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Global Visibility of Open Access Institutional Repositories of SAARC Countries: An Explorative Study

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Global Visibility of Open Access Institutional Repositories of SAARC Countries: An Explorative Study

Madan Singh[a] Ramesh Kuri[b] Gireesh Kumar T K[c] Kunwar Singh[d]

Abstract

The concept of open access extends perceived advantages to its stakeholders, especially in the preservation of scholarly publications through digital repositories. Open Access (OA) improves collaboration among the authors with the support of global networks. There has been remarkable progress worldwide in creating institutional repositories to provide open access to resources. Open access institutional repositories (OAIR) provide a stable platform to showcase an individual's intellectual works without a hitch. This study explores the visibility of open access institutional repositories of SAARC countries that are reflected in the Directory of Open Access Institutional Repository (DOAR). Collected data has been analyzed and represented in tabular and graphical formats to understand the variables' relationship. The authors also assessed the contribution of SAARC countries concerning repository type, disciplines, languages covered, and software used for building them. The study's finding revealed that out of 128 institutional repositories, the highest number of (14.06%) institutional repositories are registered in 2013 and 2019 and belong to the institutional category. DSpace is the software used for creating the majority of the repositories (60.94%), followed by E-Prints (25%). Three-fourths of the repositories are represented in the English language having its contents in journal articles. Among the SAARC countries, India contributes the highest number of institutional repositories (72.66%). The discipline-wise distribution of institutional repositories shows that the majority (18.40%) of the collection is represented under the category Science in general followed by multidisciplinary (15.74%) and technology in general 51 (12.35%) respectively as a concluding remark, authors elucidated the opportunities and threats associated with the development of OAIR to meet the educational requirements of the academic community.

Keywords: *Open Access, Institutional Repositories, SAARC Countries, DOAR, Dspace, OAIR, IR*

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1. Introduction

Improving institutional and individual profile among the public is very crucial in this competitive environment. Online presence and academic collaborations enhance the global visibility of scholarly publications at the individual and institutional levels. The philosophy behind ‘open’ is to share the resources for free, duplication prevention, and easy access to the stakeholders (Hylen, 2008). Further, it avoids restrictive policies like copyright and other legal matters, technical barriers associated with the access of resources. Open access facilitates unrestricted access to material along with the promotion of economic efficiencies. Open access commonly understood that sharing content, usually of scholarly nature, without a requirement for the use of an open license. With the advent of computer technology and the internet during the beginning of the 1980s, the concept of free movement emerged to facilitate access to different kinds of materials, information, and the technological codes for free. Open education movement, open-source movement, open learning, open access movement, and open data movement are the results of such open movements that emerged during the years to share the scholarly materials, software freely, and online access to scholarly communications access institutional repositories.

A repository is a place where something is stored in significant quantities. Repositories developed as part of a university or institution's knowledge management becomes the cause for an institutional repository. In such cases, they handle their institutional intellectual output. Institutional repositories are vital in building and maintaining the research output in the form of digital resources systematically and disseminating them to its members. According to Lynch (2003), an institutional repository is a “set of services that a university offers to its community members for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution."

In most cases, institutional repositories allow free access to most of their content. However, in some cases, it restricts complete access to the public. The contents in a repository range from journal publications, preprints, theses and dissertations, newsletters, reports, data, etc. It can be institutional or discipline-based. Some institutional repositories come under cross-institutional also. Academic participation and frequent updation are very significant for the sustainability of any repositories.

An open access repository is a collection of full-text documents available online in an online database that can be accessed for free and directly. IRs are maintained by research institutes to accommodate the work of their authors (Pinfield, 2005). Open DOAR (The Directory of Open Access Repositories) is a global Directory of Open Access Repositories developed and maintained by the University of Nottingham (UK) in association with the University of Lund (Sweden). It is a free access repositories directory project to promote open access repositories and was launched in 2005. Open DOAR facilitates searching, finding, and retrieving country-based lists of repositories, and it also acts as a tool for repository administrators to get the statistics. Being a quality-assured global directory, Open DOAR provides an opportunity for all the countries to get into the registry of their institutional repositories. Each of the repository records has been carefully reviewed by a panel of experts of its editorial team, hosts all the registered institutional repositories, and provides free, open access to the academic community.

The South Asian Association for Regional Cooperation (SAARC) was established on December 8, 1985, with the SAARC Treaty signing in Dhaka. SAARC is the result of the union of eight member countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The headquarters of the association was founded in Kathmandu on January 17, 1987. The association's aim is set out in the SAARC Statute and promote South Asia people's welfare and quality of life. The issues such as regional economic growth, social progress, and cultural development are addressed by the member countries, which gives the available opportunity to live in dignity and maximize their opportunities. SAARC also aims to promote and strengthen collective autonomy among South Asian countries and contribute to mutual trust, understanding, and recognizing common problems and encouraging active cooperation and mutual support in the economy, society, culture, technology, and science. Cooperation with other developing countries is also part of the SAARC objectives. It aims to strengthen the cooperation between the two parties in international forums on common issues and cooperate with international and regional organizations with similar goals and objectives (https://www.saarc-sec.org/index.php/about-saarc/about-saarc).

2. Literature Review

Several studies have been carried out on institutional repositories, growth trends, and libraries' roles in promoting these initiatives and their consequences in the open-access platform. The authors have assessed and reviewed a few selected studies to support the present study.

Bashir, Mir, and Sofi (2019) conducted a study on the Global Landscape of Open Access Repositories and found Europe as the leading contributor to the largest number of repositories (1558), followed by Asia (701) and North America (614). The study also found that the United States is the leading country with the largest number of repositories (500), followed by the United Kingdom (256), Japan (217), and Germany (202), respectively. Further, it is clear from the study that English (2400) is one of the most prominent language interfaces used by OA Repositories.

Ali, Lone, and Mushtaq (2018) found the composition of scientific repositories in the OpenDOAR repository (OpenDOAR). It turns out that Europe accounts for the majority of repositories in the regions, while the United States ranks first among the countries. Most academic repositories are institutions that receive English-language content, store journal articles, and manage content with DSpace.

