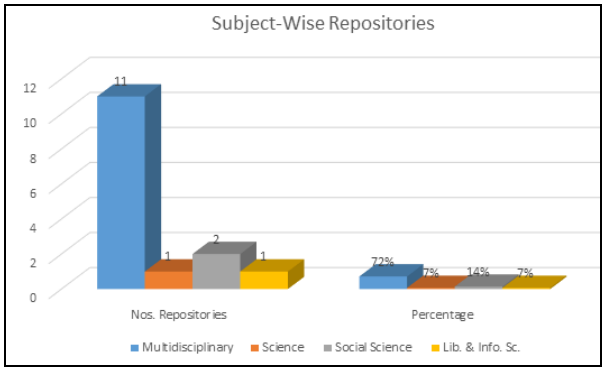

Fig 3

OA repositories operational in India are Multi-disciplinary subjects accounting for the top position with 72% (11 numbers) whereas the Science as well as Library and Information Science subjects are at the lowest 7% (1) each. There are 2 Social Science discipline repositories operational in India.

Finding: It concludes that most OARs are multi-disciplinary.

4. To know the highest number of items in Indian Open Access Repositories operational in India in Indian Language registered with open DOAR.

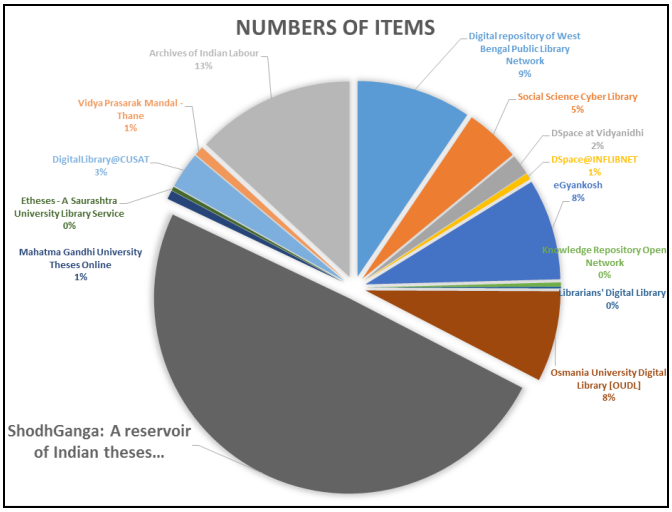

Fig 4

The above figure shows the Repositories operated in Indian Recognized languages in India at 100%. The total number of items covered in such OA repositories registered with Open DOAR are 326007. Major portion pertains to 'Shodhganga' which accounts for 49% whereas the E-thesis of Saurashtra University Library Science, Librarian Digital Library and Knowledge Repository Open Network had made Zero contribution. Archives of Indian Labour covered 13% followed by Digital Library of West Bengal 9%, Osmania University Digital Library, e-Gyankosh 8% each, Social Science Library 5%, Digital Library @CUSAT 3%, DSpace at Vidyanidhi 2%, and Mahatma Gandhi University, Thane, Dspace @INFLIBNET and Vidya Prasark Net 1% each.
Finding: Shodhganga is the top most OA repository which contributes items about half of all repositories.

5. To determine various software used for creation of Open Access Repositories in Indian Languages operational in India.

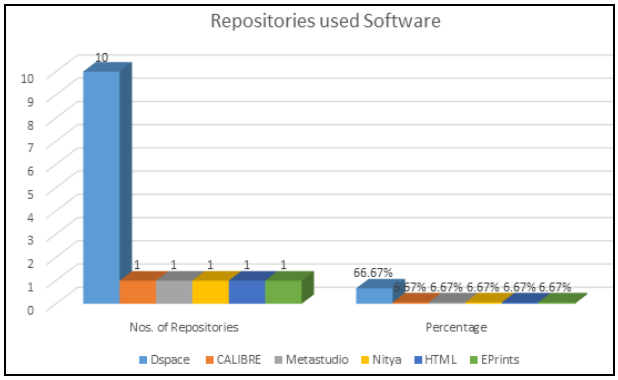

Fig 5

The above table demonstrates that Dspace is the top most software being used in 66.67% (10 numbers) of the repositories whereas CALIBRE, Metastudio, Nitya, HTML and EPrints account for 6.7% each.
Finding: Maximum Indian OARs prefer Dspace software being a modern, economical and innovative.

