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Institutional Repository in Open DOAR: Status Quo India

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Abstract

Purpose
Up to the 2005 theses, dissertations, research papers and rare collection in most of the Indian libraries, are kept in closed access and it is very difficult to the researchers to access them as a reference source for the further study as well as to avoid duplication, to avoid plagiarism to maintain research ethics in the research, but after that in India UGC and Many higher/research education institutions taking lead to develop Institutional repositories (IR) for Collect, Manage, Disseminate, and Preserve scholarly work created by the Teachers and researchers.

Design/methodology/approach
Total 84 Institutional Repositories (IR) was selected and browsed for the present paper. The data related to the institutional repositories have been collected from Opendoar and ROAR website. The data is analyzed based on selected parameters, like Type of IR, Status of Institutional Repository, software used for repositories, total no of items, subject covered, languages and issues and barriers in self archiving approach of researchers in India.

Findings
This research paper presents Indian scenario in developing the Institutional Repositories. Total 84 Institutional Repositories in India have been analyzed based on selected study criteria like Type of IR, Present Status of Institutional Repository, software used for repositories, total no of items available in IR, subject wise analysis, language wise analysis.

Originality/value
One of the first study to report IRs in Open DOAR and present Status.

Key words: *National Policy Framework, , Electronic Theses and Dissertations (ETD), India Institutional Repository, Open Access, OpenDOAR.*

Introduction:-

Higher education institutions all over the world are experiencing the necessity of managing their education, research and resources in a more effective way. Open access Institutional Repositories(IR) are the best way through which the institutional outputs will open up to the world, IR helps in maximizing the visibility and impact of these outputs as a result enabling and encouraging interdisciplinary approaches to research. Due to various benefits of institutional repositories, various institutions are developing their own repositories. Up to the 2005 theses collection in most of the Indian libraries,

are kept in closed access and it is very difficult to the researchers to access them as a reference source for the further study as well as to avoid duplication in the research. (Sengupta, 2012).

Indian national agencies like University Grants Commission (UGC), Indian Council of Agricultural Research (ICAR), are initiating several steps to promote the ETD culture by providing, policy guidelines, required infrastructure and imparting training to people involved. Organizations like INFLIBNET and others have already created sizeable online database containing metadata and are accessible to everyone. Major projects like Vidyanidhi have demonstrated the need and feasibility of creating ETD databases at the national level. Some of the leading universities and institutions have already taken a plunge and started creating ETD collection. Quite a few subject discipline based self archives have sprung up during the last few years who also cover ETDs. The ETD momentum is fast catching up and one can now see increasing visibility for the Indian academic research. (Kumbar T.S., 2009).

Review of Literature:-

For the present study research oriented practical papers and University Grants Commissions official circulars/notifications and regulations referred as supporting documents for the present study. Like Sengupta, (2012. Kalbande, (2012). Kumbar T.S.,(2009),Bandra,(2002), Hirwade,(2011), Lihitkar, Shalini (2009), UGC Regulations (2005), UGC Regulations (2009),UGC Regulations (2016),UGC Regulation (2018). All referred papers documents acknowledged in references.

Research Methodology

Total 84 Institutional Repositories (IR) was selected and browsed for the present paper. The data related to the institutional repositories have been collected from Opendoar and ROAR website. The data is analyzed based on selected parameters, like Type of IR, Status of Institutional Repository, software used for repositories, total no of items, subject covered, languages and issues and barriers in self archiving approach of researchers in India.

Objectives of the study

- To find out type of Institutional Repositories,
- To find the present Status of Institutional Repository,
- To find software used for repositories,
- To find out total no of items available in IR,
- To identify subject covered.
- To identify the languages used in IRs.

Scope of the Present Study:

The data for the present study was collected exclusively from the “Directory of Open Access Repositories”, popularly known as OpenDOAR (http://v2.sherpa.ac.uk/opendoar/) developed by Indian institutions. 85 Indian Open Access Repositories identified in OpenDOAR during the period March 01-24, 2019. Out of 85 total 84 were found fully functioned and 01 IR withdrawn from OpenDOAR Directory. Therefore 84 IRs studied in this paper.

