

Original article

Electronic Thesis and Dissertation (ETD) by Central Universities of North –East India in Shodhganga Project: A Study

Santana Baruah*¹ and Anupam Chanda¹

¹Bahona College, Jorhat, Assam, India

*Corresponding author email: santanabaruah21@gmail.com

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Abstract: An important step towards digitally archiving scholarly work has been taken by the Central University of North-East India's Electronic Thesis and Dissertation (ETD) program. A centralized platform for hosting and accessing ETDs from different Indian universities and institutions is what the initiative seeks to provide. This initiative has contributed to the easy public access and preservation of important research outputs. The ability to search and index research material effectively has been made possible by the availability of ETDs in a digital format. This has allowed for the discovery of new ideas and knowledge. By promoting open access to research outputs, this initiative has greatly advanced scholarly research. The accomplishment of this project acts as a guide for other colleges and institutions to advocate for the digital preservation of academic study. Information was gathered by institution, department, and by year for this research, which only included central universities in North East India between 1st November 2022 and 31st March 2023, the data were collected from the Shodhganga repository. The data has been analyzed and tabulated based on the data available in the Shodhganga repository. In North East India, there are ten universities in total, but only nine are contributing to Shodhganga. North Eastern Hill University has made the most overall contributions of ETD to Shodhganga while Assam University is in second place.

Keywords: Electronic Thesis and Dissertation (ETD), Shodhganga, Open Access, Central University, E-Resources.

1. Introduction

Information and Communication Technologies (ICT) has now permeated every aspect of modern living. The practices and procedures of almost all commercial and governmental endeavors have undergone a basic change as a result of the use of ICT over the past 20 years. The use of ICT improves access to digital knowledge, lowers the digital divide, and raises living standards. Adopting ICT in libraries is a way to improve the material made available there. Online publications today provide open infrastructure services to stakeholders in scholarly communication. Open access' main objective is to make academic papers freely accessible online for information seekers' needs. The Budapest Open Access Initiative (BOAI) introduced the idea of Open Access in December 2001. (Devi Krishna and Vrema; March 2017). Since this point, the Open Access movement has become much more well-known and accepted within academic and scientific institutions over the previous few years.

By storing it in the Institutional Repository (IR), a digital repository, educational organizations make their data accessible to users. When DSpace at MIT was launched in 2002, SPARC (Scholarly Publishing and Academic Resources Coalition) coined the phrase "institution repository" for the first time. Institutional repositories for academics' intellectual resources have been developed by the UGC and other higher education and research organizations in India to combat plagiarism and progress research ethics. Preprints, working papers, theses and dissertations, references, student projects, course materials, newsletters and bulletins, yearly reports, journals, articles, books, book chapters, patents, learning objects, conference papers, special materials, newsletters, working papers, The primary materials that comprise IR's major contents include but are not limited to, artistic creations, photographs, and video recordings. The growth of academic institutions' research and teaching is greatly aided by the use of Electronic Theses and Dissertations (ETDs). As part of the Vidyanidhi project, which aims to produce, archive, and make Indian theses accessible online, the University of Mysore established the first ETD repository in India. According to the "UGC Minimum Standards & Procedure for Award of M.Phil. / Ph.D. Degree, Regulation, 2009" established by the UGC, university theses and dissertations must be submitted in both the paper form and the electronic form at their respective institutions. Thesis and dissertations are being changed from print to electronic format in the age of ICT form by ETDs, facilitating easier access to intellectual work in the digital realm for a particular community.

Shodhganga:

The INFLIBNET center established the Shodhganga digital archive for Indian Electronic Theses and Dissertations. There are roots for the Sanskrit word "Shodh," which signifies inquiry and discovery. The "Ganga" is the most venerated, largest, and longest river on the Indian subcontinent. The Ganga is the emblem of India's ancient culture and society because it has captured India's heart and drawn untold millions to her banks since the dawn of time. It is constantly evolving, flowing, and beloved by its inhabitants. The Shodhganga@INFLIBNET Centre's main objective is to provide research students with a location to submit their doctoral theses and make them freely accessible to the entire academic community. It is built using DSpace, an open-source digital repository program developed by MIT (Massachusetts Institute of Technology) and Hewlett-Packard. (HP). A total of 665 colleges have signed a MoU (Memorandum of Understanding) with the repository, and 580 universities in total are contributing to it. The archive has received 9470 synopses and 396209 full-text theses. (till 31st March, 2023).