Singh (2017) examined the open-access IRs developed in Australia by selecting the database of Directory of Open Access Repositories (DOAR) and observed that the majority 42(76.36%) of the IRs belong to Universities, followed by 13(23.64%) research institutions. The study revealed that the English language was the most preferred (i.e., 54(98.18%) language interface by Australian IRs. DSpace software was found to be the widely used software to create IRs among the Australian institutions.

Das & Singh (2017) conducted a case study focusing on assessing the status of Chinese Open Access Institutional Repositories and its contribution to a global knowledge base based on the four key indicators, i.e., the number of IRs, types, subjects and contents and software used. The study used the Open Directory of Open Access Repositories (Open DOAR) for data collection.

Singh & Verma (2017) studied the current status of open access institutional repositories of Asian countries under various parameters such as the number of records archived, subjects and core contents, language interface for sharing of information, various software used for the creation of open access IRs and their operational issues. Directory of Open Access Repository (Open DOAR) was explored for observing Global visibility of Asian Countries 'Open Access IRs. The study's findings indicated that out of 613 open access repositories, 317(51.71%) were created in East Asia alone. The study also revealed that China (41.31%) was a significant contributor to open access IRs among other Asian countries.

Lone and Sheikh (2016) evaluated open access (OA) repositories in the field of health and medicine (H&M). The study revealed that most of the influence on repositories is from the United States of America, followed by Japan and the United Kingdom. The majority of the repositories are institutional, mostly consisting of articles followed by theses, unpublished documents, and books. Besides, they also found that most OARs are still operational, and DSpace is the most popular software used by repositories, followed by Eprints and Digital Commons.

Singh (2016) studied the development of open access repositories in India. It shows that Europe has the most considerable contribution to the repositories, followed by North America. Also shows that Asia Japan has the largest number of repositories, followed by India, Taiwan, Turkey, China, The Republic of Korea, and Indonesia, and the minimum level of development represented by countries such as Afghanistan, Armenia, Azerbaijan, Bangladesh, Georgia, Hong Kong, Iraq, and so on.

Ganie, Jan, Lone, and Nisa (2014) defined the state of Open Access (OA) repositories in the field of Library and Information Science (LIS) worldwide. The study indicated the United States as the primary contributor, followed by the United Kingdom and Germany. In terms of software used by their respective repositories, DSpace and Eprints were most preferred. English was the highly preferred language, then German and Spanish.

Ali, Jan, and Amin (2013) examined the state of open access repositories worldwide. They point out that Europe is the main contributor, followed by North America, Asia, Latin America, and Australia. They also found that most repositories used DSpace software and followed by Eprints, Digital Commons, DLibra, and OPUS, respectively, but a small number of repositories used other programs.

Roy, Biswas, and Mukhopadhyay (2012) summarize the current status of OAR implementation in Asia. They stressed that all countries are now maintaining OARs, but most contributors are from Europe and North America. Asia is the third largest contributor in OARs.

Abiraz, Noorhidawati, and Kiran (2010) Investigates the current status of open access repositories in Asian universities. It was found from the study that Japan is one of the most significant contributors to Asian repositories, followed by India and Taiwan. The majority of deposited contents are journaled articles followed by theses and dissertations. It was also found that large institutions maintain multidisciplinary subjects in OpenDOAR. As for the IR collection language, it was found that English is the most preferred language, followed by Japanese and Chinese.

3. Objectives:

- To identify the year-wise distribution of Open Access Institutional Repositories among the SAARC countries;
- To assess the type, discipline wise collection and the language of SAARC countries;
- To identify the type of software used for the building of Institutional Repositories;
- To recommend SAARC countries to create more contributions to Institutional Repositories and to be a part of DOAR.

4. Methodology

The main objective of this study is to measure the contributions of SAARC countries to the Open Access Institutional Repositories. The authors have used the Directory of Open Access Repository website (available at https://v2.sherpa.ac.uk/opendoar) accessed on April 18, 2020. The required data were collected from the DOAR website and analyzed and interpreted with tables and charts with graphical representations under different sub-headings such as year-wise, type of repositories and software used language, and subject-wise repositories distribution and also country wise registration of institutional repositories.

5. Scope and Limitations of the study

This study focused on open access institutional repositories registered in the Directory of Open Access Repositories (DOAR). To know the research contributions of developing

countries, the authors have limited the study only to the institutional repositories registered by the South Asian Association for Regional Cooperation (SAARC) countries. Those institutional repositories available in OpenDOAR up to April 18, 2020, has been considered for the study and analyzed.

6. Result and Discussion

Based on the data collected, authors have performed the analysis under different segments with required tables, figures, and graphical representations, which are as follows.

6.1 Year-wise Growth Pattern

Authors have collected all the institutional repositories added by the SAARC countries' members to the DOAR and categorized them under the year they have been created, starting from 2005 to 2020. Figure 1 depicts the year-wise growth of institutional repositories in the DOAR repository with its cumulative percentage.

