Summer 6-2021

A 2020 Scenario of BRICS Institutional Repositories through OpenDOAR

Dr. RAVI SHUKLA
UNIVERSITY OF JAMMU, shukladlisbhu@gmail.com

A 2020 Scenario of BRICS Institutional Repositories through OpenDOAR

Sangita Gupta, Professor, Department of Library and Information Science, University of Jammu, Jammu- 180006 (India), E-mail: sangitauniv@gmail.com

Ravi Shukla, Lecturer, Department of Library and Information Science, University of Jammu, Jammu- 180006 (India), E-mail: shukladlisbhu@gmail.com

Diksha Sharma, Research Scholar, Department of Library and Information Science, University of Jammu, Jammu- 180006 (India), E-mail: dikshasharma9922@gmail.com

Abstract

The open-access initiatives enhance the global visibility of an institution's scholarly research output. This initiative has helped the scientists, teachers, students as well as researchers by providing visibility to their research outputs and increases the impact of their work as well their parent institution. Also, this has facilitated the users to access global information at a single location. In this study, the researcher tries to find out the scenario of institutional repositories of BRICS countries to open access in the year 2020 using OpenDoar (open directory of open access repositories). The list of 400 repositories from BRICS countries has been retrieved from OpenDoar, maximum of 151 repositories are from Brazil. Out of total 400 repositories, 292 repositories have working homepages, multidisciplinary subject coverage by a maximum of 232 repositories; Dspace is the preferred software by a maximum of 300 repositories; English is the most used language of content with many multilingual repositories, maximum of 361 repositories are of institutional type, India has the maximum collection followed by Brazil and journal article is the content of maximum 287 repositories. Only 39 repositories provide policy support and only 45 were updated in the year 2020.

Keywords: *Institutional Repositories, OpenDOAR, BRICS Countries, Open Access.*

1. Introduction

In the digital era, technological change is needed due to a significant increase in the overall volume of research output worldwide, increasing need for archival and access to unpublished information, increasing demand to access knowledge or information objects from anywhere at any time and increasing uncertainty over handling the preservation of digital scholarly research work. Institutional repositories act as a new technology for collecting scholarly work or research work in digital form created by the faculty, staff and students. And also they provide worldwide availability through open access movement. Institutional repositories act as a mean to manage and preserve effectively an institution's knowledge base and intellectual assets results in the content of IR expanding beyond e-prints to include research data e-learning materials and other forms of institutional intellectual outputs, which are generally not published or preserve anywhere. It needs to be ensured that content within the repositories remains accessible and retains its authenticity, reliability and integrity as it is needed.

2. Institutional Repositories

Institutional repositories are created to manage, preserve and maintain the digital assets, institutional output and histories of academic institutions. They provide global visibility at a

single location. Crow[1] in the year 2002 defines IR as “a digital institutional repository could be any collection of digital material hosted, owned or controlled, or disseminated by college or university, irrespective of purpose or provenance”. Also in 2003 Yeates[2] shared his point of view on IR as “an institutional repository is the collective intellectual output of an institution recorded in a form that can be preserved and exploited.” An Institutional Repository may also be defined as an electronic platform of the scientific and scholarly output of an association or institution, preserve in digital layout, where search and revival are permitted for its consequent countrywide or worldwide use.

The global institutions of higher education are facing the requirement of managing their knowledge, research and resources in a more efficient manner. With the help of developing institutional repositories, institutions are availing their research and scientific output globally; this will develop and maintain the associations between the institutions of higher repute and both national and global research centres.

3. BRICS Countries

BRICS is not an association but a short form for the collaboration of Brazil, Russia, India, China and South Africa that form 42% of the world population and account for over 31% of the world's GDP according to the World Factbook. The acronym was first developed in the year 2001 as "BRIC" by the Goldman Sachs economist Jim O'Neill in his report, Building Better Global Economic BRICs. Foreign ministers of these countries began meeting informally in 2006, which led to more formal annual summits beginning in 2009. South Africa was added to BRIC in 2010 and forms BRICS. The main aim of the collaboration is to convey the factual advantages for people and help in getting better living and the worth of existence.