Shodhganga replicates the academic organization of each university in terms of the Departments, Centers, and Colleges that each university has to make navigation simpler. The arrangement makes it easier for university researchers to submit their theses to the proper departments, centers, or colleges. The home page offers simple and sophisticated search choices. To make it simpler to explore, navigate, search, and obtain content from the repository based on a particular topic, the Centre is also developing a semantic web-based interface.

2. Review of Literature

Alhaji (2007) assesses the quality of digitized test papers, theses, and dissertations in Nigerian university libraries. Although some colleges provide automation services, it was found that none of the papers mentioned there had been preserved digitally. The main obstacles to digitization in university libraries are a lack of money, a lack of appropriate facilities, a lack of qualified staff, and a lack of consistent electricity. Swain (2010) evaluates the current state of ETD use and adoption globally, provides a short history of ETDs, provides a summary of the main issues that have an impact on ETD projects, discusses the potential advantages of ETDs, and examines ETD activities in India. The input of theses and dissertations from North-Eastern Central Universities of India to Shodhganga is evaluated by Devi and Verma (2017). They discovered that while several North East central universities were completing and submitting their theses to Shodhganga, several other universities were still in the early phases of submission, and two central institutions had not yet started uploading theses. There are numerous differences in departmental contributions as a result of

various departments at the same institution contributing in different amounts. An overview of the contributions made to the Shodhganga open-access repository by India's central organizations is provided by Jhamb and Samim (2017). They discovered that the majority of institutions restrict access to campus only, except a few central universities, but they must work on an open access policy to satisfy the demands of users as global citizens.

3. Aims and Objectives

- To determine how many central colleges in North East India have signed memorandums of understanding with Shodhganga.
- To determine the overall number of theses and dissertations the Central University of North East India has sent to Shodhganga.
- Examine the Central Universities of North East India's contributions of theses and papers to Shodhganga year by year.
- Institutional rankings based on donations to the "Shodhganga" ETDs.
- To count and rank the number of theses produced by the top five departments at each institution.

4. Research Methodology

The Shodhganga repository underwent a thorough study to accomplish the aforementioned objectives. Information was gathered by institution, department, and by year for this research, which only included central universities in North East India. Between 1st November 2022 and 31st March 2023, the data were collected from the Shodhganga repository (<http://shodhganga.inflibnet.ac.in/>), presented as tables, and then analyzed using only percentages. In North East India, 9 (Nine) central universities have decided to sign an MOU with Shodhganga.

Scope and coverage:

10 Central Universities from North East India have been chosen to participate in this research. Only one Central University out of the ten has not inked a MoU allowing them to upload their ETDs to "Shodhganga."

5. Data Analysis and Interpretation

Data analysis refers to the process of examining and interpreting data using various statistical and computational techniques to derive meaningful insights, draw conclusions, and inform decision-making. It involves the

systematic and objective exploration, organization, and interpretation of data to identify patterns, relationships, trends, and anomalies, and to extract useful information. For the study, the necessary information was gathered from the project website and subjected to a quick calculation procedure.

Table 1: Central University of North East India signed with MoU

Sl. No.	Central University	State	Year of Establishment	MoU
1	North Eastern Hill University	Meghalaya	1973	26 th November 2010
2	Assam University	Assam	1994	31 st January 2013
3	Manipur University	Manipur	1980	17 th March 2011
4	Tezpur University	Assam	1994	1 st August 2013
5	Mizoram University	Mizoram	2000	17 th October 2013
6	Rajiv Gandhi University	Arunachal Pradesh	1985	19 th September 2014
7	Tripura University	Tripura	1987	21 st January 2013
8	Nagaland University	Nagaland	1994	11 th August 2015
9	Sikkim University	Sikkim	2007	1 st March 2012

Source: <https://shodhganga.inflibnet.ac.in/>

North East India has ten (10) Central Universities. The Memorandum of Understanding (MoU) signed by Central Universities from North East India for submission of Electronic Theses and Dissertations in Shodhganga is shown in Table 1. Central Agricultural University is one of the Central Universities in North East India that hasn't signed a MoU.

