

A Study on Current Scenario of Institutional Repositories among BRICS Countries

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ABSTRACT

This paper is discussed about the current scenario of Institutional Repositories available in BRICS Countries. The relevant is collected from directory of OpenDOAR. Based on the data in Open DOAR, 242 repositories available in BRICS countries. Among the 242, 84(34.71%) repositories from Brazil, 39(16.12%) from China, 68(28.10%) repositories from India, 22(9.109%) repositories from Russia and 29(11.98%) repositories from South Africa. Among the 242 repositories, 168(69.42%) repositories are updated their status and records in the end of November 2014(regularly). Three repositories are not updated after 2011 but 15(6.20%) repositories are not specified

Keywords: Institutional Repositories; Knowledge and Appraisal; BRICS Countries

1. INTRODUCTION

Dr S.R. Ranganathan's five laws of library science enforce on the thought of providing the right information to the right users on right time by making the document available to the user irrespective of users and the place of the document. An institutional repository might also include other digital assets generated by academics, such as administrative documents, course notes, learning objects, or conference proceedings. Deposit of material in an institutional repository is sometimes mandated by that institution. Some of the main objectives for having an institutional repository are to provide open access to institutional research output by self-archiving it, to create global visibility for an institution's scholarly research, and to store and preserve other institutional digital assets, including unpublished or otherwise easily lost literature such as theses or technical reports

2. INSTITUTIONAL REPOSITORIES

An institutional repository (IR) is an online archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution. An institutional repository can be viewed as a "...a set of services that a university offers to members of its community for the management and dissemination of digital materials created by the institution and its community members. This includes materials such as monographs, academic journal articles, both preprints and postprints undergoing peer review, as well as electronic theses and dissertations (ETDs).

Institutional repositories are digital collections of the outputs created within a university or research institution. Whilst the purposes of repositories may vary in most cases they are established to provide Open Access to the institution's research output. Repositories adhere to an internationally-agreed set of technical standards that means that they expose the metadata of each item in their contents on the Web in the same basic way. In other words, they are 'interoperable'. This common protocol to which they all adhere is called the open Archives Initiative Protocol for Metadata Harvesting. The contents of all repositories are then indexed by Web search engines such as Google and Google Scholar, creating online Open Access databases of freely-available global research. As the level of self-archiving grows the Open Access corpus will represent an increasingly large proportion of the scholarly literature.

3. BRICS Countries

BRICS is the acronym for an association of five major countries which consists Brazil, Russia, India, China, and South Africa. The grouping was originally known as "BRIC" before the inclusion of South Africa in 2010. The BRICS members are all developing or newly industrialised countries, but they are distinguished by their large, fast-growing economies and significant influence on regional and global affairs. The term, "BRICS", was coined by economist Jim O'Neill. , Building Better Global Economic BRICs. The BRICS Forum, an independent international organisation encouraging commercial, political and cultural cooperation between the BRICS nations, was formed in 2011.

4. REVIEW OF LITERATURE

Crow (2002) identified an institutional repository with four major qualities: institutionally defined, scholarly, cumulative and perpetual, and open and interoperable. According to Yeates (2003), "An institutional repository is the collective intellectual output of an institution recorded in a form that can be preserved and exploited." According to Lynch (2003), a university-based institutional repository is a set of services that a university offers to the members of its community 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. Khan and Kumar Das (2008) stated that "A digital repository is one where digital content, assets, are stored and can be searched and retrieved for later use." Dhanavandan (2014) found the recent trends and growth of Institutional Repository (IR) in south Asian countries. An institutional repository is an online locus for collecting, preserving, and disseminating - in digital form - the intellectual output of an institution, particularly a research institution. South Asian countries like India,

Pakistan, Nepal, Bangladesh and Sri Lanka have institutional repositories in their respective libraries but Bhutan and Maldives are not having any repositories. Among the five countries, India 62, Bangladesh 7, Pakistan 3, Sri Lanka 2 and Nepal 1 institutional repositories have developed respectively. Dhanavandan (2014) identified the repositories for library and information science around the world in aspects such as the types of repositories, collection sizes, material types, content, languages, and software. Among 120 repositories, the United States has 17 (14.17%) repositories for LIS, followed by the United Kingdom (12, 10.00%), and Germany (9, 7.50%). India is in the fifth position with 5 (4.17%) repositories on LIS.

5. NEED FOR THE STUDY

The current scenario of Institutional Repositories in BRICS Countries has been examined and to discuss about the assessment of the repositories. There is a need to discuss about the Institutional Repositories in BRICS Countries.