4. OpenDoar

The growth of open access initiative demands the authentic platforms which provide the access to such archives in a standard and organised manner. OpenDoar platform launched in the year 2005 as the product of a collaborative project between the University of Nottingham and Lund University, funded by OSI, JISC, SPARC Europe and CURL. OpenDoar provides a qualitative listing of open access archives with various features. It provides the access to the county-wise list of 5,466 repositories globally, subject coverage of archives, statistics, advance search facility, collection policies, preservation policies, etc. JISC and COAR collaborate with each other in October 2020 and will be working jointly on promoting community governance over OpenDoar.

5. Nature and Scope of the Study

The scope of the present study is limited to only 400 repositories registered under OpenDoar platform from BRICS Countries (Brazil, Russia, India, China, and South Africa). Also to analyse the total collection in the repositories 39 repositories from Brazil, 26 from India, 24 from China, 10 from repositories from Russia and 9 from South Africa have been excluded due to their non-availability at present in the Open DOAR platform.

6. Background of the Study

The background of study plays an essential role as it brings clarity, a focal point to the research problem and widens your knowledge base in the area of your research. Following are some studies under this.

Gul, Bashir and Ganaie[3] explored the institutional repositories of the South Asian region registered in the Open directory of open access repositories to analyze the various features. It was revealed that India, Sri Lanka and Bangladesh were the top-ranked countries in South Asia in terms of the number of repositories. Out of the total 111 repositories under study, 74.47% repositories were operational (maximum from India). In terms of the number of operational repositories and a total number of records, India leads the other countries. Journal articles, OAI-PMH, DSpace, English as the language of the content, and Web 2.0 tools were the features of major repositories. But the maximum repositories do not have content management policies and usage statistics feature.

Bansal[4] examines the contribution of the South Asia Association for Regional Cooperation (SAARC) using OpenDoar. In this study collection, language of content, software used, content type, and subject of the repositories were determined and found that the major contribution to the OpenDOAR among SAARC countries was through the repositories of India as out of total 86 repositories 79.07% were from India. Multidisciplinary repositories, Dspace software and English language of the content were more preferred. But Bhutan and Maldives have no contribution to OpenDOAR.

Dhanavandan and Tamizhchelvan[5] identified the growth and development of Institutional Repositories available in BRICS Countries using OpenDOAR. It was shown that a total of 242 repositories were represented from BRICS countries in OpenDOAR. Out of the total 242 repositories, 34.71% repositories are from Brazil, followed by China, Russia, and South Africa. The study represented that a total of 25,66,549 records from 242 repositories (maximum 11,17,688 records from Brazil), 73.14% repositories adopt DSpace software (maximum 26.03% from Brazil), 51.24% repositories are in the Multidisciplinary subject category (maximum 19.83% from Brazil), 17.76% repositories have Articles, References, Conferences, Theses and Books (maximum 5.78% from Brazil), 33.88% repositories are available only in English language (maximum 21.90% from India), 69.83% repositories are monolingual, (maximum 25.62% from Brazil), 69.42% repositories updated their records at the end of November 2014, (maximum 26.03% from Brazil). Therefore, Brazil ranked 1st in most of the features presented in the study.

Singh[6] analyzed the DOAJ (Directory of open access journals) and OpenDOAR (Directory of open access repositories) platforms to better understand the role of Brazil, the Russian Federation, India, China, and South Africa (BRICS) in the open access movement. The researcher found out that Brazil and India are the second and the fourth largest provider of open access journals to DOAJ and also represented the great contribution of open access repositories to OpenDOAR. Two-thirds of multidisciplinary repositories, DSpace repositories software, and varied collection size are some of the preferred features of the BRICS repositories. In DOAJ, English is the most ideal language with the influence of some regional languages and most of the journals do not blame any fee for publishing.

