Patterns in Indian Open Access Repositories: A Data-Driven Exploration from Open DOAR

Nandeesha M. G.
Research Candidate
DoS in Library and Information Science
University of Mysore, Mysuru
Email: nandeeshamg1992@gmail.com

Adithya Kumari H.
Professor,
DoS in Library and Information Science
University of Mysore, Mysuru
Email: adithyakumarih@gmail.com

Abstract

This study investigates patterns in Indian institutional repositories listed in the Directory of Open Access Repositories (OpenDOAR). Using a data-driven exploratory approach, it analyses 111 open-access repositories from India, focusing on key aspects such as repository types, software platforms, subject coverage, content types, and implemented policies. Data were categorised and analysed using MS Excel, with results presented in tabular form. The study is limited to repositories listed in OpenDOAR as of January 2025 and does not include non-listed repositories. Additionally, the findings are constrained by the time-bound nature of the data. This research provides insights into the current state and trends of institutional repositories in India.

Keywords
OpenDOAR; Institutional Repository; IR Software; Subject Coverage; IR Policy.

Electronic access
The journal is available at www.jalis.in
DOI: 10.5281/zenodo.15798341

Journal of Advances in Library and Information Science
ISSN: 2277-2219 Vol. 14. No.3. 2025. pp.177-182

1. INTRODUCTION

The advent of the digital age has transformed the landscape of academic publishing, ushering in an era defined by the open access movement. Open Access Repositories (OARs) have emerged as vital platforms for the free dissemination of scholarly works, ensuring that research outputs are accessible to a global audience without financial or legal barriers. In India, the establishment and growth of OARs have gained significant momentum, reflecting a commitment to enhancing the visibility and impact of Indian research on both national and international stages. A key resource in this domain is the Directory of Open Access Repositories (OpenDOAR), an authoritative global directory that provides comprehensive information about open access repositories, including their content, operational practices, and policies. OpenDOAR plays a crucial role in promoting transparency and accessibility, making it an invaluable tool for understanding the landscape of OARs. With 111 repositories currently listed in OpenDOAR, India stands out as a significant contributor to the global open access movement. This study employs a data-driven approach to analyse emerging patterns within these repositories, focusing on aspects such as repository types, software platforms, subject coverage, content diversity, and policies. By examining these dimensions, this article aims to provide a comprehensive overview of open access repositories in India as catalogued by OpenDOAR, offering insights into their current state and trends.

1.1 Institutional Repositories

Institutional Repositories (IRs) are digital systems that capture, preserve, and provide access to an organisation's scholarly output (Foster & Gibbons, 2005a). Institutional Repositories (IRs) have emerged as a new strategy for institutions to accelerate scholarly communication through digital content (Robertson, 2008). However, for IRs to be successful, they must be filled with valuable scholarly work that is searched and cited (Foster & Gibbons, 2005b).

2. REVIEW OF LITERATURE

2.1 Growth of Open Access Repository

Naqvi (2021) stated that OpenDOAR has a steady increase from only 78 in 2005 to 5660 in May 2021. The major contribution is from the USA. Saikia et al. (2023). There are 5918 worldwide repositories listed on OpenDOAR, and 105 (1.77%) repositories belong

to India. Parray et al. (2023) studied a comparative analysis of India and China. India holds at 4th rank and China holds 5th rank in the OpenDOAR. Kapoor (2023)There were 6029 OARs available in the Open DOAR, in which India has 106 OARs with (1.76%). (Karadia & Sahoo, 2021) studied a comparative study of India and Australia OARs, in which India has the highest number of OARs, with 98, and Australia has 90 OARs. The maximum IRs developed in 2011-2015 i.e. 38 (45.24%), followed by i.e. 34 (40.48%) and in 2016-2019 only 12 (14.29%) institutional repositories developed by Indian institutions (Kalbande, 2019). Out of 57 institutional repositories highest, i.e., 21 (36.84%) institutional repositories were registered in the years of 2011, followed by 10 (17.54%) repositories in 2020 & followed by 5 (8.77%) repositories in 2013 & 2019 each, and no repositories registered in 2006, 2016 and 2018 (Nayak & Parhi, 2019). Dhanavandan (2020) found that among 5268 repositories, 898 (17.04%) were from the United States of America, which occupied the first position, and Japan occupied the second position with 546 (10.40%). India was the sixteenth position among the countries with 92 (1.75%) repositories.