Table 2: Central Universities of North East India's contribution to Shodhganga

Sl. No.	Institute	Number of Thesis	Percentage (%)	Rank
1	North Eastern Hill University	2512	27.40	1
2	Assam University	2150	23.46	2
3	Manipur University	1403	15.30	3
4	Tezpur University	876	9.52	4
5	Mizoram University	712	7.77	5
6	Rajiv Gandhi University	538	5.86	6

7	Tripura University	419	4.58	7
8	Nagaland University	387	4.23	8
9	Sikkim University	173	1.89	9
Total		9166		

Source: <https://shodhganga.inflibnet.ac.in/>

The greatest contribution comes from North Eastern Hill University and it has submitted to 2512 to Shodhganga. With 2150 contributions, Assam University is in second place, followed by Manipur University with 1402 contributions. Tezpur University (873) is ranked fourth, followed by Mizoram University (712), Rajiv Gandhi University (538), Tripura University (419), Nagaland University (387), and Sikkim University (173). Central Agricultural University has not contributed to Shodhganga.

Table 3: Year-wise contribution of Electronic Thesis and Dissertation to Shodhganga

Sl. No	University	1960-69	1970-79	1980-89	1990-99	2000-09	2010-19	2020-23	Total
1	North Eastern Hill University	2	1	271	304	396	1119	229	2322
2	Assam University	-	-	-	5	268	1493	266	2032
3	Manipur University	1	-	69	219	408	342	181	1220
4	Tezpur University	-	-	-	6	112	558	192	868
5	Mizoram University	-	-	-	-	24	413	255	692
6	Rajiv Gandhi University	-	-	-	6	112	277	121	516
7	Tripura University	-	-	-	1	2	270	109	382
8	Nagaland University	-	-	-	1	21	224	92	338
9	Sikkim University	-	-	-	-	-	53	120	173
Total		3	1	340	542	1343	4749	1565	8543

Source: <https://shodhganga.inflibnet.ac.in/>

In Table 3 the information provided on the Shodhganga website wasn't verified. Under the names of the universities that did not adhere to the year-wise grouping of donated data, the repository listed the total number of theses. Existing data in the Shodhganga were shown in Table 3 and it was discovered that some central universities' year-wise data had varied greatly from Shodhganga.

6. Contributions to ETDs from notable departments at North East Indian Central Universities

Table 4: North Eastern Hill University (The results from the analysis of the top five departments of North Eastern Hill University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Education	264	24.98	1
2	Department of Botany	260	24.59	2
3	Department of Chemistry	220	20.82	3
4	Department of English	162	15.32	4
5	Department of Geography	151	14.29	5
	Total	1057	100%	

Source: <https://shodhganga.inflibnet.ac.in/>

It was found from Table 4 that the Department of Education contributed more number of their thesis 264 (24.98 %) in the Shodhganga project. It is followed by the Department of Botany 260 (24.59 %), the Department of Chemistry 220 (20.82 %), the Department of English 162 (15.32 %), and the Department of Geography 151 (14.29 %). It is implied that there is a less significant disparity in the contributions made by the university's departments.

Table 5: Assam University (The study analyzed the contributions of the top five departments of Assam University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Bengali	285	32.64	1
2	Department of Ecology and Environmental Science	181	20.74	2
3	Department of Life Science	175	20.04	3
4	Department of Education	117	13.41	4
5	Department of Mass Communication	115	13.17	5
	Total	873	100%	

Source: <https://shodhganga.inflibnet.ac.in/>

It was found from Table 5 that the Department of Bengali were contributed more number of their thesis 285 (32.64 %) in Shodhganga project. It is followed by Department of Ecology and Environmental Scienc 181 (20.74), Department of Life Science 175 (20.04), Department of Education 117 (13.41).Department of Mass Communication has contributed 115 (13.17 %) of theses and occupies 5th rank.

