26th International Symposium
ETD 2023
ELECTRONIC THESES AND DISSERTATIONS

THEME: ENRICHING ETDs and THEIR REACH

Unveiling the Growth and Usage pattern of Electronic Theses and Dissertations through National ETD Repository: A Case Study of Shodhganga

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INTRODUCTION

- Poor visibility and closed accessibility of printed copies of Theses available in the Libraries were the major issues among the research community in India before the year 2009.

- Shodhganga is a National Digital Repository that came into existence in 2010 based on the UGC Notification 2009.

- It is the largest National ETD Repository in India with 4,75,000+ records of full-text Theses, plays an important role in enhancing academic integrity and ethics among academicians and researchers in the form of full-text Theses and provides a platform to research scholars to deposit, re-use and share their research work.

PURPOSE OF THE STUDY

- The present study explored various methods to analyse the data from Shodhganga in terms of Theses submissions, usage pattern, accessibility, growth and usability, metadata formats and standards, workflow management, metadata creation, data validation, text mining, citations export tool etc.

REVIEW OF RELATED LITERATURE

- Kenning Arlitsch (2020) in their study demonstrates that aggregated data from the Repository Analytics and Metrics Portal (RAMP) have significant potential to analyze visibility and use of institutional repositories (IR) as well as potential factors affecting their use, including repository size, platform, content, device and global location.
- Shajitha & Majeed (2021) evaluate the institutional repositories (IRs) in South India in terms of policy and procedures, technology, content and contributors, promotion and assessment and personnel.
- Gul et. al., (2020) explored the status of institutional repositories (IRs) in the South Asian region. The various characteristic features of IRs are studied. India, Sri Lanka and Bangladesh lead other South Asian nations
- Chapepa et. al, (2023) investigated the metadata creation practices in a functional academic institution repository in Malawi, with a specific focus on the Lilongwe University of Agriculture and Natural Resources (LUANAR) library. n terms of IRs count.
- Dublin Core (DC) is not appropriate to describe the contents of the human book. It shows that selected metadata elements from the types – person and event of schema.org can be used for describing, organizing and archiving the resources of the human library. It further highlights that existing subject entries are not sufficient to standardize the contents of these types of resources (Jana & Rout, 2022)

OBJECTIVES OF THE STUDY

- To unveil the growth and development of theses submitted to Shodhganga.
- To study and distinguish the usage patterns of data through DSpace and Google Analytics.
- To examine the Metadata Standards used in Shodhganga as compared to other Indian and Global ETDs in light of harvesting and interoperability standards.
- To make a comparison of the DSpace Metadata fields as well as the Modified Dublin Core Metadata fields adopted in the Shodhganga repository.
- To highlight the status and leap in the Theses submissions by the contributing Universities into Shodhganga for the National Ranking of HEIs.
- Exploring and highlighting the new features added to the repository for easy workflow and effortless submissions by the contributing Institutions to avoid duplication of work.
- To reveal the Top most viewed Theses from Shodhganga.
- To study the state-wise MoU Signed and their contribution to the Shodhganga
- To discuss the challenges faced in the maintenance, workflow and policies adopted to host open access content Shodhganga.

SCOPE OF THE STUDY

- Usage analytics of ETDs is very important to analyse the usage pattern and accessibility of the ETD content. Monthly usage statistics of Shodhganga were generated with the help of DSpace software. Daily page view track and reports were captured with the help of Google analytics. The data is collected from Shodhganga out of 4.75+ lakhs full text Theses records contributed by 726 Universities/CFTIs/INIs in Shodhganga as on 31st July 2023.