6. OBJECTIVES OF THE STUDY

The following objectives are framed

1. To find out strength of IRs in BRICS Countries
2. To identify the various software using in IRs
3. To classify the strength of Records available IRs in BRICS Countries
4. To identify the languages are used in IRs
5. To find out the status of updating their records in IRs by BRICS Countries

7. METHODOLOGY

This study is discussed about the growth and development of the Institutional repositories available in BRICS Countries. For this the required data has been collected from the open access directory from <http://www.openoar.org/> on 1st December, 2014. It was analysed by using SPSS statistical tools.

8. ANALYSIS AND INTERPRETATION

The main aim of the study is discussed about the growth and development of the Institutional Repositories from BRICS Countries are registered in the DOAR. The appropriate sources are collected from DOAR directory. The strength of the institutional repositories and the number of records were discussed in the table-1

Table 1: Country Wise Distribution of Institutional Repositories in BRICS Countries

Sl.No	Country	No. of IRs	Percentage	No. of Records
1	Brazil	84	34.71	11,17,688
2	China	39	16.12	7,12,190

3	India	68	28.10	4,52,644
4	Russia	22	9.09	84,657
5	South Africa	29	11.98	1,99,370
	Total	242	100.00	25,66,549

The table 1 shows the country wise distribution of the institutional repositories and their number of records available in BRICS countries. As per the data available in the Open DOAR, 242 repositories available among them, 84(34.71%) repositories from Brazil, 39(16.12%) from China, 68(28.10%) repositories from India, 22(9.109%) repositories from Russia and 29(11.98%) repositories from South Africa. Apart from that, at present 25, 66,549 records are available from 242 repositories in BRICS countries. Which is 11,17,688 records from Brazil, 7,12,190 records from China, 4,52,644 records from India, 84,657 records from Russia and 84,657 records from South Africa.

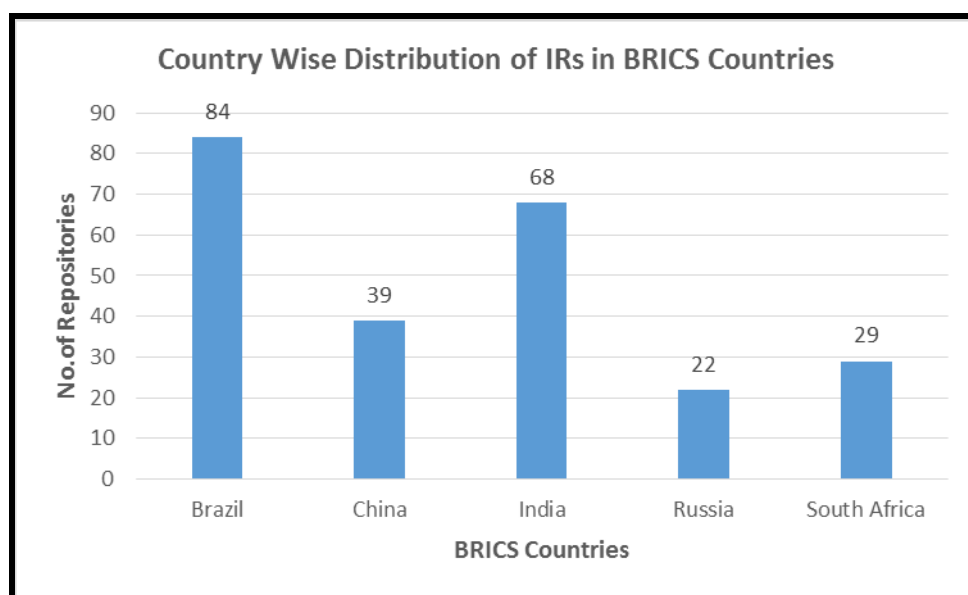


Fig.1: Country Wise Distribution of Institutional Repositories in BRICS Countries

Table 2: Languages Wise Distribution of IRs in BRICS Countries

Sl.No.	Languages	No. of IRs	Percentage
1	English	82	33.88
2	Portuguese	61	25.21
3	Chinese; English	29	11.98
4	Russian	16	6.61
5	Portuguese; English	13	5.37
6	Portuguese; Spanish; English	9	3.72
7	Chinese	8	3.31
8	English; Russian	4	1.65
9	English; Afrikaans	3	1.24
10	English; Hindi	2	0.83