Dhanavandan and Tamizhchelvan[7] carried out a study on Institutional Repositories which are listed in the DOAR platform from South Asian countries like India, Pakistan, Nepal, Bangladesh Sri Lanka, Bhutan and Maldives. All the South Asian countries have institutional repositories but Bhutan and Maldives do not have any repository. Therefore, only the five countries have a total of 75 repositories, out of which India 62(82.67%), Bangladesh 7(9.33%), Pakistan 3(4.00%), SriLanka 2(2.67%) and Nepal 1(1.33%) have developed

institutional repositories respectively. Name of the repository, size in terms of collection, repository type, content and languages of the repositories and various software used were analyzed.

Roy, Biswas and Mukhopadhyay[8] have undertaken a study to have a broad look at the current situation of the process of OARs in Asian countries. The study showed that in the worldwide development Asia holds 3rd position in terms of the number of repositories after Europe and North America. Out of the total selected twenty (20) repositories, 13 repositories are from Taiwan, 2 repositories are from India, and the 5 repositories are from Japan. It was concluded that awareness of IRs should be increased and it should be mandatory for each and every author to publish their research in their institutional repository.

7. Objectives of the Study

The objectives of the study are as follow

1. To analyse the growth of IRs in BRICS countries.
2. To identify the major subject coverage by the repositories.
3. To identify the software used and type of repository in BRICS countries.
4. To identify the types of collection in the repositories.
5. To identify the policy support and currency of IRs.

8. Methodology

For conducting this study, we have consulted the Directory of Open Access Repositories (Open DOAR). Only the repositories of BRICS countries registered in Open DOAR have been selected for the study. The Open DOAR has given the IR list of BRICS countries; we got 400 IRs in total till March 2021. Then content analysis has been done to all the 400 IR website of BRICS countries for getting the overall collection, content type, repository type, software used, subject coverage and their growth. But almost 108 homepages of IRs from BRICS countries, are not available at present, this factor only affects the total collection of the repositories country-wise.

9. Need and Significance of the Study

In this study, an attempt has been made to analyse the 2020 scenario or the contribution of BRICS countries to open access through the OpenDoar platform. The study may also be helpful in showing the potential role of BRICS countries in exploring their research outputs in the scholarly communication process. It also acts as a motivational force for the creation and development of repositories to other countries.

10. Results and Discussion

The researcher makes an effort to study and discuss the growth and development of the IRs from BRICS Countries registered in the OpenDoar platform. The appropriate data for the study is collected from the OpenDoar platform. The strength and the limitations of the institutional repositories from BRICS Countries are discussed as follow:

10.1 Growth of Repositories in BRICS Countries

Table 1 shows the no. of repositories registered from BRICS countries in OpenDOAR. It also represents the growth of repositories in a specific period of time. It is noted that Brazil ranks first among the BRICS countries as it has the highest no. of repositories i.e. 151. This verifies

the concern of the country toward the open access movement through OpenDoar. Brazil is followed by India 98, China 60, Russia 48, and South Africa 43. The time span 2017-2020 is the most productive time spam with 125 repositories, followed by 2009-2012 with 120 repositories, 2013-2016 with 94 repositories. Also, during the period 2017-2020, Brazil (62) contributes the maximum number of repositories.

Table 1: Growth of Repositories in BRICS Countries

Sl. No.	Time spam	BRICS Countries					
		Brazil	**Russia**	**India**	**China**	**South Africa**	**Total**
1	2005-2008	15	2	24	5	11	57
2	2009-2012	43	14	23	27	13	120
3	2013-2016	31	14	29	9	11	94
4	2017-2020	62	17	20	18	8	125
5	Upto Feb. 2021	0	1	2	1	0	3
Total		**151**	**48**	**98**	**60**	**43**	**400**