2.2 Type of Open Access Repositories

Ibrahim and Beigh (2019) examined the contribution of UK open access repositories to OpenDOAR. The study found that most repositories, 220 (79.1%), are institutional repositories in the 278 OARs. (Parray et al., 2023) they studied that India mainly focused on institutional repositories. Among 106 the OARs, 96 (90.56%) were institutional repositories (Kapoor, 2023). Kuri and Singh (2020) found that the maximum repositories are institutional, 81 (84.38%), in the 96 Indian OARs. (Karadia & Sahoo, 2021). Indian repositories registered in OpenDOAR, and it was observed that Institutional Repository 89(84.76%) was the most common type of repository. (Saikia et al., 2023). Among 43 open access repositories, 35 repositories were institutional repositories with (81.40%), followed by 6 were disciplinary repositories with (13.95) and 2 were Governmental repositories with (4.65%). (Karadia & Sahoo, 2021) studied a comparative study of India and Australia. India has 98 institutional repositories, with 85.71%, while Australia has 79 institutional repositories, with 87.78%. Chandrappa et al. (2024) found that 43 Maritime OARs available in the Open DOAR. In which 35 repositories were institutional repositories, with 81.40%, which were dominant among them.

2.3 Content type

2.3.1 Journal Articles

Karadia and Sahoo (2021) presented a comparative study of open access repositories in India and Australia, as listed in the OpenDOAR directory. The majority of repositories in both countries primarily store journal articles. Ibrahim and Beigh (2019) examined the contribution of UK open access repositories to OpenDOAR, which focus on journal articles. Naqvi's (2021) study revealed that the journal article occupied the top rank. Kuri and Singh (2020) found that journal articles 72 (20.93%) are leading contents in 96 OARs. Indian open-access IRs revealed that out of 16 types of content, journal articles 76 (19.90%) were the most available content (Saikia et al., 2023). Journal articles (26) were the main content in the Maritime universities' OARs with (18.18%) in the OpenDOAR (Chandrappa et al., 2024)

2.3.2 Theses and Dissertations

Karadia and Sahoo (2021) presented a comparative study of open access repositories in India and Australia, as listed in the OpenDOAR directory and found that a smaller proportion archiving theses and dissertations.

2.4 Use of Software

Karadia and Sahoo (2021) presented a comparative study of open access repositories in India and Australia, as listed in the OpenDOAR directory. Open-source software like E-Prints and DSpace are commonly employed for managing these repositories. (Parray et al., 2023) Their study showed that DSpace occupied a prominent place in Indian OARs in the Open DOAR. (Kapoor, 2023) noticed that DSpace (56%) is the widely used software in the 106 OARs. Kuri and Singh (2020) opted DSpace 54 (56.25%) is the highest number of software used in the 96 OARs. A study of India and Australia Open Access Repositories, in which DSpace is the largest used software with 56(56%) in India and 21 (22%) in Australia (Karadia & Sahoo, 2021). There were 105 OARs available in India Open Access Repositories. As per the Indian open access repositories in the OpenDOAR, DSpace 59 (56.19%) was the highly preferred IR software (Saikia et al., 2023). Maritime universities in different countries in the OpenDOAR developed DSpace, which stands at the top of the list with the development of OARs software Chandrappa et al. (2024). Ibrahim and Beigh (2019) examined the contribution of UK open access repositories to OpenDOAR and found that E-Prints is the preferred software.