11	English; Hindi; Gujarati	2	0.83
12	English; Hindi; Kannada	2	0.83
13	English; Arabic	1	0.41
14	English; Bengali	1	0.41
15	English; Gujarati	1	0.41
16	English; Hindi; Arabic; Persian	1	0.41
17	English; Malayalam	1	0.41
18	English; Tamil	1	0.41
19	Hindi; English	1	0.41
20	Marathi	1	0.41
21	Sanskrit; Malayalam; Hindi; English	1	0.41
22	Spanish	1	0.41
23	Afrikaans; English; Sesotho	1	0.41
	Total	242	100.00

Table 2 indicates the distribution languages are used in the institutional repositories available in BRICS Countries. Among the 242, 82(33.88%) repositories are available only in English language and 61(25.21%) repositories are using Portuguese language which is in the second position in BRICS Countries. But most of the repositories are using English is one of the language. It is pointed out that only one is available from Marathi (India) and Spanish.

Table 3: Software Wise Distribution of Institutional Repositories in BRICS Countries

Sl. No.	Software	No. of IRs	Percentage	Cumulative Percentage
1	Not Specified	11	4.55	4.5
2	Architexturez	1	0.41	5.0
3	CALIBRE	1	0.41	5.4
4	ContentPro	2	0.83	6.2
5	Corisco	1	0.41	6.6
6	DigiTool	1	0.41	7.0
7	Drupal	2	0.83	7.9
8	DSpace	177	73.14	81.0
9	EPrints	24	9.92	90.9
10	ETD-db	3	1.24	92.1
11	Greenstone	1	0.41	92.6
12	HTML	1	0.41	93.0
13	http://ahero.uwc.ac.za/lib/oai/oai2.php	1	0.41	93.4
14	Maxwell	1	0.41	93.8
15	Nitya	1	0.41	94.2
16	Nou-Rau	1	0.41	94.6
17	OAI-CL	1	0.41	95.0
18	SciELO	5	2.07	97.1

19	Socionet	3	1.24	98.3
20	TEDE	4	1.65	100.0
	Total	242	100.00	

Table 3 indicates software used in Institutional Repositories available in BRICS countries. Among the 242 repositories, 177(73.14%) repositories are using DSpace software which is in the first position and the Eprints is in the second position with 24(9.91%) repositories. And followed by 5(2.07%) repositories are using SciELO it is third position and 4 (1.65%) repositories re using TEDE software is in the fourth position. It is pointed out that among the 242, 11(4.55%) repositories are not mentioned their specific software in the sources.

Table 4: Subject Wise Distribution of IRs in BRICS Countries

Sl.No	Subjects	No. of IRs	Percentage
1	Agriculture, Food and Veterinary	4	1.65
2	Agriculture, Food and Veterinary; Biology and Biochemistry; Ecology and Environment; Computers and IT	10	4.13
3	Architecture	1	0.41
4	Arts and Humanities General; Fine and Performing Arts	1	0.41
5	Biology and Biochemistry	3	1.24
6	Biology and Biochemistry; Ecology and Environment; Geography and Regional Studies	5	2.07
7	Biology and Biochemistry; Health and Medicine	2	.83
8	Business and Economics; Education; Management and Planning	1	0.41
9	Chemistry and Chemical Technology; Physics and Astronomy; Mechanical Engineering and Materials	15	6.20
10	Computers and IT	3	1.24
11	Earth and Planetary Sciences; Mathematics and Statistics	2	0.83
12	Ecology and Environment; Geography and Regional Studies	6	2.48
13	Education	2	0.83
14	Education; Law and Politics; Management and Planning	1	0.41
15	Electrical and Electronic Engineering	1	0.41
16	Geography and Regional Studies; History and Archaeology	2	0.83
17	Health and Medicine	6	2.48
18	Health and Medicine; Business and Economics; Education	1	0.41
19	Health and Medicine; Psychology	2	0.83
20	History and Archaeology	1	0.41
21	History and Archaeology; Language and Literature; Library and Information Science	1	0.41
22	Law and Politics	6	2.48
23	Library and Information Science	2	0.83

24	Management and Planning	2	0.83
25	Mathematics and Statistics	2	0.83
26	Mathematics and Statistics; Law and Politics	1	0.41
27	Mechanical Engineering and Materials	1	0.41
28	Multidisciplinary	124	51.24
29	Multidisciplinary; Education	1	0.41
30	Physics and Astronomy	6	2.48
31	Physics and Astronomy; Computers and IT; Management and Planning	2	0.83
32	Psychology	1	0.41
33	Science General	12	4.96
34	Social Sciences General	4	1.65
35	Social Sciences General; Library and Information Science	1	0.41
36	Technology General	6	2.48
37	Technology General; Library and Information Science	1	0.41
	Total	242	100.00