10.2 Operational status of Repositories

Table 2 defines the country-wise operational status of repositories through OpenDoar. It is depicted that Brazil contributes the maximum no. of working repositories among the other BRICS countries. Out of a total of 151 repositories in Brazil, 112 repositories are working but the URL of the rest of 39 repositories is not working. In Russia, a total of 38 repositories are working out of total 48 repositories and the URL of 10 repositories is not working. Out of total 98 repositories from India, 72 repositories are working but 26 repositories do not have working URL. In China, the no. of working repositories is 36 out of 60 repositories and 24 repositories are not accessible through OpenDoar. And in South Africa, 34 repositories are working and 9 repositories are not working out of total 43 repositories. Therefore, out of total 400 repositories, 292 repositories are working and 108 repositories do not have the working URLs.

Table 2: Operational status of Repositories

Sl. No.	Country	Total no. of Repositories	No. of Working Repositories	No. of not Working Repositories
1	**Brazil**	151	112	39
2	**Russia**	48	38	10
3	**India**	98	72	26
4	**China**	60	36	24
5	**South Africa**	43	34	9
Total		**400**	**292**	**108**

10.3 Subject Covered by Repositories

Table 3 depicts the county-wise Subject coverage of repositories. It is analyzed that Multidisciplinary subject coverage tops in maximum no. of repositories and also Brazil has the maximum number of it. in this study subject coverage of the repositories is broadly categorized into 6 main headings such as Multidisciplinary, Social Science General, Arts and Humanities, Technology General, Science General, and Health and Medicine. The maximum of 232 repositories is Multidisciplinary out of which 97 are from Brazil, 49 from India, 33 from Russia, 32 from South Africa and 21 repositories from China. Science General is the second major subject covered by a total of 47 repositories, out of which 19 from India, 12 from Brazil, 9 from China, 5 from Russia and 2 repositories from South Africa. The third most subject covered is Social Science General and Technology General each in 36 repositories. Social Science is covered by 97 repositories in Brazil, 49 in India, 33 in Russia, 32 in South Africa and 21 repositories in China. Technology General is covered by 14 repositories from China, 13 from India, 7 from Brazil, each 1 from Russia and South Africa. Health and Medicine are covered by a total of 35 repositories, out of which 11 repositories are from Brazil, 12 from India, 5 from South Africa, 4 from Russia and 3 from China. A total of 14 repositories covers Arts and Humanities out of which 7 repositories from Brazil, 3 from China, 2 from India and each from Russia and South Africa.

Table 3: Subject Covered by Repositories

Sl. No.	Subject Covered	Brazil	Russia	India	China	South Africa	Total
1	Multidisciplinary	97	33	49	21	32	**232**
2	Social Science General	17	4	3	10	2	**36**
3	Arts and Humanities	7	1	2	3	1	**14**
4	Technology General	7	1	13	14	1	**36**
5	Science General	12	5	19	9	2	**47**
6	Health and Medicine	11	4	12	3	5	**35**
Total		**151**	**48**	**98**	**60**	**43**	**400**

10.4 Software used by Repositories

Table 4 shows the various repository software used and the number of repositories utilizing them. Dspace, an open-source repository software is the maximum used software for developing open digital repositories by the BRICS countries and is maximumly used in the repositories from Brazil country. Dspace is maximumly used by 300 repositories, out of which 134 repositories are from Brazil, 57 from India, 47 from China, 32 from Russia and 30 from South Africa. Eprint is the second most used software by 36 repositories, 32 from India, 3 repositories from Russia and 1 from South Africa. SciELo software is used by a total of 5 repositories, 4 from Brazil and 1 from South Africa. VITAL software is used by 4 repositories, 2 from Russia and 2 from South Africa. DigiTool is used by 1 repository from

South Africa, Greenstone is used by 1 repository from India, and Omeka is used by the only repository from Brazil. Some other software is also used by the repositories as shown in the table. Therefore, it can be concluded that Dspace is the most preferred repository software in the BRICS countries.