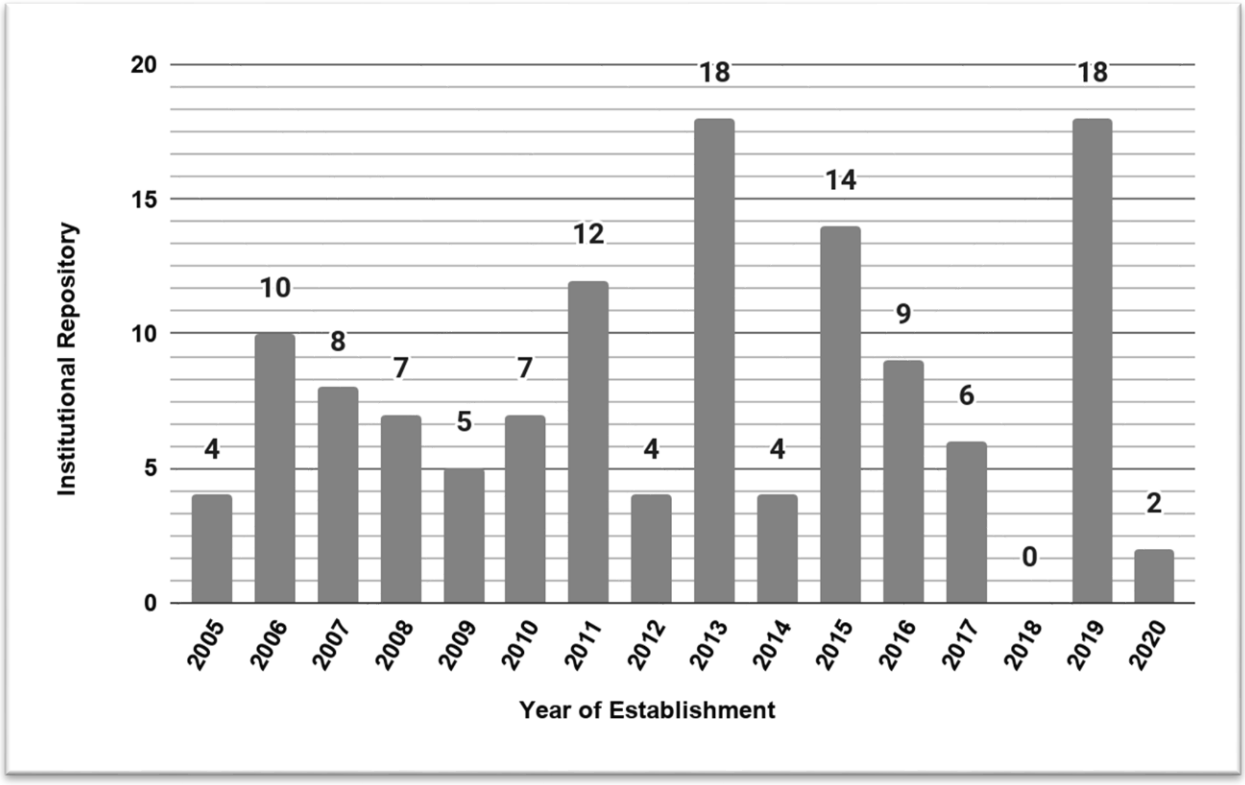

Fig.1: Year-wise Growth pattern of Institutional Repository

It has been observed from the data collected that there are 128 institutional repositories available in the OpenDOAR contributed by SAARC countries. The figure 1 indicates that out

of 128 repositories listed, the year 2013 and 2019 witnessed the highest number of repositories registration, i.e., 18 (14.06%), followed by 14 (10.94%), 12 (9.38%), and 10 (7.81%) in the years 2015, 2011 and 2006 respectively. Further, less than ten repositories were established and registered during different years, as indicated in the figure. The study also identified that none of the SAARC countries enrolled any repository in DOAR in the year 2018.

6.2 Nature of Institutional Repository

Institutional repositories are of different types. However, based on the nature of the Institute in which they have created, it can be categorized under four significant heads: Governmental, Aggregating, Disciplinary, and Institutional. The authors have collected the details about the type of institutional repositories added during the study period based on these categories. Its corresponding cumulative percentage is also recorded under each category. Detailed statistics are provided in figure 2.

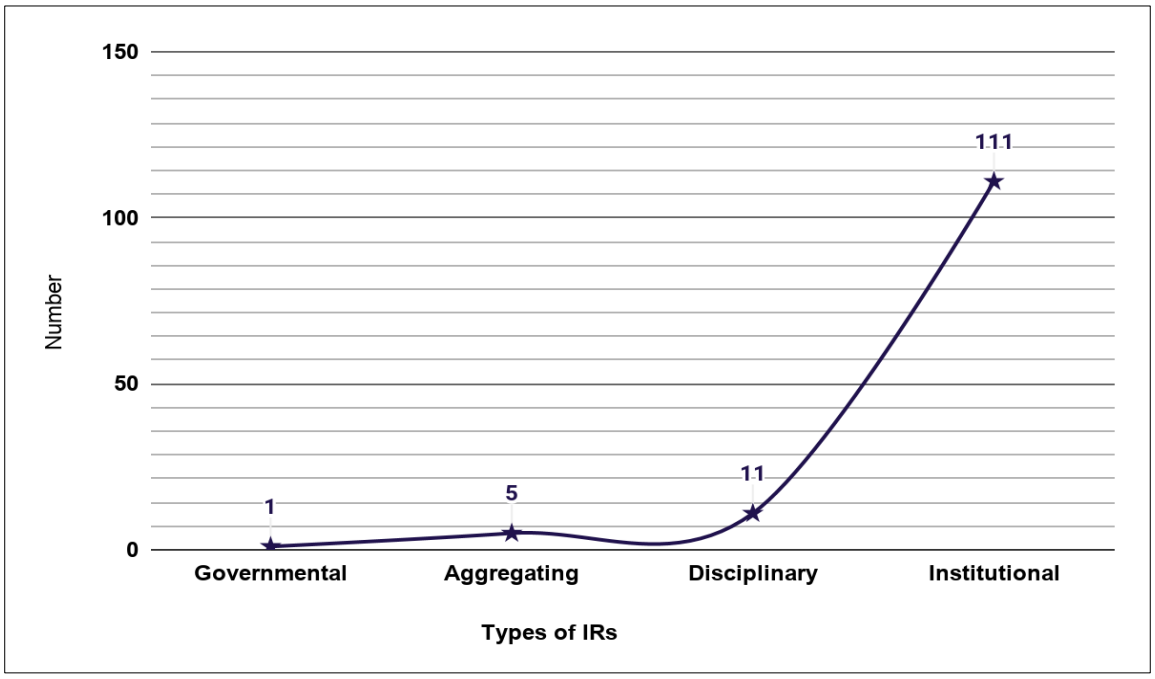

Fig.2: Types of Institutional Repository

Figure 2 reveals that among the total 128 institutional repositories, the majority, i.e., 111 (86.72%) of them belong to the institutional category followed by disciplinary 11 (8.59%), aggregating 5 (3.91%) and governmental 1 (0.78%). The study identified that the highest number of IR's are Institutional, and a few are government-owned.

6.3 Software used to build IR

Nowadays, software and hardware have become the most integral part of the organization to effectively and efficiently run the organization system. There are different types of software tools available under free/open source or commercial/proprietary streams to create institutional repositories (Kuri, 2014). Authors have collected each repository's attributes with the names of the software they have been developed with its percentage of usage. The details are depicted in figure 3.

