

# OPEN SOURCE SOLUTION BASED INDIAN ETD REPOSITORIES: A STATUS REPORT

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ETD repositories of India are based on institutional level and national level. Shodhganga a national level open access ETD repository set-up using open source software (OSS) called DSpace holds the largest number of full text theses. ETD repositories of some institutions are based either on open source software's or commercial software or in-house developed software. Some institutional efforts includes initiatives by Indian Institutes of Technology's (IITs), National Institute of Technology's (NIT's), Council of Scientific and Industrial Research (CSIR) labs, and by some universities and institutions. The Directory of Open Access Repository (OpenDOAR) displays 39 results upon search execution by content type - Theses, whereas Registry of Open Access Repository (ROAR) displays 11 results upon search execution by e-Theses repository type as on 29<sup>th</sup> March 2018. However the results displayed are not exhaustive as the registration is voluntary and not mandatory in OpenDOAR and ROAR. The objective of the current study undertaken is to reports the status of open access full text Open Source Solution based ETD repositories exclusive of Institutional Repository in which Theses are part of the collections. The methodology used for this study includes visiting of websites of ETD repositories listed on OpenDOAR and ROAR to ascertain the working status of such repositories and the results are reported. The finding shows that at National level only Shodhganga is in active state and at Institutional level only 3 exclusive open access ETD repositories are active.

**Keywords:** ETD repositories, Open Source Software, Shodhganga, OpenDOAR, ROAR.

## INTRODUCTION

Open Source Solution based Open Access (OA) repositories offers free access to ETDs (Electronic Theses and Dissertation) over the Internet. Open Source Software's (OSS) like DSpace and Eprints are most widely used for archiving ETDs in India. Shodhganga – a National reservoir of Indian Theses is using DSpace software and it offers simple search, advanced search, subject search and Google search options. It also provides search and browse by Universities and Departments, Upload date, Researcher/Guide, Title and Keywords. DSpace being an OSS allows customization and modification. Eprints another OSS with a strong community of developers, librarians and users is popular repository software used for archiving ETDs in India. Eprints provides facility for simple and advanced search. The scope of the study is limited to Open Source Solution based Open Access (OA) full text exclusive ETD repositories. The objective of the current study undertaken is to reports the status of open access full text Open Source Solution based Indian ETD repositories exclusive of Institutional Repository in which Theses are part of the collections. The problem is lack of ETD initiatives in India at Institutional level as listed on OpenDOAR and ROAR. Hirwade (2011) in her paper mentioned that there are 47 digital repository initiatives from India have been reported in OpenDOAR and 59 initiatives have been reported in ROAR. An ETD initiative at National levels includes 6 repositories hosted by various institutions/organizations, where as ETD initiatives at Institutional level includes initiatives by 17 institutions/organizations. Sengupta (2012) in her paper mentioned about the data collection from ROAR and OpenDOAR directories, the researcher found 25 E-Theses repositories in India. The oldest E-Theses repositories registered in ROAR is ETD@IISc in