Table 4 shows the subject wise distribution of institutional repositories available BRICS Countries. Among the 242, 124(51.24%) repositories are in Multidisciplinary subject which is in the first rank and 15(6.20%) repositories are mentioned their subject for Chemistry and Chemical Technology; Physics and Astronomy; Mechanical Engineering and Materials it is in the second position. And followed by 12(4.96%) repositories are mentioned science general is their subject and which is in the third position and 10(4.13%) repositories are for Agriculture, Food and Veterinary; Biology and Biochemistry; Ecology and Environment; Computers and IT. It is pointed out that 6 (2.48%) repositories available for Law and Politics.

Table 5: Contents Wise Distribution of IRs in BRICS Countries

Sl. No.	Contents	No. of IRs	Percentage	Cumulative Percentage
1	Articles	27	11.16	11.16
2	Articles; Books	2	.83	11.98
3	Articles; Conferences	4	1.65	13.64
4	Articles; Conferences; Books	1	0.41	14.05
5	Articles; Conferences; Theses	1	0.41	14.46
6	Articles; Conferences; Theses; Books	1	0.41	14.88
7	Articles; Conferences; Theses; Books; Patents	2	0.83	15.70
8	Articles; Conferences; Theses; Unpublished; Books; Multimedia; Special	1	0.41	16.12
9	Articles; Conferences; Unpublished; Books; Multimedia	2	0.83	16.94
10	Articles; Learning Objects; Multimedia; Special	1	0.41	17.36
11	Articles; Multimedia	1	0.41	17.77
12	Articles; References	3	1.24	19.01
13	Articles; References; Books; Software	1	0.41	19.42

14	Articles; References; Conferences; Theses; Books	43	17.77	37.19
15	Articles; References; Conferences; Theses; Unpublished	1	0.41	37.60
16	Articles; References; Conferences; Theses; Unpublished; Books	1	.41	38.02
17	Articles; References; Conferences; Theses; Unpublished; Books; Special	1	0.41	38.43
18	Articles; References; Conferences; Theses; Unpublished; Multimedia; Patents	29	11.98	50.41
19	Articles; References; Theses; Unpublished	1	0.41	50.83
20	Articles; References; Theses; Unpublished; Books	1	0.41	51.24
21	Articles; Theses	9	3.72	54.96
22	Articles; Theses; Books	22	9.09	64.05
23	Articles; Theses; Multimedia	21	8.68	72.73
24	Articles; Theses; Patents	1	0.41	73.14
25	Articles; Theses; Unpublished; Books; Datasets	1	0.41	73.55
26	Articles; Theses; Unpublished; Books; Learning Objects	14	5.79	79.34
27	Articles; Unpublished	1	0.41	79.75
28	Books	4	1.65	81.40
29	Conferences	1	0.41	81.82
30	Conferences; Unpublished; Datasets; Special	6	2.48	84.30
31	Datasets	2	0.83	85.12
32	Multidisciplinary	1	0.41	85.54
33	Multimedia; Special	2	0.83	86.36
34	References; Theses; Multimedia	2	0.83	87.19
35	Theses	26	10.74	97.93
36	Theses; Books	2	0.83	98.76
37	Theses; Multimedia	3	1.24	100.00
	Total	242	100.00	

Table 5 indicates the content wise distribution of 242 number of institutional repositories which are available in the BRICS Countries which consists of, 43(17.76%) repositories are mentioned their content for Articles/References/Conferences/Theses/ /Books and 29(11.98% repositories for Articles; References; Conferences; Theses; Unpublished; Multimedia; Patents which is second position . It is pointed out that 26(10.74%) repositories are available for Theses purposes and 22(9.09%) repositories for the content of Articles; Theses; Books.