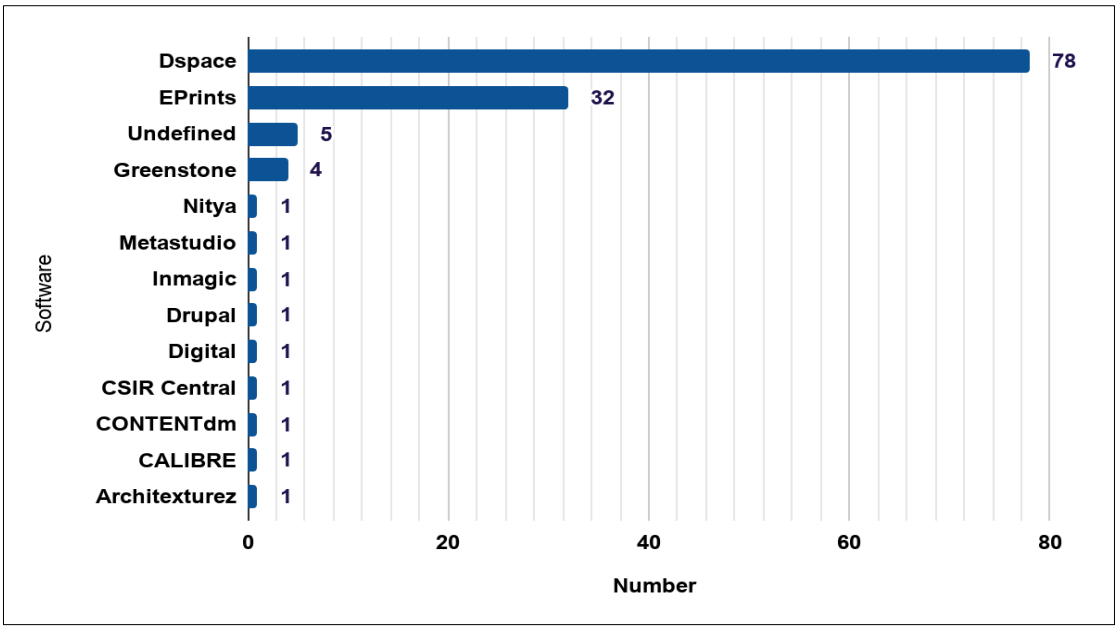

Fig.3: Software-wise distribution of IRs

Figure 3 depicts the categorization of different software used to create institutional repositories among SAARC organizations. Out of 128 institutional repositories, most of them, i.e., 78 (60.94%), used DSpace software to build their institutional repositories, followed by E-Prints software with 32 (25%) repositories. The study conducted by Melero et al. (2009); Wani, Gul and Rah (2009); Prabhat & Gautam (2010); Abrizah, Noorhidawati & Kaur (2010); Singh (2017); Das & Singh (2017); Singh & Verma (2017) found in their study that Dspace was widely used software. It is observed from the data shown in the figure that the majority of the institutional repositories have preferred open-source software for archiving their intellectual works. In contrast, a few institutions used proprietary software also. However, authors could not identify the names of software used for building few repositories as they have not been given any name, hence categorized under undefined.

6.4 Language-wise Distribution of IR

Language is used as a medium of communication to share ideas, views, and experiences. It allows humankind to access information and data contents, draw inferences, accomplish defined goals, and understand and communicate**.** The authors have identified and categorized language-wise contents of institutional repositories distributed in DOAR, and they are shown in figure 4.

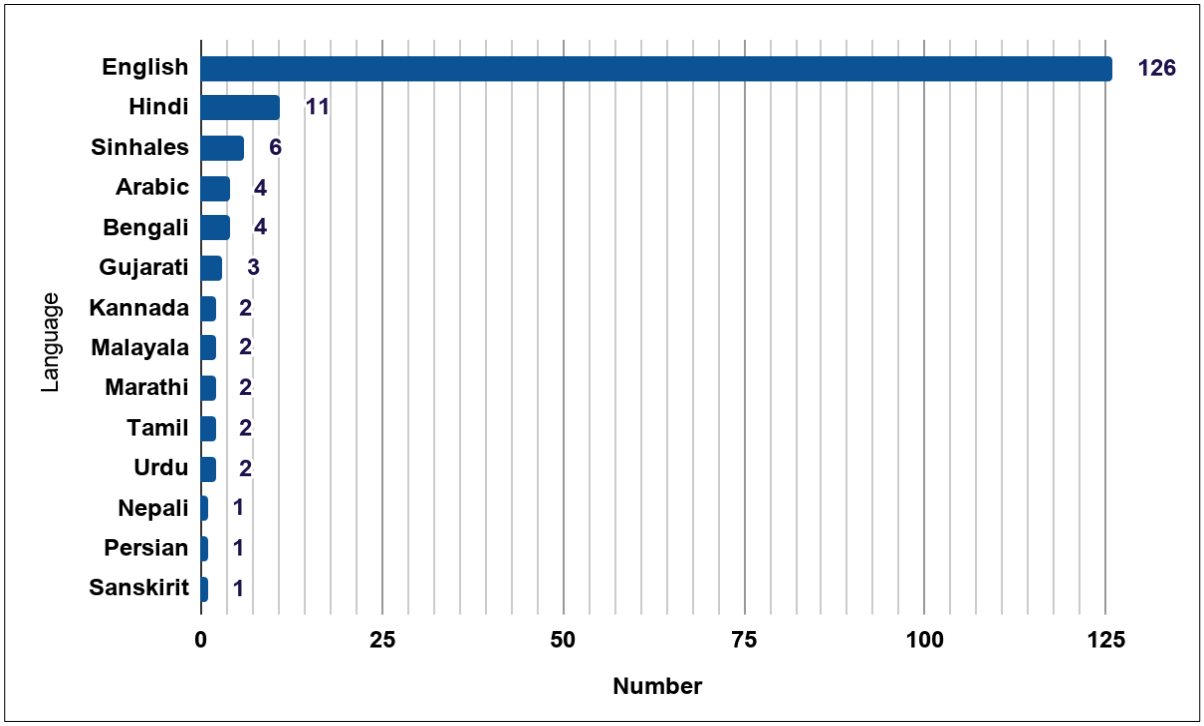

Fig.4: Language-wise distributions

It is clear from the analysis that the language in which the majority, i.e., 126 (75.46%) of the repositories are created in the English language, followed by the languages such as Hindi 11 (6.59%), Sinhalese 6 (3.59%), and Bengali and Arabic 4 each (2.4%). Research studies conducted by Wani, Gul, and Rah (2009); Abrizah, Noorhidawati & Kaur (2010); Singh (2017); Das & Singh (2017); Singh & Verma (2017); Bashir, Mir, and Sofi (2019) disclose that English as the most widely used language interfaces for building IRs. A few numbers of the institutional repositories consist of other regional languages, as shown in the figure.