2005. Her paper has attempted to overview the current status of E-Theses repositories in the world with special reference to India. Gupta and Gupta (2014) in their paper mentioned that there are 31 theses repositories in India as reported by OpenDOAR. Their paper evaluates and analyses about the number of ETDs deposited in some prominent Indian ETD repositories and reports about their accessibility status. Gayan (2014) in her paper mentioned that there are 59 ETD repositories registered in India in OpenDOAR and 8 ETD repositories have been registered in ROAR. She identified 2 ETD initiatives at National level i.e. Shodhganga and Vidyanidhi, whereas at Institutional level she identified 8 initiatives. Shrivastava and Gupta (2016) have explored cooperative ETD efforts in USA, UK, China and India and they have done a comparative analysis. They mentioned about Shodhganga – a national level ETD repository which has completed 7 years and the growth achieved by the repository year by year. It mentioned about 30% universities contribution in the last five years. They stated that ETD movement can be fostered if implemented at state level with national supported infrastructure. Panda (2016) discussed about Shodhganga ETD status, he has analysed the ETDs submitted year wise in Shodhganga from 2010 to 2015 (up to June). The data used for this purpose includes 217 universities who have signed MoU (Memoranda of Understanding) with INFLIBNET (Information and Library Network) which established Shodhganga, he finds that 40,175 theses have been deposited in the repository by the member universities. The current study undertaken studied the database of OpenDOAR and ROAR to report the working status of exclusive ETD repositories listed on it. The Directory of Open Access Repository (OpenDOAR) displays 39 results upon search execution by content type - Theses, whereas Registry of Open Access Repository (ROAR) displays 11 results upon search execution by e-Theses repository type, only 18 repositories are in active state out of 39 listed on OpenDOAR and 9 repositories are active out of 11 listed on ROAR. Vidyanidhi was the first national level ETD initiative in India which failed due to not having mandatory submission policy. Motivated to pursue ETDs in India, another project called Shodhganga was initiated (Cayabyab 2015,774). Institutional ETD repositories are hosted using DSpace and Eprints software, except Mahatma Gandhi University (MGU) and Aligarh Muslim University (AMU) which have used Nitya and CALIBER software respectively. The literature reviewed shows that at Institutional level the first ETD initiative is taken by IIT Bombay in 1999, followed by Indian Institute of Science (IISc) and Indian Institute of Astrophysics (IIA) in 2004, IIT Delhi, IIT Kanpur and National Chemical Laboratory (NCL), Pune in 2005, Indian Institute of Oceanography in 2006 (Ghosh n.d., 2), Mahatma Gandhi University in 2008, CSIR Explorations – Open Access Repository of Indian Theses and National Institute of Technology, Rourkela in 2009, Saurashtra University and University of Agricultural Sciences, Dharwad in 2012 (Gayan 2014,6) and by others so on. Institutional ETD repositories are hosted using DSpace and Eprints software, except Mahatma Gandhi University (MGU) and Aligarh Muslim University (AMU) which have used Nitya and CALIBER software respectively. The MGU online Theses Digital Library has used the software Nitya Digital Archive which was customized as per the need of Mahatma Gandhi University by Beehive DC Group and is a commercial software and is capable of search and retrieval using Malayalam and Tamil Script. (Pillai et al. 2015,11) (Sheeja and Cherukodan 2011, 160). Whereas a telephonic survey reveals that CALIBRE software is an OSS which is in an inactive state at present.

## **METHODOLOGY**

The methodology used for this study includes visiting of websites of ETD repositories listed on OpenDOAR and ROAR to ascertain the working status of such repositories. The research question is assessment of working status of ETD repositories listed on OpenDOAR and ROAR, and to find out Open Source Solution based exclusive ETD repositories present in

India. The research question is relevant to theory and practice as because it highlights the current state of ETD initiatives in India. OpenDOAR provides a quality-assured listing of Open Access repositories around the world. OpenDOAR is maintained by SHERPA services, based at Centre for Research Communication at the University of Nottingham. It is primary a service to enhance and support the academic and research activities of global community (<http://www.opendoar.org>). Whereas ROAR is hosted at University of Southampton and is funded by JISC, United Kingdom (UK). ROAR is part of EPrints.org (<http://roar.eprints.org/>).

## FINDINGS

The data analysis shows that only 18 Institutional ETD efforts are in active state at present out of 39 initiatives listed on OpenDOAR. Whereas only 9 repositories are in active state out of 11 repositories listed on ROAR. The finding shows that at National level only Shodhganga is in active state and at Institutional level only 3 exclusive open access ETD repositories are active. At a National level only Shodhganga qualified for current study, whereas at Institutional level only 2 Institutes qualified for the study which includes Saurashtra University and National Institute of Technology (NIT), Rourkela which provides open access to full text Theses. Table 1 shows the current status of ETD initiatives at Institutional Level as on 13<sup>th</sup> June 2018.

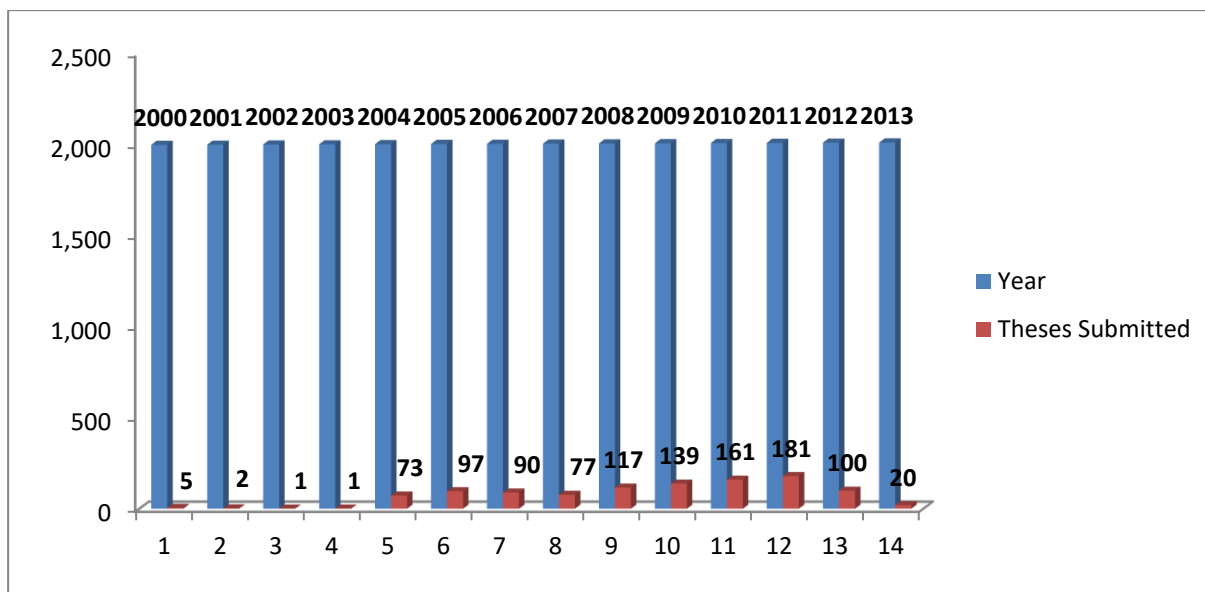
**Table 1: ETD initiatives at Institutional Level**