Data Analysis and Interpretation:-

Table No 1 Year wise growth of IRs in India

Sr.No	Year	No of OARs	Percentage
1	2000-2004	0	0.00
2	2005-2010	34	40.48
3	2011-2015	38	45.24
4	2016-2019	12	14.29
	Total	**84**	**100.00**

Table 1 illustrates the growth of Indian open access repositories since 2000. Before 2005 there is no any IR available in India. As per the data analysis and results maximum IRs developed in 2011-2015 i.e 38 (45.24%), followed by 2005-2010 i.e 34 (40.48%) and in 2016-2019 only 12 (14.29%) institutional repository developed by Indian institutions.

Table No 2 Types of Open Access Repositories in India

Sr. No	Type of OARs	To No	Percentage
1	Institutional	72	85.71
2	Disciplinary	8	9.52
3	Aggregating	3	3.57
4	Governmental	1	1.19
	Total	**84**	**100.00**

Table no 2 highlighted the types of OARs in India and out of total of 84 open access repositories, 72 (85.71%) are institutional , 08 (9.52%) are disciplinary. 03 open access repositories are aggregating and 01 hosted by governmental institution.

Table No 3 Open Access Repositories in India by Software Type

Sr.No	Name of Software	Total No of OARs	Percentage
1	Dspace	49	58.33
2	eprints	27	32.14
3	HTML	2	2.38
4	Architexturez	1	1.19
5	CALIBRE	1	1.19
6	Drupal	1	1.19
7	Greenstone	1	1.19
8	Metastudio	1	1.19
9	Nitya	1	1.19
	Total	**84**	**100.00**

Table no 3 indicates the nine open source / commercial and in-house software's are used by the host organizations or institutions to create Open Access repositories. 49 (58.33%) open access repositories in India use DSpace, followed by 27 (32.14%) used eprints, 2 institutions used HTML, other institutions used Architexturez, CALIBRE, Drupal, Greenstone, Metastudio and Nitya software respectively.

Table No 4 Language wise Analysis of Open Access Repositories in India

Sr.No	Language	No of OARs	Percentage
1	English	84	100.00
2	Hindi	10	11.90
3	Gujarati	3	3.57
4	Arabic	2	2.38
5	Kannada	2	2.38
6	Malayalam	2	2.38
7	Marathi	2	2.38
8	Bengali	1	1.19
9	Farsi	1	1.19
10	Other	2	2.38

English, being an international language, is the most preferred one for the open access repositories in India. However, use of other national languages and, in some cases, even regional languages helps in making an open access repository more popular among the research community of a particular region or country, ensuring maximum utilization of the repository holdings. There are many repositories that use more than one language as an interface. Table 4 shows the detailed representation of languages used in the open access repositories in India. 100% IR used English language, followed by Hindi with 11.90%, Gujrati, Marathi, Bengali, Farsi language also used for developing collection in IRs.

Table No 5 State Wise analysis of OARs

Sr.No	State	No of OARs	Percentage
1	Maharashtra	16	19.05
2	Delhi	15	17.86
3	Karnataka	11	13.10
4	Gujarat	7	8.33
5	Kerala	6	7.14
6	Telangana	5	5.95
7	Uttar pradesh	4	4.76
8	Odisha	3	3.57
9	Tamil Nadu	3	3.57
10	Uttarakhand	3	3.57
11	West Bengal	3	3.57
12	Goa	2	2.38
13	Punjab	2	2.38
14	Chandigarh	1	1.19
15	Haryana	1	1.19
16	Jammu and Kashmir	1	1.19
17	Jharkhand	1	1.19
	Total	**84**	**100.00**

Table No.5 highlights the state wise development of OARs and it is reveals that Maharashtra on rank first with 16 (19.05%) in developing IRs, followed by Delhi State with 15 (17.86%) on rank two, Karnatka state on third rank with 13.10% and Chandigarh, Haryana, Jammu and Kashmir and Jharkhand sates having only one OARs respectively.