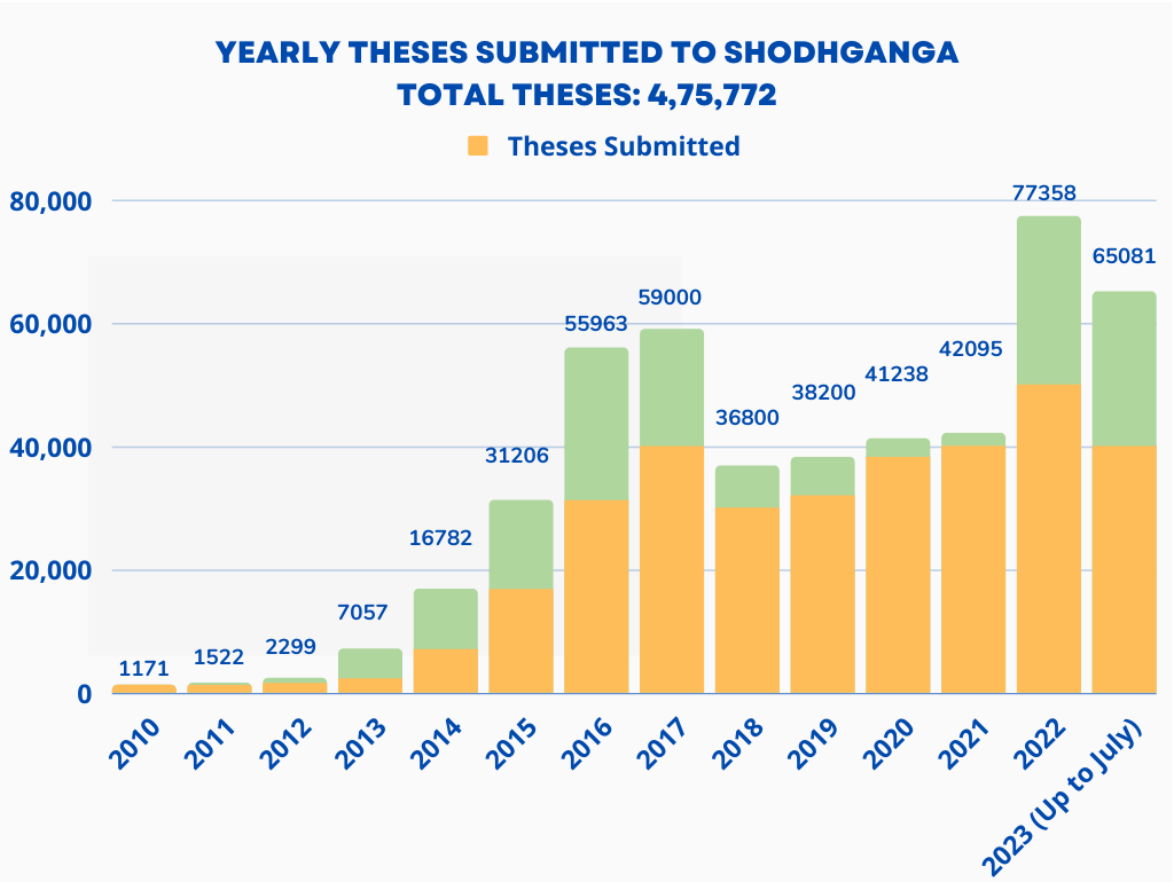
METHODOLOGY

- The present study explored various methods to analyse the data from Shodhganga in terms of Theses submissions, usage pattern, accessibility, growth and usability, metadata formats and standards, workflow management, metadata creation, data validation, text mining, Citations export tool and a file format etc. In this paper, several technical changes were also addressed which include Enhanced Submission Interfaces and Session Time Inclusion to the portal.

- However, in order to analyse the growth and development of the Shodhganga database, various in-house publications like Newsletters, Annual reports, Manuals, data available on Shodhganga website etc. are referred in order to analyse respective outcomes and growth rate in a quantitative way. In addition, the PostgreSQL database is utilized to extract the data submitted by a particular university during a specific period.

Data Analysis and Interpretation:

As on date (31st July 2023) total 4.75 + lakhs theses are uploaded to Shodhganga which is a remarkable figure in terms of full text PhD Theses submitted to the Indian national repository from 700+ Contributing Universities/CFTIs/INIs etc.