6.5 Content-wise Distribution of IR

The nature of contents being added to the repository distributions is recorded under its numbers with a cumulative percentage. The details are indicated in figure 5.

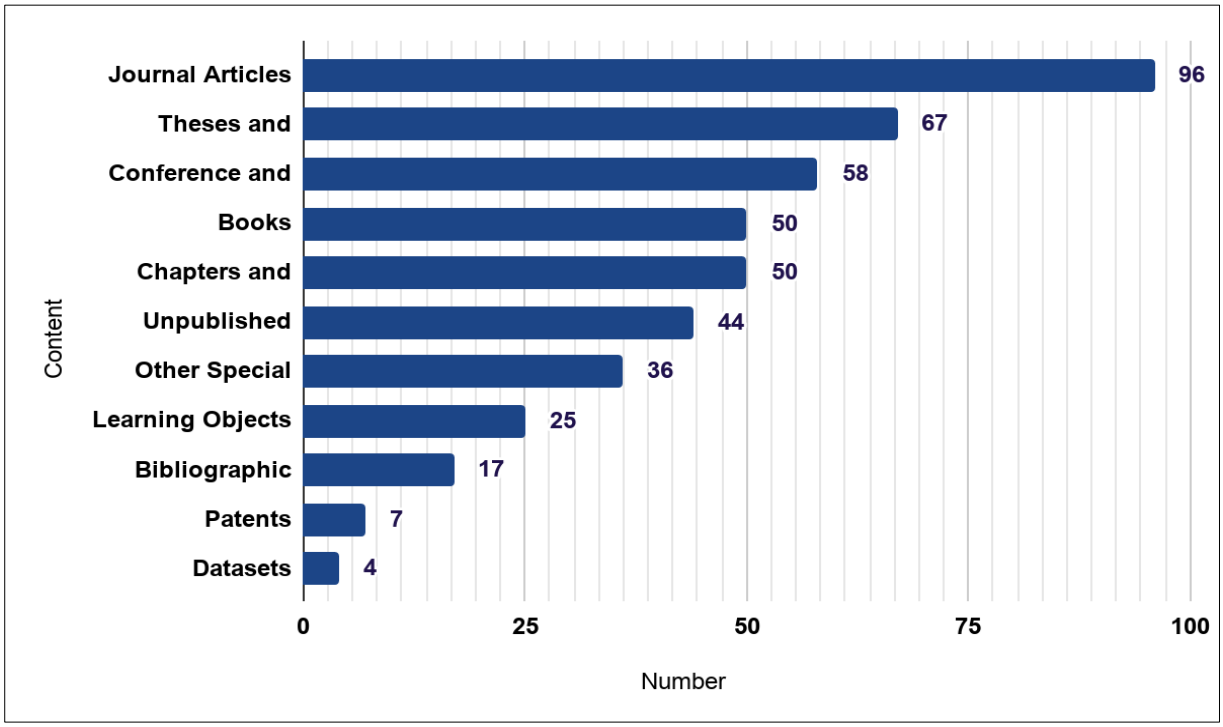

Fig.5: Content-wise distribution

Figure 5 represents the content-wise distribution of Institutional Repositories in DOAR. Out of 128 Institutional repositories, the majority, i.e., 96 (21.15%) of repositories consists of journal articles followed by doctoral thesis 67 (14.76%), conference and seminar proceedings 58 (12.78%), book and book chapters (edited book) 50 (11.01%) each, and unpublished resource contents 44 (9.69%). Research studies of Matsuura's (2008); Wani, Gul and Rah (2009); Abrizah, Noorhidawati & Kaur (2010); Singh (2017); Das & Singh (2017); Singh & Verma (2017) revealed that the 'journal articles' are the most well-known types of contents obtainable in institutional repositories. Further, a few IR's consists of other sources of contents like learning objects 25 (5.51%), bibliography details 17 (3.74%), patents 7 (1.54%), and datasets 4 (0.88%).

6.6 Discipline wise Distribution of IR

Discipline helps every academician decide the pedagogic approaches and understand the relationship between knowledge nature. The below figure 6 indicates discipline wise distribution of IR.