Table 6: Classification of Records of Available in IRs in BRICS Countries

Sl.	Size	Brazil	China	India	Russia	South Africa	Total
1	Not Specified	8(3.31)	2(0.83)	2(0.83)	2(0.83)	1(0.41)	15(6.20)
2	1-50000	44(18.18)	14(5.79)	46(19.01)	14(5.79)	18(7.44)	136(56.20)
3	5001-10000	11(4.55)	9(3.72)	9(3.72)	3(1.24)	2(0.83)	34(14.05)
4	10001-20000	9(3.72)	7(2.89)	3(1.24)	3(1.24)	6(2.48)	28(11.57)
5	20001-30000	2(0.83)	2(0.83)	5(2.07)	0	0	9(3.72)
6	30001-40000	0	0	1(0.41)	0	1(0.41)	2(0.83)
7	40001-50000	4(1.65)	0	1(0.41)	0	0	5(2.07)
8	50001-60000	2(0.83)	0	0	0	1(0.41)	3(1.24)
9	60001-70000	0	2(0.83)	0	0	0	2(0.83)
10	70001-80000	1(0.41)	1(0.41)	0	0	0	2(0.83)
11	80001-90000	1(0.41)	0	0	0	0	1(0.41)
12	90001-100000	0	0	1(0.41)	0	0	1(0.41)
13	Above 100001	2(0.83)	2(0.83)	0	0	0	4(1.65)
	Total	84(34.71)	39(16.12)	68(28.10)	22(9.09)	29(11.98)	242(100)

(Figures in parentheses denote percentage)

Table 6 indicates the institutional repositories in BRICS Countries were classified based on the no. of records available in the repositories. The no. of records are classified under following frequency like that upto 5000, 5001-10000, 10001-20000, 20001-30000, 30001-40000, 40001-50000, 50001-60000, 60001-70000, 70001-80000, 80001-90000, 90001-100000 and above 100000 records which are available in the sources. Among the 242 repositories, 136(56.20%) repositories has below 5000 records which is 44(18.18%) repositories from Brazil, 14(5.79%) repositories from China, 46(19.01%) repositories from India, 14(5.79%) repositories from Russia and 18(7.44%) repositories from South

Africa. And 34(14.05%) repositories has more than 5000 but below 10000 records and 28(11.57%) repositories has more than 10000 but below 20000 records. It is found that 4(1.65%) repositories are having more than 100000 records in their collections which is 2(0.83%) repositories are equally from Brazil and China. It is pointed out that among the 242, 15(6.20%) repositories are not specified the strength of the collection of the Institute.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.188	44	.140
Likelihood Ratio	57.298	44	.086
N of Valid Cases	227		

The Chi-square test is applied for discussion of the number of records and their strength are available in the institutional repositories in BRICS Countries. The computed Chi-square value is 54.188 and the degrees of freedom value is 44 which is higher than its tabulated value at 5 percent level of significance. Hence the difference among the institutional repositories in classification of records is statistically identified as significant.

Table 7: Status of Updating Their Records in IRs in BRICS Countries

Sl. No.	Last Updating	No. of IRs	Percentage	Cumulative Percentage
1	2014-11	168	69.42	69.42
2	2014-10	7	2.89	72.31
3	2014-09	3	1.24	73.55
4	2014-08	7	2.89	76.45
5	2014-07	8	3.31	79.75
6	2014-06	1	0.41	80.17
7	2014-05	2	0.83	80.99
8	2014-03	7	2.89	83.88
9	2014-01	2	0.83	84.71
10	2013-12	1	0.41	85.12
11	2013-11	3	1.24	86.36
12	2013-10	5	2.07	88.43
13	2013-08	1	0.41	88.84
14	2013-07	2	0.83	89.67
15	2013-02	1	0.41	90.08
16	2013-01	1	0.41	90.50
17	2012-10	2	0.83	91.32
18	2012-06	1	0.41	91.74
19	2012-02	1	0.41	92.15
20	2012-01	1	0.41	92.56
21	2011-12	1	0.41	92.98

22	2011-04	1	0.41	93.39
23	2011-03	1	0.41	93.80
24	0	15	6.20	100.00
	Total	242	100.00	

The table 7 indicates the status and the last updating of the records and maintenance of the Institutional repositories are available in the BRICS Countries. Among the 242 repositories, 168(69.42%) repositories are updated their status and records in the end of November 2014. Three repositories are not updated after 2011 but 15(6.20%) repositories are not specified.

9. FINDINGS

- ✚ Among the 242 repositories, 177(73.14%) repositories are using DSpace software which is in the first position and the Eprints is in the second position with 24(9.91%) repositories
- ✚ Among the 242, 124(51.24%) repositories are in Multidisciplinary subject which is in the first rank.
- ✚ It is found that 4(1.65%) repositories are having more than 100000 records in their collections which is 2(0.83%) repositories are equally from Brazil and China.
- ✚ Among the 242 repositories, 168(69.42%) repositories are updated their status and records in the end of November 2014

10. CONCLUSION

An Institutional Repositories are produced the digital output of the publications, theses, articles, learning object and multimedia to the users community. Among the BRICS the Countries Brazil has more repositories when comparing other countries. The BRICS Countries make the some initiatives to create more repositories and upload the maximum number of records.

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