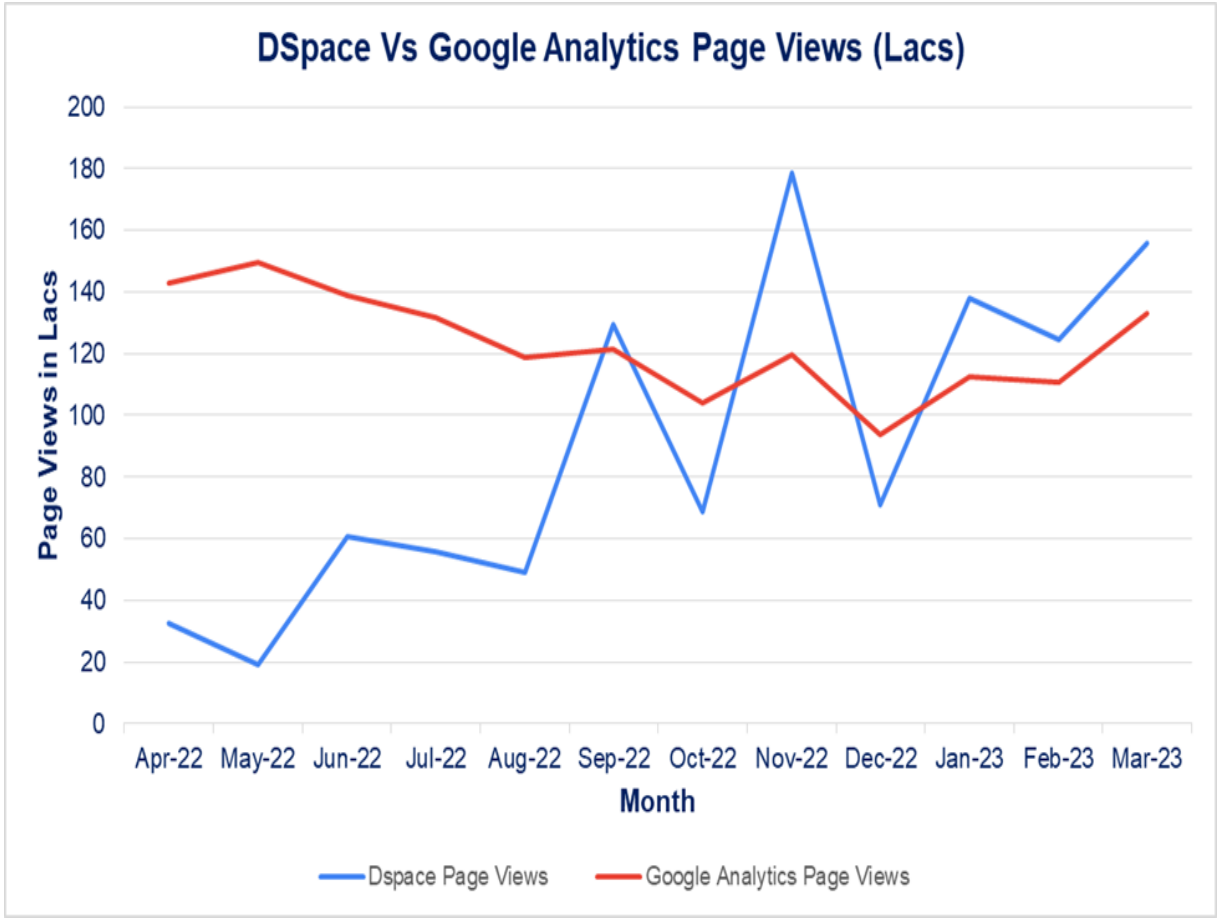


Usage Statistics:

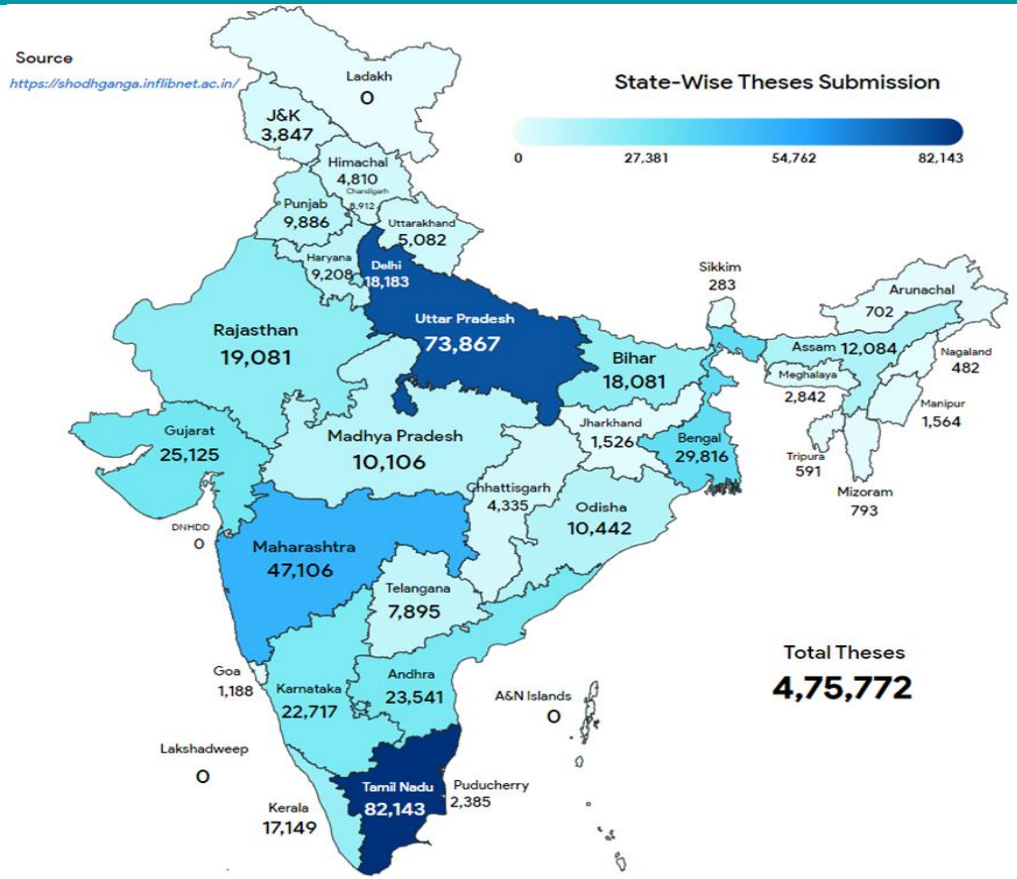
- Usage statistics are crucial for repository administrator as it provides insight effectiveness of the repository, user behaviour and the impact of the materials it host.
- This information can guide decision about content management, marketing strategies, and improvement to the repository's user experience.
- It also justify the expenditure of the digital repository.
- The data from DSpace reveals a staggering 108 million total page views, with a monthly average of 9 million page views. However, the monthly page views/hits, as measured by Google Analytics, average around 147 million page views with a monthly average 12.3 million page views. These statistics were recorded during the period from April 2022 to March 2023.

Usage patterns of data through DSpace and Google analytics

Month	Page Views (Lacs)	
	DSpace	Google Analytics
Apr-22	32.66	142.77
May-22	19.27	149.73
Jun-22	60.52	138.81
Jul-22	55.76	131.61
Aug-22	49.22	118.94
Sep-22	129.28	121.25
Oct-22	68.92	104.18
Nov-22	178.58	119.75
Dec-22	71.17	93.65
Jan-23	137.95	112.37
Feb-23	124.41	110.49
Mar-23	155.88	133.02
Total	1083.62	1,476.57