Table 6: Manipur University (The study examined the contributions of Manipur University's first five departments)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Life Science	213	35.66	1
2	Department of English	105	17.59	2
3	Department of History	103	17.26	3
4	Department of Economics	91	15.26	4
5	Department of Political Science	85	14.23	5
	Total	597	100 %	

Source: <https://shodhganga.inflibnet.ac.in/>

Table 6 shows that the Department of Life Sciences took first place with 213 (35.66%) contributions, followed by the Department of English 105 (17.59%) and the Department of History 103 (17.26 %). The Departments of Economics contributed 91 (15.26 %) and the Department of Political contributed Science 85 (14.23 %) of the theses. The study's findings clearly show that other departments should be encouraged to deposit in the repository as well.

Table 7: Tezpur University (Table 7 shows the result of the contributions made by the first five departments of Tezpur University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Chemical Sciences	151	30.76	1
2	Department of Physics	116	23.62	2
3	Department of Molecular Biology and Biotechnology	84	17.11	3
4	Department of Computer Science and Engineering	76	15.47	4
5	Department of Business Administration	64	13.04	5
	Total	491	100 %	

Source: <https://shodhganga.inflibnet.ac.in/>

Table 7 shows that the Department of Chemical Science contributed 151 (30.76%) theses and was ranked first.

Furthermore, it was discovered that the remaining four departments contributed less than 120 theses, ranging from 116 to 64 (23.62 % to 13.04 %). It is assumed that there is no significant disparity in contributions between departments.

Table 8: Mizoram University (Table 8 shows the contributions made by the first five departments of Mizoram University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Education	63	27.15	1
2	Department of Environmental Science	48	20.69	2

3	Department of Physics	43	18.54	3
4	Department of English	41	17.67	4
5	Department of Social Work	37	15.95	5
	Total	232	100	

Source: <https://shodhganga.inflibnet.ac.in/>

It was found from the table that the Department of Education contributed 63 (27.15 %) theses, with the Department of Environmental Science contributing 48 (20.69 %), the Department of Physics contributing 43 (18.54 %), the Department of English 41 (17.67 %), and the Department of Social Work contributing 37 (15.95%). It can be deduced that the last three departments contributed less than 20 % of theses, whereas the first institute contributed more theses than the other departments.

Table 9: Rajiv Gandhi University (Table 9 shows the contributions of the thesis made by the first five departments of Rajiv Gandhi University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Education	92	33.69	1
2	Department of Geography	60	21.98	2
3	Department of Botany	50	18.32	3
4	Department of Economics	37	13.55	4
5	Department of History	34	12.46	5
	Total	273	100 %	

Source: <https://shodhganga.inflibnet.ac.in/>

Table 9 shows that 92 (33.69%) theses from the Department of Education were donated and ranked first. Furthermore, it was discovered that the contributions from the remaining four departments ranged from 60 to 34 theses (21.98 to 12.46 %), or less than 60 theses. It is implied that there is a small considerable difference between the departments' contributions.

Table 10: Tripura University (The study examined the contributions made by Manipur University's first five departments, which are listed in Table 10)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Chemistry	36	23.53	1
2	Department of Physics	33	21.57	2
3	Department of Mathematics	33	21.57	3
4	Department of Botany	26	16.99	4
5	Department of Zoology	25	16.34	5
	Total	153	100	

Source: <https://shodhganga.inflibnet.ac.in/>

Table 10 shows Tripura University's contribution to Shodhganga, and it reveals that departments currently provide contributions to this project. The Department of Chemistry contributed 36 (23.53%) which one followed by the Department of Physics 33 (21.57%), and the Department of Mathematics 33 (21.57%). Both the Department of Botany 26 (16.99%) and the Department of Zoology contributed 25 (16.34 %) number of the thesis. It was discovered that the science departments of Tripura University are leading contributors to Shodhganga.