Table No 6 Open Access Repositories in India by Subject wise

Sr. No	Name of Subject	No of OARs	Percentage
1	Multidisciplinary	42	50.00
2	Technology	12	14.29
3	Health and Medicine	9	10.71
4	Chemistry and Chemical Technology	9	10.71
5	Computers and IT	8	9.52
6	Physics and Astronomy	8	9.52
7	Mechanical Engineering	7	8.33
8	Science General	7	8.33
9	Biology and Biochemistry	7	8.33
10	Electrical and Electronic Engineering	6	7.14
11	Library and Information Science	6	7.14
12	Agriculture	5	5.95
13	Ecology	5	5.95
14	Mathematics and Statistics	5	5.95
15	Social Sciences	5	5.95
16	Earth Sciences	4	4.76
17	Civil Engineering	3	3.57
18	Management	3	3.57
19	Economics	2	2.38
20	Politics	2	2.38
21	Psychology	2	2.38
22	Architecture	1	1.19
23	Arts and Humanities	1	1.19
24	Geography	1	1.19
25	History	1	1.19
26	Language	1	1.19
27	Education	1	1.19

Table No. 6 shows the analysis of subjects listed in Institutional Repositories (IRs) in India. 42 (50 %) IRs covers the other interdisciplinary subject's education, computer, IT, Health and Medicine, Business and Economics, science, social-science and Management. 12 (14.29%) institutions posted their institutional repositories on Technology. 9 (10.71%) IRs posted Health and Medicine and Chemistry and Chemical Technology subjects in repositories.

Table No 7 Total No of Records available in Indian OARs

Sr.No	Name of Open Access Repository	Total No of Record
1	ShodhGanga: A reservoir of Indian theses	220039
2	KrishiKosh	130760
3	Indian Academy of Sciences: Publications of Fellows	106351
4	Open Access Repository of IISc Research Publications	47780
5	Archives of Indian Labour	42845
6	NOPR	40470
7	Digital repository of West Bengal Public Library Network	33905
8	eGyankosh	31971
9	DSpace@GIPE	25449
10	Osmania University Digital Library [OUDL]	24507
11	Dspace at IIT Bombay	20783
12	Institutional repository@VSL	18554
13	Social Science Cyber Library	14782
14	KRISHI Publications and Data Repository	14301
15	National Repository of Open Educational Educational Resources	13780
16	Eprints@CMFRI	12536
17	University of Mysore - Digital Repository of Research, Innovation and Scholarship (ePrints@UoM)	12372
18	AMU Repository (Knowledge Repository)	10930
19	DigitalLibrary@CUSAT	10058
20	ICRISAT Open Access Repository	9702
21	IACS Institutional Repository	7941
22	DRS at National Institute Of Oceanography	7665
23	Indian Institute of Astrophysics Repository	7071
24	ethesis@nitr	6879
25	EPrints@IITD	6776
26	Eprint@NML	6555
27	National Aerospace Laboratories Institutional Repository	6094
28	ePrints@Bangalore University	6043
29	RRI Digital Repository	5941
30	DSpace at Vidyanidhi	5482
31	DSpace@TU	5135
32	Dyuthi	4325
33	Research Archive of Indian Institute of Technology Hyderabad	4142
34	Electronic Theses and Dissertations at Indian Institute of Science	4102
35	DSpace at IUCAA	3912
36	RAIITH	3822
37	E Knowledge Center	3455
38	Vidya Prasarak Mandal - Thane	3144
39	ePrints@MoES:Open Access Digital Repository	3118
40	OpenMED@NIC	2904

41	Dspace@NITR	2850
42	IR@CECRI	2582
43	Mahatma Gandhi University Theses Online	2550
44	IR@NPL	2425
45	DIR@IMTECH	1800
46	DSpace@INFLIBNET	1777
47	INFLIBNET's Institutional Repository	1777
48	Dspace @ Vidyasagar University	1427
49	DSpace at Indian Institute of Geomagnetism	1140
50	Digital Knowledge Repository of Central Drug Research Institute	1140
51	Knowledge Repository Open Network	1128
52	Bhagirathi	1102
53	Etheses - A Saurashtra University Library Service	1064
54	NIRT Institutional Repository	962
55	Institutional Repository of the Anjuman-I-Islam's Kalsekar Technical Campus	940
56	Institutional Repository of Intectual Contributions of Delhi Technological University	841
57	DSpace at M S University	834
58	DSpace at Indian Institute of Management Kozhikode	810
59	ARIES, Digital Repository	807
60	Learning Resource Centre: Digital Repository of Chitkara University	780
61	Open Access to Odia Books	779
62	Management Development Institute - Open Access Repository	649
63	Institutional Repository@CSIO	600
64	National Science Digital Library	579
65	Librarians' Digital Library	510
66	ePrints@ATREE	492
67	E-Repository@IIHR	486
68	Indian Institute of Petroleum Institutional Repository	481
69	DSpace@IMSC	365
70	Digital Repository of Smt. Akkatai Ramgonda Patil Kanya Mahavidyalaya, Ichalkaranji	355
71	Kautilya Digital Repository at IGIDR	334
72	WeSchool Digital Repository	241
73	Eprints@IARI	230
74	Architexturez South Asia	200
75	DeepBlue Knowledge Repository@PDPU	182
76	Indian Institute of Management Kozhikode Scholarship Repository	151
77	DSpace @ GGSIPU	135
78	Eprints @MDRF	100
79	OneWorld South Asia Open Archive Initiative	91
80	Eprints@SBT MKU	89