Sr . No.	Name of the Institute	Website	Software used	Repository	Theses uploaded
1	IIT, Hyderabad	<a href="http://raiith.iith.ac.in/view/type/thesis.html">http://raiith.iith.ac.in/view/type/thesis.html</a>	EPrints	OpenDOAR	922
2	IIT, Delhi	<a href="http://eprint.iitd.ac.in/dspace/handle/2074/378">http://eprint.iitd.ac.in/dspace/handle/2074/378</a>	DSpace	OpenDOAR & ROAR	4662
3	NIT, Rourkela	<a href="http://ethesis.nitrkl.ac.in/">http://ethesis.nitrkl.ac.in/</a>	EPrints	OpenDOAR & ROAR	439
4	CSIR	<a href="http://eprints.csirexplorations.com/">http://eprints.csirexplorations.com/</a>	EPrints	ROAR	987
5	Saurashtra University	<a href="http://etheses.saurashtrauniversity.edu/">http://etheses.saurashtrauniversity.edu/</a>	EPrints	OpenDOAR & ROAR	1064
6	Aligarh Muslim University	<a href="http://ir.amu.ac.in/view/type/">http://ir.amu.ac.in/view/type/</a>	EPrints	OpenDOAR	10115
7	Indian Institute of Science (IISc)	<a href="http://etd.ncsi.iisc.ernet.in/">http://etd.ncsi.iisc.ernet.in/</a>	DSpace	OpenDOAR & ROAR	3637
8	Mahatma Gandhi University	<a href="http://mgutheses.org/">http://mgutheses.org/</a>	Nitya	OpenDOAR & ROAR	2551
9	Krishikosh	<a href="http://krishikosh.egranth.ac.in/">http://krishikosh.egranth.ac.in/</a>	DSpace	OpenDOAR	74081
10	Goa University	<a href="http://irgu.unigoa.ac.in/">http://irgu.unigoa.ac.in/</a>	DSpace	OpenDOAR	742
11	Cochin	<a href="https://dyuthi.cusat.ac.in/xmlui/communit">https://dyuthi.cusat.ac.in/xmlui/communit</a>	DSpace	OpenDOAR	2535