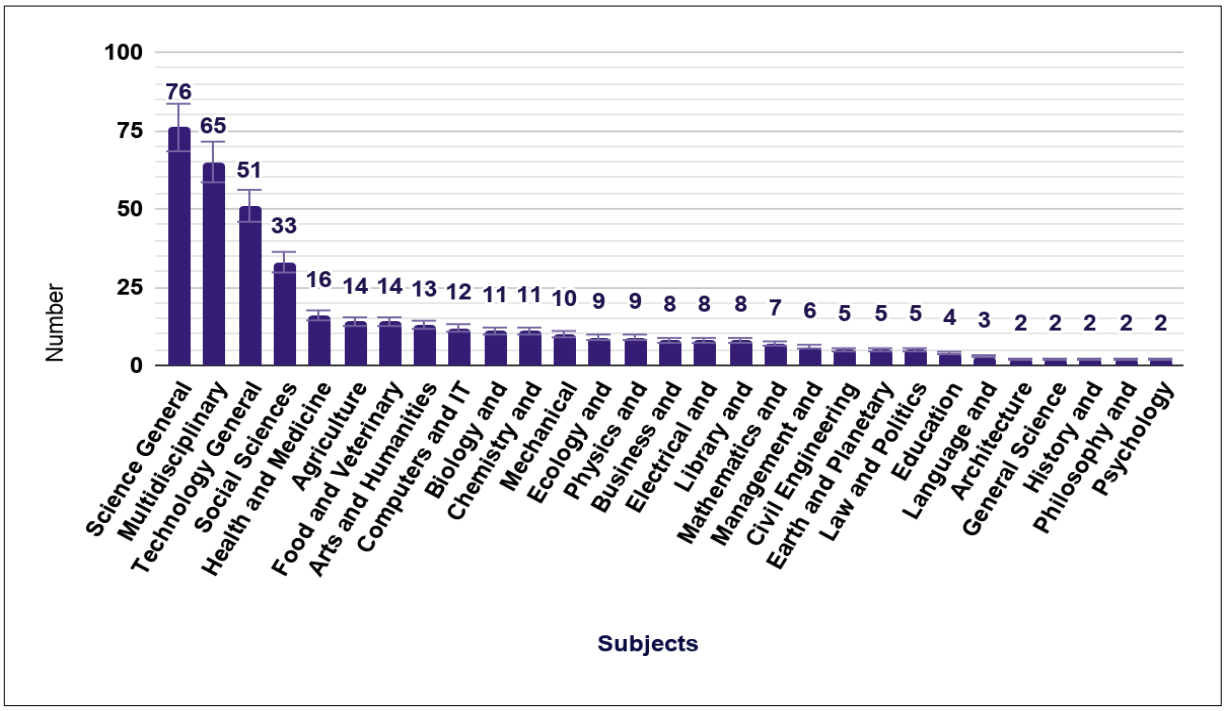

Fig.6: Subject-wise distribution

Figure-6 indicates the discipline-wise distribution of institutional repositories in DOAR. The majority, i.e., 76 (18.40%) of IR's are grouped under Science in General, followed by multidisciplinary 65 (15.74%), technology in General 51 (12.35%), Social Science (7.99%), 33, Health and Medicine, 116 (3.87%) each Agriculture 4 (3.39%) and Food and Veterinary, computers and IT 13 (3.15%), biology and Chemistry 11 (2.66%) each, and mechanic subject 10 (2.42%). Further, very few IR's consist of other subjects, as shown in the above figure.

6.7 Country wise Distribution of IR

The SAARC is the regional intergovernmental organization and geopolitical union of states in South Asia. Its member states are India, Afghanistan, Bhutan, Nepal, Bangladesh, Maldives, Pakistan, and Sri Lanka. The authors have collected data on the country-wise distribution of IR and are represented in figure 7.

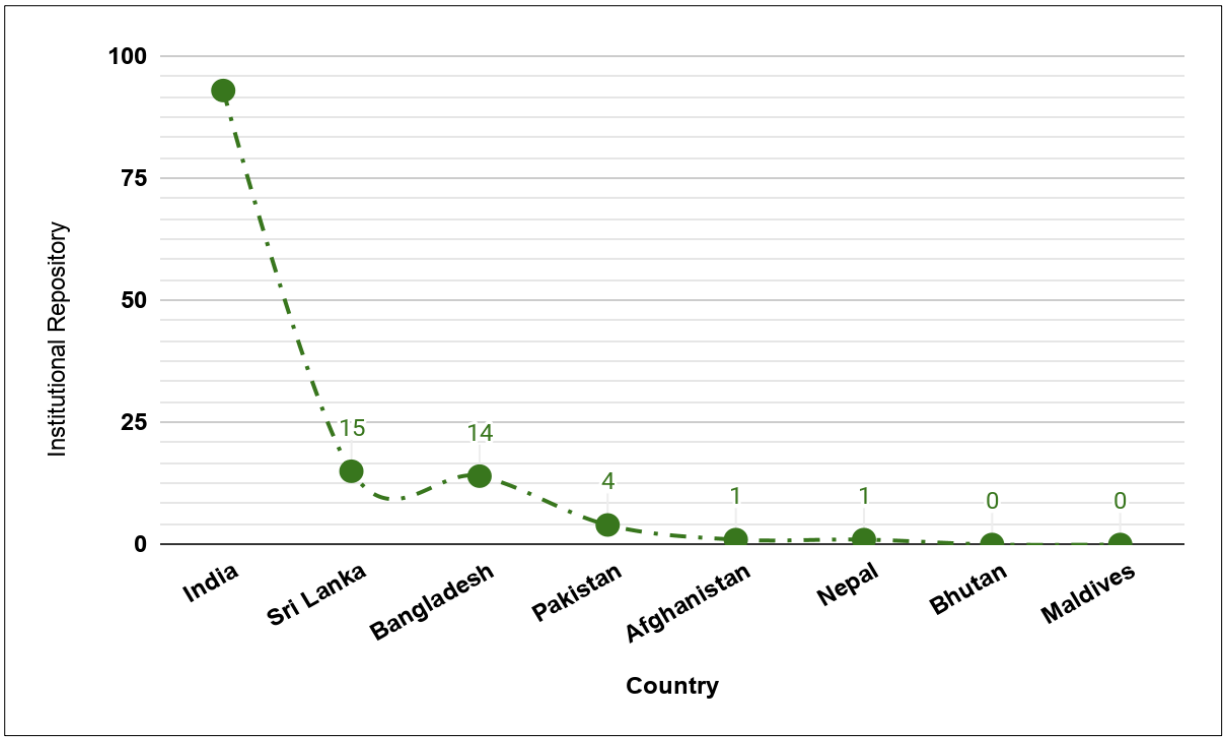

Fig.7: Country-wise distribution

Figure7 reveals the country-wise distribution of Institutional repositories. Among the SAARC countries, India contributes the highest, i.e., 93 (72.66%) number of institutional repositories, followed by Sri Lanka 15 (11.72%), Bangladesh 14 (10.94%), Pakistan, 4 (3.13%), Afghanistan and Nepal 1 (0.78%) each. Further, it is surprising to know that none of the IR's, which represent Bhutan and Maldives countries.