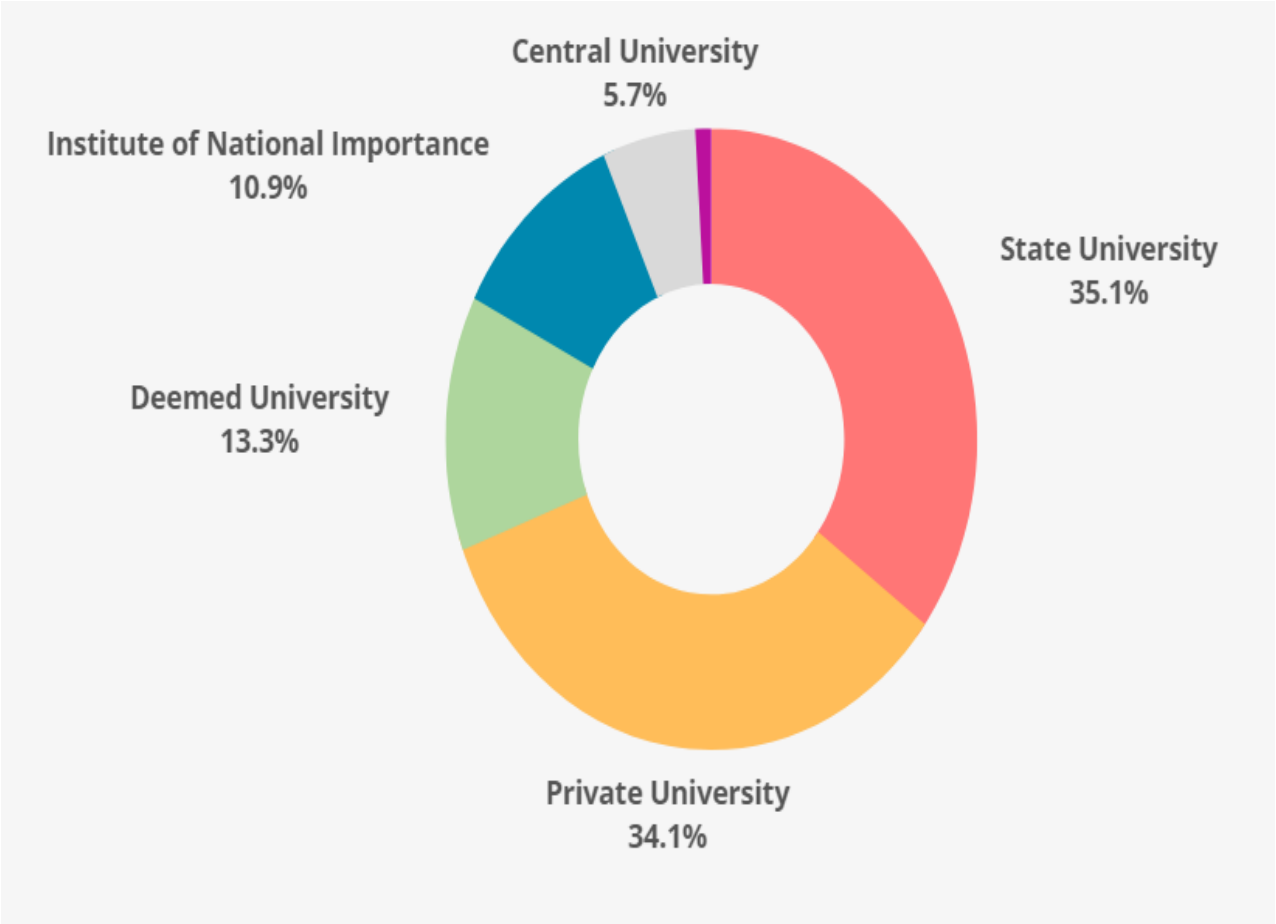


State wise Theses Contribution



Uttar Pradesh has signed (72, 8.70%) MoUs and secured first position over all states, followed by Rajasthan (69, 8.33%), Gujarat (66, 7.97%), Maharashtra (60, 7.25%), Tamil Nadu (57, 6.88%), Madhya Pradesh (55, 6.64%), Karnataka (53, 6.40%), Haryana (39, 4.71%), West Bengal (37, 4.47%), Odisha (29, 3.50%)

Tamil Nadu contributed the highest number to Shodhganga 82143 (17.27%) and took top overall. In second place was Uttar Pradesh (73867, 15.23%), followed by Maharashtra (47106, 9.90%), West Bengal (29816, 6.27%), Gujarat (25125, 5.28%), and so forth.