2.5 Subject Coverage

Naqvi (2021) stated that OpenDOAR is a multidisciplinary repository that covers all subject areas. Kapoor (2023) noticed that among 106 OAPs, science is the most prominent subject, with 88 (83.01%). Kuri and Singh (2020) depicted that science 58 is the highest covered in all the subjects, with 20.28%. A study of India and Australia Open Access Repositories revealed that multidisciplinary is the most prominent subject with 49 repositories in India and 65 repositories in Australia (Karadia & Sahoo, 2021). Saikia et al. (2023) observed that out of 16 subjects, Science (78) is the dominant discipline with 14.89%. Chandrappa et al. (2024) revealed that the maximum number of Maritime universities covered science, which means science was the predominant subject among others.

2.6 Open Access Policies

Saikia et al. (2023) studied Indian open-access repositories in the OpenDOAR; most IRs do not have open-access policies. Out of 105 IRs, only 17 (16.19%) have open access policies, while 88 (83.81%) do not have any policy. (Mbughuni, 2023) study concluded that OAIR policies may cover a number of issues, and without a policy to guide users, OAIRs may remain virtually empty without content. Therefore, creating awareness on OAIRs and OAIRs policy should be emphasised in submissions to enhance the growth of collections in OAIRs. Chandrappa et al. (2024) conducted a study on the status of open access repositories in the Maritime field in the OpenDOAR. There were 43 open access repositories available, of which 1 repository followed a defined open access policy, and no other repositories followed any of the open access policies.

3. OBJECTIVES

1. To identify the types of Open Access Repositories listed in OpenDOAR.
2. To examine the software platforms used for managing institutional repositories.
3. To explore the subject coverage of institutional repositories and determine whether they support multidisciplinary or specialised content.
4. To investigate the types of content available in the institutional repositories.
5. To assess the implementation of policies across institutional repositories in India listed in OpenDOAR.

4. SCOPE

The present study is limited to only the Indian Open Access Repository in the Directory of Open Access Repositories (OpenDOAR).

5. METHODOLOGY

The study adopts a data-driven exploratory approach to analyse institutional repositories (IRs) in India listed in the Directory of Open Access Repositories (OpenDOAR). Data were collected from the OpenDOAR using the website https://v2.sherpa.ac.uk /opendoar/. accessed on 25 January 2025. At the time of data extraction, 111 open-access repositories were available in OpenDOAR. The collected data were categorised into the following aspects:

- Types of Repositories – Examining whether the repositories serve institutional, disciplinary, governmental, or other specialized purposes.
- Software Platforms – Analysing the adoption of various IR software (e.g., DSpace, E-Prints) used by Indian repositories.
- Subject Coverage – Exploring the subject areas supported, including multidisciplinary or specialized repositories.
- Contents in Repositories – Investigating the types of materials hosted, such as theses, journal articles, datasets, and reports.
- Open Access Policies implemented – Assessing the various IR policies implemented (e.g., metadata, Data, content, submission, and preservation policies)

The extracted data were tabulated using MS Excel and analyzed through descriptive statistical methods. Findings were presented in the form of tables for clear interpretation.

6. DATA ANALYSIS AND INTERPRETATION

6.1 Types of Repositories

Table 1: Types of Open Access Repositories

Types of Repositories	No. of Repositories	%
Institutional Repositories	95	85.6
Disciplinary Repositories	08	7.2
Aggregating Repositories	07	6.3
Governmental Repositories	1	0.9
Total	**111**	**100**

Table 1 reveals that a significant dominance of institutional repositories, which account for 85.6% of the total contributions. This indicates that universities and research institutions play a pivotal role in the open-access movement. In contrast, disciplinary repositories contribute only 7.2%, while aggregating repositories make up 6.3%. Governmental repositories are notably underrepresented, comprising just 0.9% of the total, highlighting a limited scope of government-driven initiatives in promoting open access to research.