Table 11: Nagaland University (Table 11 shows the contributions of the thesis made by the first five departments of Nagaland University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage (%)	
1	Department of Education	50	27.62	1

2	Department of English	48	26.52	2
3	Department of Botany	34	18.78	3
4	Department of Geography & Resource Management	26	14.37	4
5	Department of Economics	23	12.71	5
	Total	181	100 %	

Source: <https://shodhganga.inflibnet.ac.in/>

It was found from the table that the Department of Education contributed 50 (27.62 %) theses, with the Department of English contributing 48 (26.52 %), the Department of Botany contributing 34 (18.78 %), the Department of Geography & Resource management 26 (14.37 %), and the Department of Economic contributing 23 (12.71 %). The study assumed that most arts departments of Nagaland University are leading contributors to Shodhganga.

Table 12: Sikkim University (Table 12 shows the result of the contributions made by the first five departments of Sikkim University)

Sl. No.	Department	Contribution		Rank
		No. of thesis	Percentage	
1	Department of Nepali	17	24.28	1
2	Department of Microbiology	16	22.85	2
3	Department of Peace and Conflict Studies and Management	15	21.43	3
4	Department of Horticulture	11	15.72	4
5	Department of International Law	11	15.72	5

	Total	70	100 %	
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Source: <https://shodhganga.inflibnet.ac.in/>

Table 12 shows Sikkim University's contribution to Shodhganga, and it reveals that The Department of Nepali contributed 17 (24.28 %) which one followed by the Department of Microbiology 16 (22.85%), Department of Peace and Conflict Studies & Management 15 (21.43%), the Department of Horticulture 11 (15.72) and Department of International Law 11 (15.72 %). It is implied that the contributions of the final four departments were less than 25%, although the first institute made a few numbers of contributions than the other departments and institutes.

7. Major Findings

- In North East India, there are ten universities in total, but only nine are contributing to Shodhganga. Thesis contributions from the one university (Central Agricultural University) have not yet begun to appear in the Shodhganga repository.
- It is discovered that the North Eastern Hill University (2445) has made the most overall contributions of ETD to Shodhganga while Assam University (1900) is in second place, Manipur University (1253) is in third place and Tezpur University (728) is in the fourth place, followed by Mizoram University (658), Rajiv Gandhi University (488), Tripura University (389), Nagaland University (350) and Sikkim University (151).
- Most of the contributions made by the central universities were between the years 2010-2019.
- In terms of contributions to the Shodhganga, the Department of Education at NEHU has contributed the most theses (262), followed by the Departments of Bengali at Assam University (246), Departments of Life Sciences at Manipur University (201) Department of Chemical Sciences at Tezpur University (134), Department of Education at Mizoram University (57), Department of Education (87) at Rajiv Gandhi University, Department of Chemistry at Tripura University(34), Department of English at Nagaland University (43) and Department of Nepali at Sikkim University (17). These departments are the top ones in their respective universities, and they have contributed thesis to Shodhganga.

8. Conclusion

In conclusion, the Electronic Thesis and Dissertation (ETD) initiative by the Central University of North-East India in the Shodhganga project is a commendable effort toward the digital archiving of academic research. By making theses and dissertations available online, this initiative has increased the accessibility and visibility of research outputs, not only within the academic community but also to the wider public.

The Shodhganga project has provided a centralized platform for hosting ETDs from various universities and institutions, thereby facilitating easy access and retrieval of research data. This has also led to the preservation and safeguarding of valuable research outputs, which may otherwise have been lost or forgotten.

Moreover, the availability of ETDs in a digital format has allowed for efficient searching and indexing of research literature, which can aid in the discovery of new knowledge and ideas. It has also enabled the dissemination of research findings to a wider audience, thereby increasing the impact and relevance of academic research.

In summary, the ETD initiative by the Central University of North-East India in the Shodhganga project has contributed significantly to the advancement of academic research and scholarship and serves as a model for other universities and institutions to follow in promoting open access to research outputs.

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