Table 4: Software used by Repositories

Sl. No.	Software Used	BRICS Countries					Total
		Brazil	Russia	India	China	South Africa	
1	**Dspace**	134	32	57	47	30	**300**
2	**Eprints**	0	3	32	0	1	**36**
3	**SciELo**	4	0	0	0	1	**5**
4	**VITAL**	0	2	0	0	2	**4**
5	**Drupal**	3	0	1	0	0	**4**
6	**DigiTool**	0	0	0	0	1	**1**
7	**Greenstone**	0	0	1	0	0	**1**
8	**Omeka**	1	0	0	0	0	**1**
9	**Other**	9	11	7	13	8	**48**
	Total	**151**	**48**	**98**	**60**	**43**	**400**

10.5 Language of content in Repositories

Table 5 shows the language of content used in repositories from BRICS countries. It reveals that English is the most common language of content by a large number of repositories and maximum repositories are from India. A maximum of 249 repositories has used English as a language of contents, out of which 96 from India, each 46 from Brazil and China. The 2nd most common language of content is Portuguese used by 150 repositories from Brazil. Chinese used by 56 repositories from China, followed by Russian with 46 repositories from Russia, followed by Spanish used by 26 repositories from Brazil, followed by Hindi used by 11 repositories from India. Marathi (4), Gujarati (3), Arabic, Kannada and Malayalam (2), Bengali and German (1) are the language of the content in the respective Indian repositories. Also French, Dutch, Southern Sotho is the language of the content in 1 repository from South Africa. Therefore, English is the most common and preferred language of the content by the repositories from BRICS countries

Table 5: Language of content in Repositories

Sl. No.	Language of content	Brazil	Russia	India	China	South Africa	Total
1	**English**	46	14	96	46	47	**249**
2	**Afrikaans**	0	0	0	0	7	**7**
3	**French, Dutch, Southern Sotho**	0	0	0	0	1	**1**
4	**Chinese**	0	0	0	56	0	**56**
5	**Russian**	0	46	0	0	0	**46**
6	**Hindi**	0	0	11	0	0	**11**
7	**Marathi**	0	0	4	0	0	**4**

8	**Gujarati**	0	0	3	0	0	**3**
9	**Arabic, Kannada, Malayalam**	0	0	2	0	0	**2**
10	**Bengali, German**	0	0	1	0	0	**1**
11	**Portuguese**	150	0	0	0	0	**150**
12	**Spanish**	26	0	0	0	0	**26**

10.6 Repositories types in BRICS Countries

Table 6 represents the different types of repositories registered in OpenDoar from BRICS countries. Institutional repositories are the most famous repository type in the BRICS countries registered in OpenDoar and the maximum institutional repositories are from Brazil. There are mainly 4 types of repositories such as Institutional, Disciplinary, Aggregating and Governmental repositories. The majority of repositories are institutional type i.e. 361, out of which 137 from Brazil, 84 from India, 56 from China, 44 from Russia, and 40 from South Africa. A total of 23 repositories are of disciplinary type, out of which 11 from Brazil, 8 from India, 2 from South Africa and each 1 from Russia and China. Each 13 repositories are of aggregating and governmental type. The maximum of 5 aggregating repositories is from India, 3 from Brazil, each 2 from Russia and China and 1 from South Africa. A maximum of 10 governmental are from Brazil, each 1 from Russia, China and India and not a single governmental repository is from South Africa. Therefore, the majority of repositories are of the institutional type in the BRICS countries.

Table 6: Repositories types in BRICS Countries

Types of IR	**BRICS Countries**					**Total**
	Brazil	**Russia**	**India**	**China**	**South Africa**	
Institutional	137	44	84	56	40	**361**
Disciplinary	11	1	8	1	2	**23**
Aggregating	3	2	5	2	1	**13**
Governmental	10	1	1	1	0	**13**
Total	**151**	**48**	**98**	**60**	**43**	**400**

10.7 Collection in working IRs

Figure no. 1 shows the total collection of repositories registered in OpenDoar. To count the total collection only working repositories are considered i.e. 112 repositories from Brazil, 38 from Russia, 72 from India, 36 from China and 34 from South Africa. Therefore figure 1 shows the data of only 292 repositories. It depicts that India is the country with the maximum collection of 2,568,718 records, followed by Brazil 2404920 records, Russia with 1,177,483 records, China with 7,43,116 records and South Africa with 402414 records. The total collection of repositories of BRICS countries is 7,296,651 records. As per the total collection of the repositories, India ranks 1st and South Africa ranks 5th.