6. To identify types of repositories in Indian language operational in India.

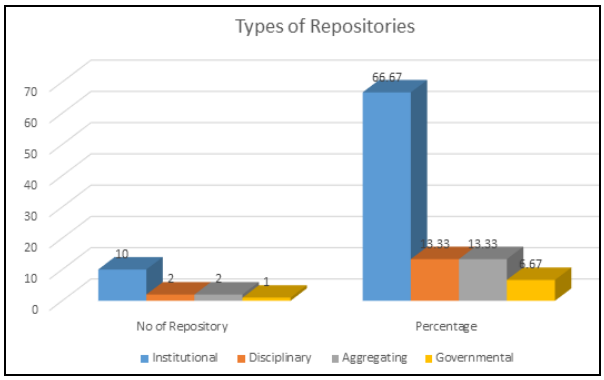

Fig 6

We observe from above figure that 66.67% (or say 10 numbers) of the Repositories are Institutional whereas 13.33% (2 numbers) each are Disciplinary and one is a Governmental Repository.
Finding: Government contribution is too less and needs to ameliorate in creating new OARs. Contribution of Institutions is appreciable.

7. To identify the core content type repositories registered with open DOAR in Indian Languages.

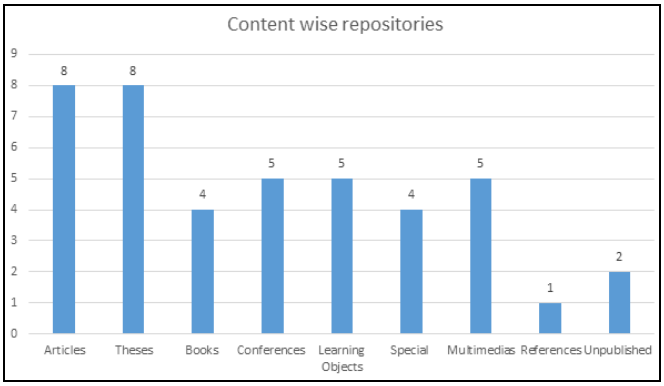

Fig 7

Multi sources is used in one repositories so multi-content is used in these repositories. As evident and natural that Articles and Thesis are the main store house accounting for 8 numbers each followed by the documents/papers of Conferences, Learning objects and Multimedia 5 each, housing Books and Special material are 4 each. There are two repositories for unpublished material and one for Reference.
Finding: Articles and Thesis are the major core contents maintained in OARs as expected and natural.

Conclusions

In developed countries particularly America and western countries have foreseen the urgency of Open Access Repositories and this is one of the main reasons that they had not maintained repositories of their languages alone but assimilated other world class languages or whatever helpful in

storing different cultures and their achievements. Out of the total 29 OA repositories belonging to Indian officially recognised languages 21 are prevalent in India whereas other countries have maintained 8 OARs of our local languages. Multidisciplinary OARs are more than the Social sciences and Library subjects. Dspace is the topmost software used for creation of OARs. Institutional OARs are more than the other OARs and regrettably there is only one government OAR. Articles and Thesis are the top core content type and one for Reference only.

There can be one reason that readers of concerned Indian language are inadequate. As per law of Demand and Supply, OA repositories are less in numbers. The other reason may be cost investment. The third reason can be the lack of enthusiasm on the part of Institutional management to venture out in a new field. Anyhow, these are the points which need further investigation, survey, study and research.

Earlier only English language was the choicest language for OA repositories but with the efflux of time regional languages started participation and in almost all countries which house OA repositories their lingua franca emerged as major participant. In India such trend is also visible. Hindi language can boast of double digit progress in OA repositories whereas Tamil, Kannada, Malayalam, Bengali, Urdu are other important repositories but Marathi language has its own self-repository.

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