81	Bhogawati Mahavidyalaya Institutional Repository	62
82	dspace @ sdmcet	60
83	IR@Goa University	Not Mentioned
84	Indian Institute of Management Kozhikode Digital Library	Not Mentioned
	Total	**982288**

Item included in IR has been shown in Table No. 7. Maximum numbers of items are posted by ShodhGanga: A reservoir of Indian theses (220039), followed by KrishiKosh (130760), Indian Academy of Sciences: Publications of Fellows on third rank with (106351) documents posted in IR. Total **982288** documents available in 84 Indian institutional repositories. Out of 84 IRs, 2 institutional Repositories were not provided the total number of items included in Institutional Repositories.

Table No 8 ETD initiatives in India

Sr. No	**Name of Open Access Repository**	**No of ETDs Available**
1	ShodhGanga: A reservoir of Indian theses	220039
2	KrishiKosh	25800
3	Osmania University Digital Library [OUDL]	10575
4	AMU Repository (Knowledge Repository)	10252
5	ethesis@nitr	6879
6	DSpace at Vidyanidhi	5482
7	DSpace@TU	5068
8	EPrints@IITD	4887
9	Electronic Theses and Dissertations at Indian Institute of Science	4102
10	Dyuthi	2682
11	Mahatma Gandhi University Theses Online	2550
12	RAIITH	1183
13	Research Archive of Indian Institute of Technology Hyderabad	1183
14	Etheses - A Saurashtra University Library Service	1063
15	DSpace at M S University	755
16	Knowledge Repository Open Network	684
17	Eprints@CMFRI	540
18	Institutional repository@VSL	365
19	DSpace@GIPE	343
20	RRI Digital Repository	241
21	Digital Knowledge Repository of Central Drug Research Institute	145
22	Dspace @ Vidyasagar University	128
23	E-Repository@IIHR	95
24	Eprints@IARI	47
25	Eprint@NML	46

26	IR@CECRI	46
27	Kautilya Digital Repository at IGIDR	41
28	Bhogawati Mahavidyalaya Institutional Repository	17
29	DSpace at Indian Institute of Management Kozhikode	17
30	Indian Institute of Management Kozhikode Scholarship Repository	17
31	ARIES, Digital Repository	12
32	DSpace@IMSC	05
33	Learning Resource Centre: Digital Repository of Chitkara University	05
34	Librarians' Digital Library	05
35	Digital Repository of Smt. Akkatai Ramgonda Patil Kanya Mahavidyalaya, Ichalkaranji	03
36	IACS Institutional Repository	03
37	Eprints @MDRF	02
38	DigitalLibrary@CUSAT	01
39	***46 IRs have 00 ETDs***	***00***
	Total	**305308**

Table No. 8. Shows the ETD initiatives taken by various institutions in India and total e-thesis available in ETDs. Maximum numbers of ETDs are available in ShodhGanga: A reservoir of Indian theses (220039), followed by KrishiKosh (25800), Osmania University Digital Library [OUDL] on third rank with (10575), AMU Repository (Knowledge Repository) on fourth rank with (10252) e-thesis posted in IR. Total **305308** e-theses available in Indian ETDs. Out of 84 IRs, 46 institutional Repositories were not uploaded any e-thesis in Institutional Repositories up to 29th March 2019.

Conclusion

Institutional Repository is a new technique for e-collection development, managing documents in digital form. By using this repository the institution can offer service like dissemination of information, access to preserve and use information and as well as content submission and organization of information. Libraries and LIS professional should have to take part in Institutional Repositories in developing successful and valuable repositories for their institution in India.

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