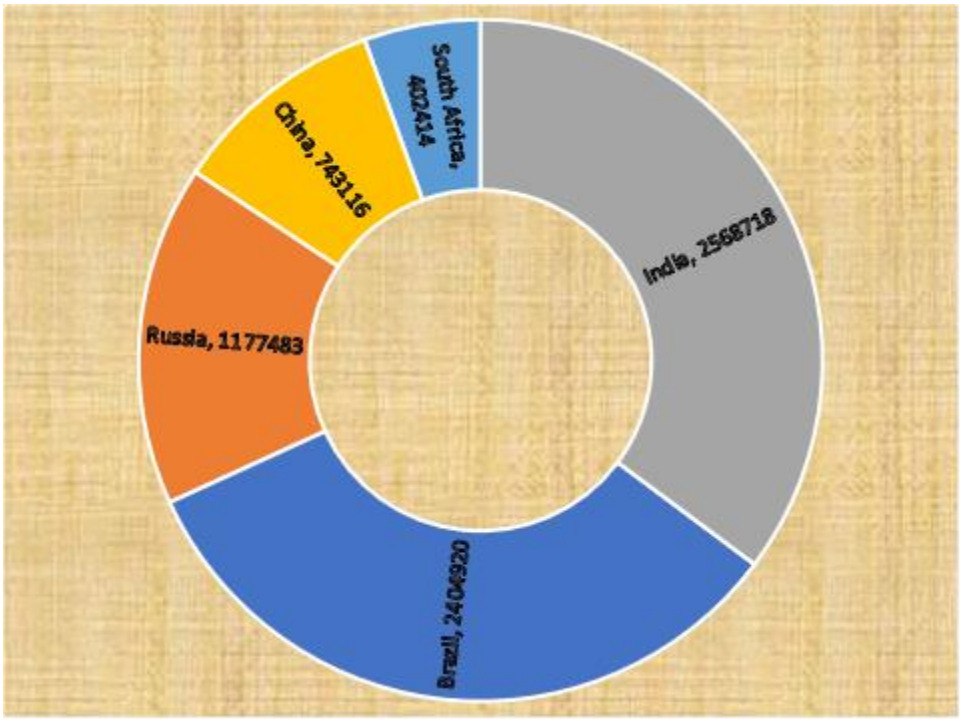

Figure 1: Collection in working IRs

10.8 Types of Collection in repositories in BRICS Countries

Table 7 defines the type of collection in the repositories of BRICS countries. Journal articles are the most frequent type of content found in the majority of repositories and the repositories Brazil leads the other repositories from BRICS countries. Journal articles are found in the majority of 287 repositories, out of which 96 repositories are from Brazil, followed by 68 from India, 54 from China, 43 from Russia and 26 from South Africa. Theses and Dissertations are covered by a total of 230 repositories, out of which 84 repositories are from Brazil, followed by 47 from India, 43 from China, 33 from South Africa and 23 from Russia. Conference and Workshop Papers are covered by a maximum of 150 repositories, out of which 44 repositories are from India, followed by each 33 from Brazil and China, 24 from Russia and 16 from South Africa. Books, Chapters and Sections are covered by a total of 148 repositories, out of which 54 repositories are from Brazil, followed by 35 from India, 26 from China, 23 from Russia and 10 from South Africa. Reports and Working Papers are covered by 113 repositories, out of which 36 are from Brazil, followed by 31 from India, 21 from China, 13 from South Africa and 12 from Russia. Special Item Types are covered by a maximum of 94 repositories, out of which 40 are from Brazil, followed by 29 from India, 10 from China, 9 from Russia and 6 from South Africa. Learning Objects are covered by a maximum of 64 repositories, out of which every 21 repositories from Brazil and India, followed by 16 repositories from Russia, 5 from China and 1 repository from South Africa. Bibliographic References are covered by 52 repositories, out of which 13 repositories are from China, followed by 12 are from Brazil, 11 from Russia, 10 from India and 6 from South Africa. Patents are covered by a maximum of 34 repositories, out of which 26 repositories are from China, followed by 6 from India and 1 each from Russia and South Africa. Datasets are covered by a maximum of 18 repositories, out of which 6 repositories are from Brazil, followed by 5 from South Africa, 4 from China and 3 from India.