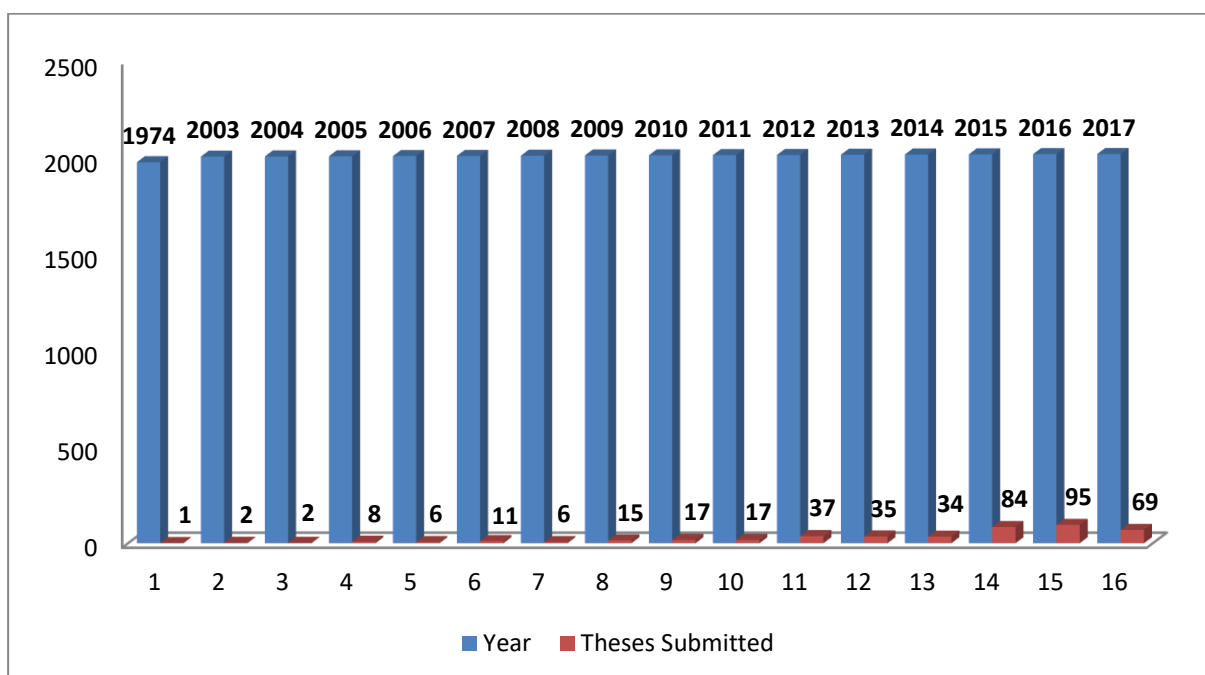
	University of Science and Technology	<a href="#">y-list</a>			
12	Central Marine Fisheries Research Institute	<a href="http://eprints.cmfri.org.in/view/doctype/thesis.html">http://eprints.cmfri.org.in/view/doctype/thesis.html</a>	Eprints	OpenDOAR	301
13	National Institute of Oceanography	<a href="http://drs.nio.org/drs/">http://drs.nio.org/drs/</a>	DSpace	OpenDOAR	58
14	Indian Institute of Geomagnetism	<a href="http://library.iigm.res.in:8080/jspui/">http://library.iigm.res.in:8080/jspui/</a>	DSpace	OpenDOAR	22
15	National Metallurgical Laboratory	<a href="http://eprints.nmlindia.org/view/type/">http://eprints.nmlindia.org/view/type/</a>	Eprints	OpenDOAR	67
16	Madras Diabetes Research Foundation	<a href="http://mdrf-eprints.in/view/type/">http://mdrf-eprints.in/view/type/</a>	Eprints	OpenDOAR	2
17	Indian Institute of Astrophysics	<a href="http://prints.iiap.res.in/community-list">http://prints.iiap.res.in/community-list</a>	DSpace	OpenDOAR	134
18	University of Kashmir	<a href="http://dspace.uok.edu.in:8080/jspui/community-list">http://dspace.uok.edu.in:8080/jspui/community-list</a>	DSpace	OpenDOAR	684

**Table 2: Year wise submission of Theses in Shodhganga repository**

Sr. No.	Year	Theses Submitted
1	2010	1171
2	2011	1522
3	2012	2299
4	2013	7057
5	2014	16782
6	2015	31206
7	2016	55963
8	2017	59000
9	2018 (Up to 14 <sup>th</sup> June 2018)	18953



**Figure 1: Year wise contribution of PhD Theses from 2000 to 2013 in Saurashtra University**



**Figure 2: PhD Theses deposited on 1974 and 2003 to 2017 in NIT, Rourkela**

## CONCLUSIONS

Shodhganga has been a successful initiative by INFLIBNET, it provides seamless access to ETDs. During the period of current study from 4<sup>th</sup> June to 18<sup>th</sup> June 2018 the websites of Shodhganga, NIT, Rourkela and Saurashtra University were never under maintenance and their server was never down. This indicates the serious efforts made by the Institutions mentioned above. Shodhganga if maintained as a single unique ETD repository of India will foster research. The ETD initiative Shodhganga is the largest initiative by any developing country and there is a need for spreading awareness among researchers to increase its use. The ETD initiatives by other institutions who have not registered on OpenDOAR and ROAR must

be reported so as to benefit maximum researcher around the global community. ETD initiative at National Level named Shodhganga has been successful due to the funding and support provided by INFLIBNET. Open Access to ETDs should be encouraged; nowadays born digital Theses can be easily created and maintained. The Shodhganga repository should display metrics relating to views, citations and downloads so as to guide researchers about more relevant PhD Theses of their interest.

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