6.2 Use of Software

Table 2: Software Platform

Software	Total	%
DSpace	63	56.76
E-Prints	33	29.73
Other	7	6.31
Unspecified	3	2.70
DSpace-CRIS	2	1.80
Greenstone	1	0.90
Open Repository	1	0.90
Drupal	1	0.90
Total	**111**	**100**

Table 2 shows that DSpace is the most widely used software across all repository types, accounting for 56.76% of open-access repositories. E-Prints is the second most commonly used software, adopted by 29.73% of repositories. Other software solutions are used in 6.30% of repositories, while 2.70% of repositories have not specified the software they use. Additionally, DSpace-CRIS is implemented in 1.80% of repositories, whereas Open Repository and Drupal are each used in 0.90% of repositories.6.4 Subject coverage

6.3 Subject Coverage

Table 3: Subject Coverage

Coverage of Subject	Number of repositories	%
Science	93	83.80
Technology	79	71.20
Social Sciences	70	63.06
Health and Medicine	66	59.50
Arts	62	55.90
Engineering	62	55.90
Mathematics	62	55.90
Humanities	61	54.95

Table 3 shows the subject-wise coverage in 111 institutional repositories under study. It is found that 83.8% repositories covered the Science subject, followed by 71.2% repositories covered Technology, 63.06% repositories covered Social Sciences and 66% of repositories covered Health and Medicine. Arts, Humanities, and Mathematics subjects are covered equally in 55.9% indicating their balanced representation. 54.95% repositories covered the subject of Humanities. Overall, the diversity of subjects highlights the repositories' support for multidisciplinary research.

6.4 Content Types

Table 4: Content Types

Sl. No.	Content Types	No. of Repositories	%
1.	Journal articles	80	72.07
2.	Theses and Dissertations	63	56.76
3.	Conference and Workshop papers	55	49.55
4.	Books, Chapters and Sections	44	39.64
5.	Other special item types	37	33.33
6.	Reports and working papers	36	32.43
7.	Learning objects	25	22.52
8.	Bibliographic references	13	11.71
9.	Patents	07	6.30
10.	Datasets	05	4.50
11.	Software	01	0.90

Table 4 shows the content types available in 111 Indian open-access repositories under study. It is found that among various content types, Journal articles are the most available in 72.07% repositories followed by availability of Theses/Dissertations in 56.76% IRs, Conference and workshop papers 49.55%, books, chapters and Sections in 39.64% IRs, Other special item types in 33.33%, Learning objects in 22.52%, Bibliographic references 11.71%, Patents 6.30%, Datasets 4.50%, Software 0.90%. The content types available in open access repositories have the potential to enhance research, support educational initiatives, and facilitate knowledge-sharing and collaboration(Kuri & Singh, 2020; Pinfield et al., 2014; Wani & Ganaie, 2024).

6.5 Open access policies

Table 5: Open access policy

Repository Type	Repositories with Policies	%
Institutional	12	10.81
Aggregating	3	2.70
Disciplinary	2	1.80
Governmental	1	0.90
Total	**18**	**16.21**

Table 5 indicates the implementation of policies in institutional repositories under study. Out of 111 institutional repositories, only 16.21% have implemented policies. Category-wise data on policy implementation shows that among institutional repositories only 10.81% have implemented policies. Among aggregating repositories, 2.70% have implemented policies, followed by Disciplinary repositories at 1.80% policies. The governmental repository complies with strict policy requirements of 0.90%.

7.FINDINGS

The study provides valuable insights into the status and characteristics of OARs in the Indian open access repository as catalogued in OpenDOAR. Here, we will discuss some key findings.

1. Institutional repositories form 85.6% of the total, highlighting their crucial role in open access. Governmental (0.9%), disciplinary (7.2%), and aggregating repositories (6.3%) have lower representation.
2. DSpace (56.76%) is the most widely used software, followed by E-Prints (29.73%). Other platforms like DSpace-CRIS, Open Repository, and Drupal are used in less than 2% of repositories.
3. Science (83.8%) and Technology (71.2%) dominate subject coverage in open access repositories. Arts, Humanities, and Mathematics have balanced representation (55.9%), supporting multidisciplinary research.
4. Journal articles (72.07%) and theses/dissertations (56.76%) are the most frequently available content. Other content types, such as patents (6.30%) and datasets (4.50%), have limited representation.
5. Only 16.21% of repositories have implemented open access policies, with institutional repositories at 10.81%. Disciplinary (1.80%) and governmental (0.90%) repositories have minimal policy adoption.