Table 7: Types of Collection in repositories in BRICS Countries

Sl. No.	Types of Collection	Brazil	Russia	India	China	South Africa	Total
1	Journal Articles	96	43	68	54	26	**287**
2	Theses and Dissertations	84	23	47	43	33	**230**
3	Reports and Working Papers	36	12	31	21	13	**113**
4	Conference and Workshop Papers	33	24	44	33	16	**150**
5	Books, Chapters and Sections	54	23	35	26	10	**148**
6	Learning Objects	21	16	21	5	1	**64**
7	Special Item Types	40	9	29	10	6	**94**
8	Bibliographic References	12	11	10	13	6	**52**
9	Patents	0	1	6	26	1	**34**
10	Datasets	6	0	3	4	5	**18**
	Total	**382**	**162**	**294**	**235**	**117**	**1190**

10.9 Policy Support in Repositories

Table 8 examined the policy support provided by the repositories. OpenDoar mainly represents the five types of core policy support such as Metadata Policy, Data Policy, Content Policy, Submission Policy and Preservation Policy which assures the best practices for open access agreement. But it is revealed that a maximum no. of repositories does not provide any policy support. India leads the other countries in terms of policy support among other BRICS countries. It was noted that out of total 400 repositories; only 39 repositories have the proper policy support, a maximum of 16 repositories from India, each 8 repositories from Brazil and South Africa, 4 from Russia and 3 from China. While rest of the 277 repositories are not providing any policy support in the Open DOAR, out of 277 repositories 103 from Brazil, 55 from India, 52 from China, 39 from Russia and 28 from South Africa. A total of 84 repositories has only data policy, 40 repositories from Brazil, 27 from India, 7 from South Africa and each 5 from Russia and China.

Table 8: Policy Support in Repositories

Sl. No.	Country	No. of IRs having Policy Support	No. of IRs having no Policy Support	Only Data Policy	Total
1	**Brazil**	8	103	40	**151**
2	**Russia**	4	39	5	**48**

3	**India**	16	55	27	**98**
4	**China**	3	52	5	**60**
5	**South Africa**	8	28	7	**43**
Total		**39**	**277**	**84**	**400**

10.10 Currency of IRs

Table 9 shows the country-wise and year-wise up datedness of the repositories. It demonstrates that a very less number of repositories are updated in the year 2020 but the number increases with the beginning of 2021. It shows that out of total 400 repositories, the majority of 238 was last updated in 2019, 117 repositories in 2021 till February and only 45 repositories in the year 2020. Out of total 117 repositories which were last updated in 2021, 61 repositories are from Brazil, 37 from South Africa, 17 from India, 2 from China and not a single repository from Russia. Out of 238 repositories, 81 repositories are from Brazil, 71 from India, 47 from China, 39 from Russia and no repository from South Africa which were updated in the year 2019. Out of 45 repositories (2020), 11 repositories from China, 10 repositories from India, every 9 repositories from Brazil and Russia and 6 repositories from South Africa were last updated in the year 2020.