Central University
5.7%
Institute of National Importance
10.9%
State University
35.1%
Deemed University
13.3%
Private University
34.1%

800+ HEIs

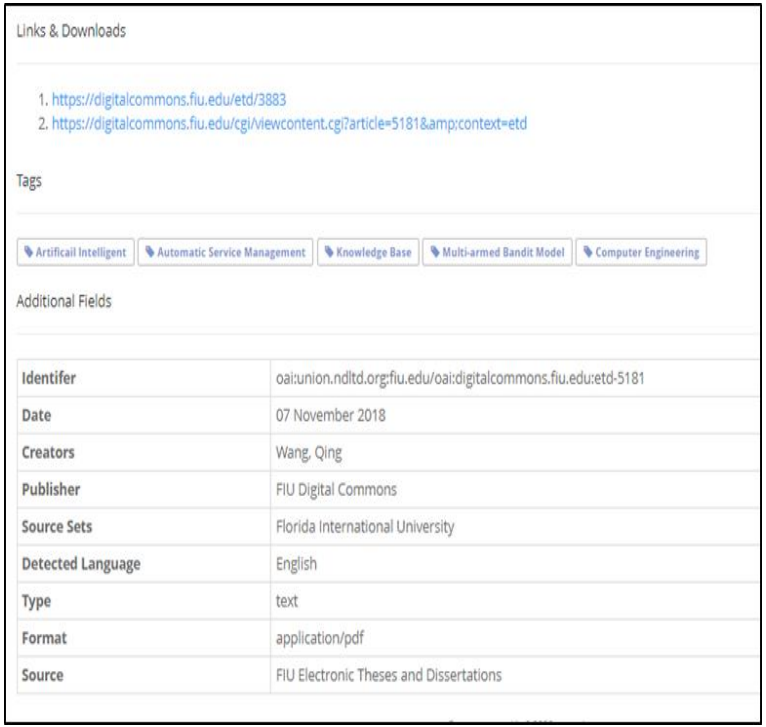
Metadata Standards used in Shodhganga as compared to other Indian and Global ETDs

Classification	0984: Computer science 0800: Artificial intelligence 0538: Aerospace engineering
URL	https://hdl.handle.net/1721.1/150177
Title	Effective Learning in Non-Stationary Multiagent Environments
Author	Kim, Dong Ki
Publication title	ProQuest Dissertations and Theses
Number of pages	185
Publication year	2023
Publisher	ProQuest Dissertations Publishing
Place of publication	Ann Arbor
Country of publication	United States
ISBN	9798380096881
Advisor	How, Jonathan P.; Agrawal, Pulkit; Foerster, Jakob N.
School	Massachusetts Institute of Technology
Department	Department of Aeronautics and Astronautics
School location	United States -- Massachusetts
Degree	Ph.D.
Source type	Dissertation or Thesis
Language of publication	English
Document type	Dissertation/Thesis
Publication / order number	30672284
ProQuest document ID	2848818902
Document URL	https://www.proquest.com/dissertations-theses/effective-learning-non-stationary-multiagent/docview/2848818902/se-2?accountid=177523
Copyright	Database copyright ProQuest LLC; ProQuest does not claim copyright in the individual underlying works.
Last updated	2023-08-12
Database	Publicly Available Content Database

Metadata fields from NDLTD ETD Search

Metadata Standards used in Shodhganga as compared to other Indian and Global ETDs

ProQuest Theses Database



Metadata Standards used in Shodhganga as compared to other Indian and Global ETDs

Please use this identifier to cite or link to this item: http://hdl.handle.net/10603/507522

Title:	Some cancer biological studies through differential equations
Researcher:	Mohd Younus Baba
Guide(s):	Saleem, M. and Abdur Raheem.
Keywords:	Mathematics Mathematics Applied Physical Sciences
University:	Aligarh Muslim University
Completed Date:	2020
Abstract:	Available
Pagination:	xx,170p
URI:	http://hdl.handle.net/10603/507522
Appears in Departments:	Department of Applied Mathematics