6.8 Type of Institutional Repositories and total number Records

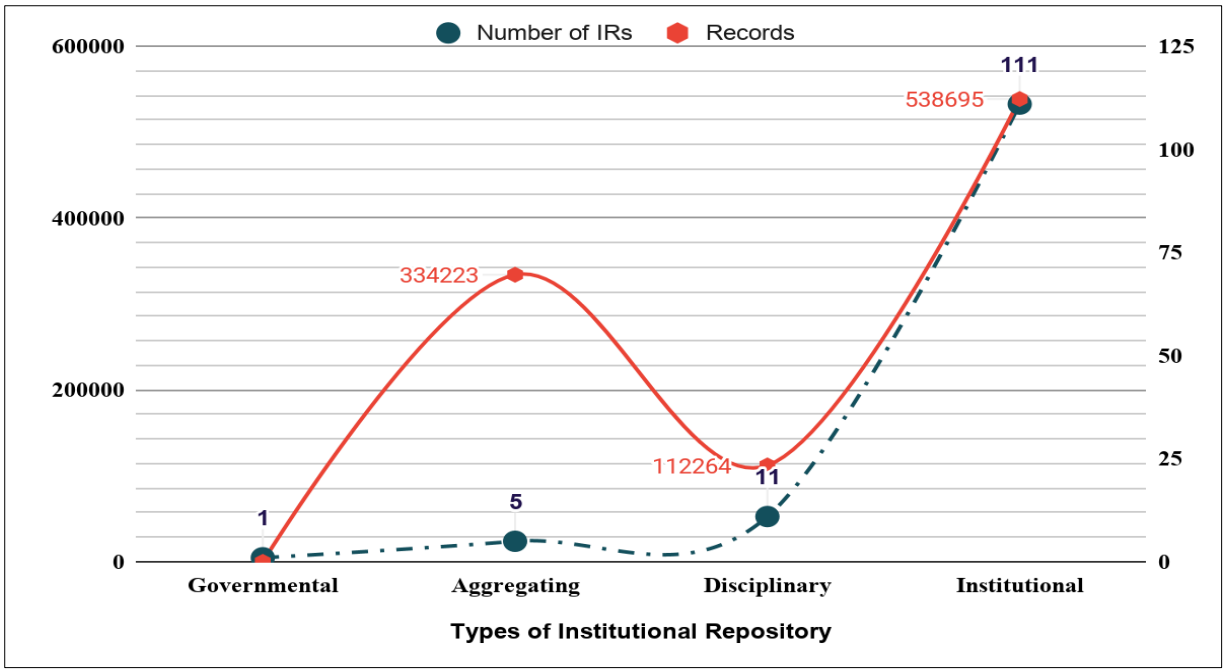

Fig.8: Types of IRs and Records

Figure 8 presents the number of IR's created and the corresponding records deposited. It is observed that the highest number, i.e., 538695 records contributed from 111 Institutional types of repositories followed by 334223 records from 3 aggregation types of repositories, 112264 records from 11 disciplinary types of repositories, and o records from 1 Government type of repositories. Research studies conducted by Roy, Wani, Gul & Rah (2009); Pinfield et al. (2014); Lone and Sheikh (2016); Ali, Lone and Mushtaq (2018); Mir and Sofi (2019); reveal that the majority of the repositories are institutional.

6.8 Nature of Contributing Organization

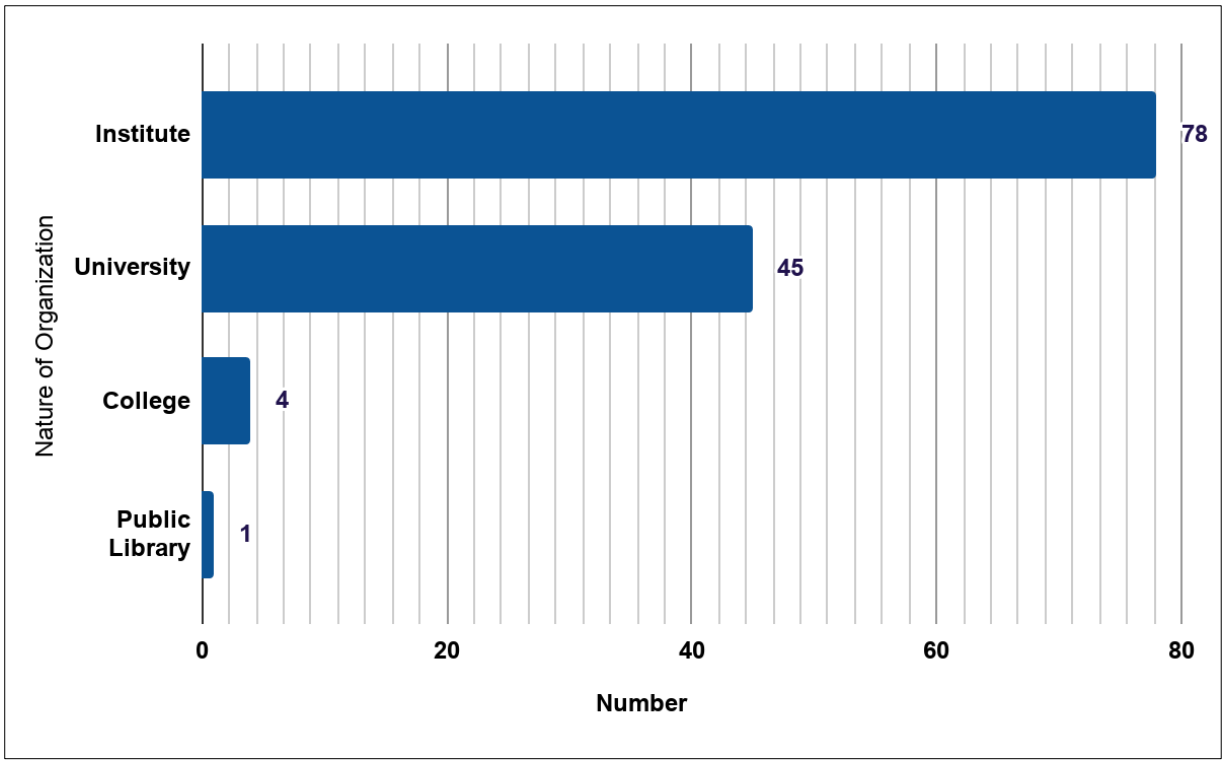

Fig.9: Nature of Organization with IRs

Figure 9 indicates the nature of the organization in which the IR's are created. It is found from the analysis that the majority, i.e., 78(60.94%) Institutional Repositories in which it is created, is Institute followed by 45(35.16%) Universities,4(3.13%) colleges, and 1(0.78%) public library.