Table 9: Currency of IRs

Sl. No.	Year of last Updating	No. of IRs in BRICS Countries					Total
		Brazil	Russia	India	China	South Africa	
1	Till Feb-21	61	0	17	2	37	**117**
2	2020	9	9	10	11	6	**45**
3	2019	81	39	71	47	0	**238**
Total		**151**	**48**	**98**	**60**	**43**	**400**

11. Major Findings

Institutional repositories play an important role in collecting, organising, disseminating and preserving the knowledge in a much better way. The major findings of the study are concluded as:

1. Brazil (151) is the leading country in terms of no. of repositories in comparison of other BRICS countries registered in OpenDoar
2. The time- spam 2017-2020 is the most productive period in which the maximum of 125(31.25%) repositories are created. A maximum of 294 repositories is working while 108 repositories do not have working homepages.
3. Brazil has the maximum number of Multidisciplinary repositories and English is the most preferred language of content by maximum repositories, followed by the Chinese language.
4. Institutional repositories form the major repository type with a maximum of 361(90.25%) institutional repositories. out of which maximum institutional

repositories are from Brazil i.e. (137) and Indian repositories has the maximum collection of 2,568,718 records followed by Brazil.

5. Journal articles are the collection type found in the majority of repositories, out of which maximum repositories are from Brazil. Policy support to the repositories is provided by 39 (9.75%) repositories only, out of which 16 repositories are from India. Only 117 (29.25 %) repositories are updated in the last 2 months, out of which 61 repositories are from Brazil and only 45 repositories are updated in the year 2020.

12. Conclusion

Institutional Repositories plays a key role in the lifecycle of the publication process of research outputs to provide freely, easily and timely access. Institutional Repositories provides a standardized platform to increase the impact and visibility of research outputs of an institution, association or any type of organization that also preserve this treasure. Therefore, we can strengthen the research and learning development, increase the effective work time, and increase the visibility of research outputs through institutional repositories which leads towards a society of knowledge.

References

1. Crow, R., SPARC (Organization), & Association of Research Libraries. (2002). The case for institutional repositories: A SPARC position paper. Washington, D.C: SPARC. Retrieved from http://www.sparc.arl.org/sites/default/files/media_files/instrepo.pd
2. YEATES (R). Institutional repositories. *VINE*. 33, 2; 2003: *96-101*. doi: 10.1108/03055720310509064
3. GUL (S) BASHIR (S) and GANAIE (S A). Evaluation of institutional repositories of South Asia. *Online Information Review*, *44*, 1; 2019: 192 -212. Retrieved from https://doi.org/10.1108/OIR-03-2019-0087
4. BANSAL (S). Contribution of SAARC countries to the directory of open access repositories (OpenDOAR). *International Journal of Library Science, 14*,1; 2016: 51-55
5. DHANAVANDAN (S) and TAMIZHCHELVAN (M). Institutional repositories in BRICS Countries: a study. *International Journal of Knowledge Content Development & Technology* 5(1), 2015: 33-47.
6. SINGH (N). The role of BRICS in open access movement: with special reference to DOAJ and OpenDOAR. *Chinese Librarianship: An International Electronic Journal*, 38; (2014). Retrieved from http://www.iclc.us/cliej/cl38singh.pdf>.
7. DHANAVANDAN (S) and TAMIZHCHELVAN (M). A study on recent trends and growth of institutional repositories in South Asian countries. *International Journal of Information Library and Society*, *3*, 1, 2014: 8-15.
8. ROY (B K) BISWAS (S C) and MUKHOPADHYAY (P). Open Access Repositories in Asia: from SAARC to Asian Tigers. *Library Philosophy and Practice*. 2012. Retrieved from https://digitalcommons.unl.edu/libphilprac/808/

Web Resources

1. Guide lines for IR. Retrieved from http://eprints.rclis.org/13512/2/Guidelines_IR_english.pdf
2. Open DOAR. Retrieved from https://v2.sherpa.ac.uk/opendoar/about.html
3. BRICS countries. Retrieved from https://guides.loc.gov/brics