Full metadata record

DC Field	Value
dc.coverage.spatial	xx,170p
dc.date.accessioned	2023-08-16T10:59:11Z
dc.date.available	2023-08-16T10:59:11Z
dc.identifier.uri	http://hdl.handle.net/10603/507522
dc.description.abstract	Available
dc.format.extent	xx,170p
dc.language	English
dc.rights	university
dc.title	Some cancer biological studies through differential equations
dc.creator.researcher	Mohd Younus Baba
dc.subject.keyword	Mathematics
dc.subject.keyword	Mathematics Applied
dc.subject.keyword	Physical Sciences
dc.contributor.guide	Saleem, M. and Abdur Raheem.
dc.publisher.place	Aligarh
dc.publisher.university	Aligarh Muslim University
dc.publisher.institution	Department of Applied Mathematics
dc.date.completed	2020
dc.date.awarded	2020
dc.format.accompanyingmaterial	DVD
dc.source.university	University
dc.type.degree	Ph.D.
Appears in Departments:	Department of Applied Mathematics

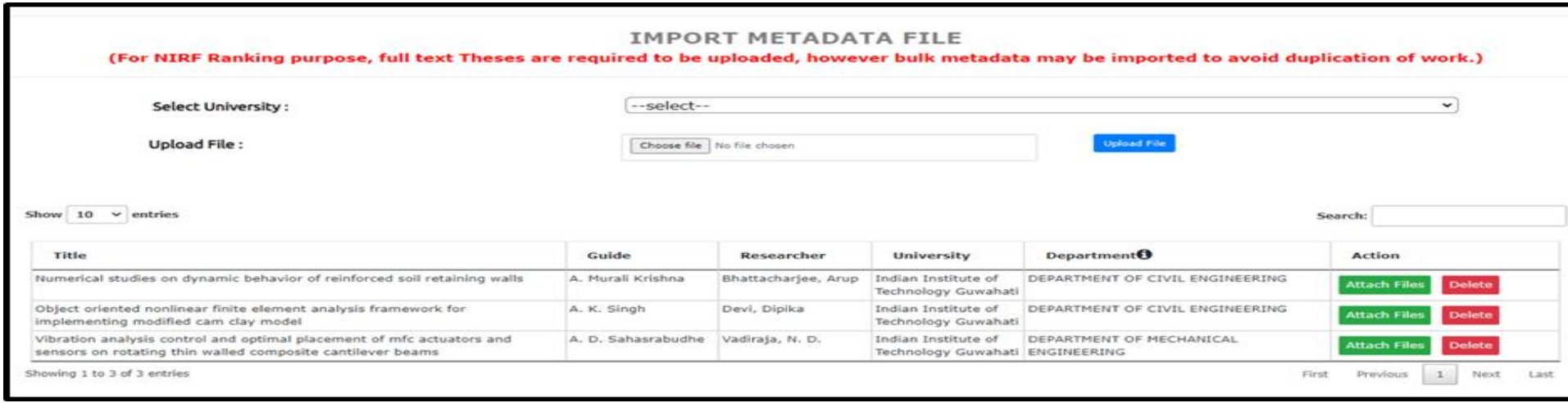
Shodhganga Modified Dublin Core Metadata Standards with Qualifiers

Modified DCMI Standard

DC Field	Value
dc.coverage.spatial	xx,170p
dc.date.accessioned	2023-08-16T10:59:11Z
dc.date.available	2023-08-16T10:59:11Z
dc.identifier.uri	http://hdl.handle.net/10603/507522
dc.description.abstract	Available
dc.format.extent	xx,170p
dc.language	English
dc.rights	university
dc.title	Some cancer biological studies through differential equations
dc.creator.researcher	Mohd Younus Baba
dc.subject.keyword	Mathematics
dc.subject.keyword	Mathematics Applied
dc.subject.keyword	Physical Sciences
dc.contributor.guide	Saleem, M. and Abdur Raheem.
dc.publisher.place	Aligarh
dc.publisher.university	Aligarh Muslim University
dc.publisher.institution	Department of Applied Mathematics
dc.date.completed	2020
dc.date.awarded	2020
dc.format.accompanyingmaterial	DVD
dc.source.university	University
dc.type.degree	Ph.D.
Appears in Departments	Department of Applied Mathematics