3. Major findings

- ❖ It is found from the analysis that out of 128 SAARC countries IR's, the year 2012 and 2018 observed the highest number (i.e., 14.06%) of IR registration with DOAR, whereas none of the IR's registered in the year 2018. The growth of registration of IRs in the DOAR registry is found oscillating during the study period.
- ❖ The analysis also observed that the highest 60.94% numbers of institutional repositories have developed using DSpace software. It is evident from the study that most of the SAARC countries opt for open source software as they are economically feasible.
- ❖ It is found from the analysis that the highest numbers of (75.46%) of IRs are developed in the English language.

- ❖ It is found from the observation that out of 128 IR's, the majority of (86.72%) IR's are Institutional type repositories.
- ❖ It is evident from the analysis that the Institutional type of repositories stands top rank by contributing the highest number of 538695 records.
- ❖ It is noticed from the analysis that Countries like Bhutan and Maldives are yet to make contributions to DOAR.
- ❖ From the analysis, it is found that the highest (i.e.21.15%) number of repositories registered by the SAARC under DOAR consists of source content 'journal articles' and 'Science in General' as discipline-wise institutional repositories with the highest percentage recorded as 18.40% among the other disciplines IRs.
- ❖ It is observed from the analysis that out of 128 IR's of the SAARC countries, nearly three-fourths of IRs registered in DOAR were represented from India.

4. Conclusion

DOAR is an open international platform for every world nation to showcase their scientist's intellectual works through the creation of an Institutional Repository. The study found less interest in creating institutional repositories by the SAARC countries than Western countries. It may be due to the lack of awareness about the institutional repositories' scope and purpose and the advantages of open access to the institutions' intellectual contents. The contribution of India is remarkable and is the highest among the other SAARC countries. However, countries like Bhutan and Maldives are yet to make contributions to DOAR. Authors appeal that these countries have to create their institutional repositories and to be part of the DOAR.

5. References

1. Abrizah, A., Noorhidawati, A., & Kiran, K. (2010). Global visibility of Asian universities' open access institutional repositories. *Malaysian Journal of Library and Information Science*, 15(3), 53–73. DIO=10.1.1.472.8338&rep=rep1&type=pdf

2. Ali, M., Loan, F. A., Mushatq, R. (2018) *5th International Symposium on Emerging Trends and Technologies in Libraries and Information Services (ETTLIS).* Open Access Scientific Digital Repositories: An Analytical Study of the Open DOAR. Pp.213-216. DOI: 10.1109/ETTLIS.2018.8485265.

3. Ali, S., Jan, S., & Amin, I. (2013). Status of Open Access Repositories: A Global Perspective. *International Journal of Knowledge Management and Practices*, 1(1), 35–42. Retrieved from http://www.indianforester.co.in/index.php/ijkmp/article/view/38373.

4. Das, K. C. & Singh, K. (2017). Current status of Chinese open access institutional repositories: A Case Study. *International Research: Journal of Library & Information Science*, 7(1),1-9.

5. Ganaie, S.A., Jan, S., Loan, F.A., and Nisa, R. (2014). Current trends of the open-access digital repositories in the Library and Information Science. International *Journal of Information Dissemination and Technology*, 4(4), 278-282. Retrieved from https://www.researchgate.net/publication/275189947_Current_Trends_of_the_Open_Access_Digital_Repositories_in_Library_and_Information_Science

6. Hylén, J. (2008). Why Give Knowledge Away for Free? The Case for Open Educational Resources. Open Source Business Resource, http://timreview.ca/article/175

7. Kuri, Ramesh. (2014) Information and Knowledge Sharing through Institutional Repositories: A Case study of eprints@IISc: *International Journal of Digital Library Services*,4(4) 134-145

8. Loan, F. A., & Sheikh, S. (2016). Analytical study of open access health and medical repositories. *The Electronic Library*, 34(3), 419–434. DOI: 10.1108/EL-01-2015-0012.

9. Roy, B.K., Biswas, S.C., & Mukhopadhyay, P. (2012). Open Access Repositories in Asia: From SAARC to Asian Tigers. *Library Philosophy & Practice*, 1–11. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=llf&AN=90330665&site=ehostlive

10. Singh, K. & Verma, N. (2017). Global Visibility of Asian countries' open access institutional repositories. *Indian journal of information library & society*, 30(3- 4), 256-259.

11. Singh, K. (2017). Assessment of Open-Access Institutional Repositories: A Case Study of Australia. *Pearl: A Journal of Library and Information Science*, 11(4), 400-404.

12. Singh, P. (2016). Open access repositories in India: Characteristics and future potential. *IFLA Journal*, 42(1), 16–24. DOI: 10.1177/0340035215610131.

13.The South Asian Association for Regional Cooperation (SAARC) (https://www.saarc-sec.org/index.php/about-saarc/about-saarc) accessed on 18/10/2020 at 16.44 pm.

14. Directory of Open Access Repository website (https://v2.sherpa.ac.uk/opendoar)accessed on April 18, 2020.

15. Pinfield, S. (2005). A mandate to self-archive? The role of open access institutional repositories. *Serials: The Journal for the Serials Community*, 18(1), 30–34. DOI: 10.1629/1830

16. Matsuura, K. 2008. Japan's Institutional Repositories: Where did they come from and where are they headed? Master's theses, the University of North Carolina at Chapel Hill, 2008. Available at: http://hdl.handle.net/1901/582

17. Melero, R., Abadal, E., Abad, F., and Rodríguez-Gairín, J.M. 2009. The situation of open access institutional repositories in Spain: 2009 report. *Information Research*, Vol. 14, no. 4, paper 415. Available at http://InformationR.net/ir/14-4/paper415.html

18. Prabhat, S. and Gautam, J.N. 2009. Institutional repositories: new initiatives to preserve the intellectual output in India. In K. Sanjay, J.P.K. Anbu, and ShriRam (Eds.), *Emerging Technologies and Changing Directions of Libraries and Information Services*, (pp.173-177). New Delhi: KBD Publications.

19. Wani, Zahid Ashraf; Gul, Sumeer; and Rah, Javeed Ahmad. 2009. Open Access Repositories: A Global Perspective with an Emphasis on Asia. *Chinese Librarianship: an International Electronic Journal*, Vol. 27. Available at: http://www.iclc.us/cliej/cl27WGR.htm