Bulk Metadata upload portal

A total 6236 metadata of Theses were uploaded using bulk metadata interface from 12 Institutions (IISc, IITs, IIMs and IISER). Due to this, there was a huge contribution by all the CFTIs/INIs. In Dec 2022 (12,450) and in January 2023, the highest number of theses (i.e. 20,369), since its inception was uploaded by all Institutions.



IMPORT METADATA FILE

(For NIRF Ranking purpose, full text Theses are required to be uploaded, however bulk metadata may be imported to avoid duplication of work.)

Select University : --select--

Upload File : Choose file No file chosen Upload File

Show 10 entries Search:

Title	Guide	Researcher	University	Department	Action
Numerical studies on dynamic behavior of reinforced soil retaining walls	A. Murali Krishna	Bhattacharjee, Arup	Indian Institute of Technology Guwahati	DEPARTMENT OF CIVIL ENGINEERING	Attach Files Delete
Object oriented nonlinear finite element analysis framework for implementing modified cam clay model	A. K. Singh	Devi, Dipika	Indian Institute of Technology Guwahati	DEPARTMENT OF CIVIL ENGINEERING	Attach Files Delete
Vibration analysis control and optimal placement of mfc actuators and sensors on rotating thin walled composite cantilever beams	A. D. Sahasrabudhe	Vadiraja, N. D.	Indian Institute of Technology Guwahati	DEPARTMENT OF MECHANICAL ENGINEERING	Attach Files Delete

Showing 1 to 3 of 3 entries First Previous 1 Next Last

SNo	Item/Handle	Number of views
1	Chemical and phytochemical studies of Lepidium sativum with reference to antioxidant and antimicrobial property (10603/408944)	21,726
2	Microbial degradation of lignocellulosic biomass by co_digestion with organic fraction of municipal solid waste into value added products (10603/421252)	21,642
3	Trace based comparison of mobility models for routing in Manet (10603/30248)	19,032
4	A Contribution of Information and Communication Technology (ICT) in the Development of Grant in aid University Libraries of Gujarat: A Study (10603/63521)	9,210
5	Experimental studies on concrete using fly ash rice husk ash and egg shell powder (10603/141242)	8,496

Top Viewed Theses

1 Jan 2022-30 April 2023

Challenges in the Maintenance, Workflow and Policies adopted to host open access content into Shodhganga

- Legal Issues and Challenges
- Metadata Standards and Formats
- Downloading of Full Text Chapters/ Plagiarism Issues
- Non Contributing Universities

References

Arlitsch, K., Wheeler, J., Pham, M. T. N., & Parulian, N. N. (2021). An analysis of use and performance data aggregated from 35 institutional repositories. *Online Information Review*, *45*(2), 316-335. https://doi.org/10.1108/OIR-08-2020-0328.

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Brush, D. A., & Jiras, J. (2019). Developing an institutional repository using Digital Commons. *Digital Library Perspectives*, *35*(1), 31-40.. https://doi.org/10.1108/DLP-08-2017-0028.

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Dublin Core metadata element set, version 1.1: DCMI. https://dublincore.org/specifications/dublin-core/dces/

Fox, E. A., Eaton, J. L., McMillan, G., Kipp, N. A., Weiss, L., Arce, E., & Guyer, S. (1996). National digital library of theses and dissertations. *D-Lib Magazine, September*.

Gul, S., Bashir, S., & Ganaie, S. A. (2020). Evaluation of institutional repositories of South Asia. *Online Information Review*, *44*(1), 192-212. https://doi.org/10.1108/OIR-03-2019-0087.

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THANK YOU!