8. CONCLUSION

Overall, the study highlights the growing significance of institutional repositories in India's open-access ecosystem but points to several areas that require improvement, particularly in policy development, data-sharing practices, and governmental support. Strengthening these aspects will further enhance the impact and accessibility of Indian research on the global stage.

9. ACKNOWLEDGEMENTS

The authors used an AI-based language tool to improve grammatical correctness while writing the manuscript.

References

1) Chandrappa, N, V. R., & Harinarayana, N. S. (2024). Status of Open Access Repositories in the Maritime Field: A Review of OpenDOAR. *DESIDOC Journal of Library & Information Technology*, *44*(6), 433–440. https://doi.org/10.14429/djlit.44.6.20080

2) Dhanavandan, D. S. (2020). Open Access Repositories in the World: An Overview. *Library Philosophy and Practice (e-Journal)*, 12.

3) Foster, N. F., & Gibbons, S. (2005a). Understanding Faculty to Improve Content Recruitment for Institutional Repositories. *D-Lib Magazine*, *11*(01). https://doi.org/10.1045/january2005-foster

4) Foster, N. F., & Gibbons, S. (2005b). Understanding Faculty to Improve Content Recruitment for Institutional Repositories. *D-Lib Magazine*, *11*(01). https://doi.org/10.1045/january2005-foster

5) Ibrahim, S., & Beigh, I. N. (2019). Contribution of the UK Open Access Repositories to OpenDOAR. *Library Philosophy and Practice (e-Journal)*, 11. https://digitalcommons.unl.edu/libphilprac/2592

6) *Indian Institutional Repositories (IRs) reflected in the Directory of Open Access Repository (DOAR)_ A Case Study.pdf*. (n.d.).

7) Kalbande, D. T. (2019). Institutional Repository in Open DOAR: Status Quo India. *Library Philosophy and Practice (e-Journal)*, 10.

8) Kapoor, D. K. (2023). *Growth of Institutional Repositories in India: A Study*. https://doi.org/10.5281/ZENODO.8004900

9) Karadia, A., & Sahoo, D. J. (2021). A Comparative Study of India and Australia Open Access Repositories in OpenDOAR. *Library Philosophy and Practice (e-Journal)*, 9. https://digitalcommons.unl.edu/libphilprac/5770

10) Kuri, R., & Singh, M. (2020). Indian Institutional Reposit Indian Institutional Repositories (IRs) r ories (IRs) reflected in the Dir eflected in the Directory of Open Access Repository (DOAR): A Case Study. *Library Philosophy and Practice (e-Journal)*, 14. https://digitalcommons.unl.edu/libphilprac/4640?utm_source=digitalcommons.unl.edu%2Flibphilprac%2F4640&utm_medium=PDF&utm_campaign=PDFCoverPages

11) Mbughuni, A. (2023). Using of Open Access Institutional Repository Policy for collecting content in OAIRs. *Library Philosophy and Practice*, 0_1,1-28. https://www.proquest.com/publiccontent/docview/2815626127/abstract/5F9BBEFB000348E9PQ/1

12) Naqvi, S. H. (2021). The Growth of Open Access Literature: A Case Study of the OpenDOAR. *Library Herald*, *59*(3), 75–85. https://doi.org/10.5958/0976-2469.2021.00024.5

13) Nayak, S., & Parhi, B. K. (2019). Assessment of Open-Access Institutional Repositories of China on Directory of Open Access Repositories (OpenDOAR). *Library Philosophy and Practice (e-Journal)*, 12.

14) Parray, U. Y., Khan, A. M., Mir, A. A., & Mir, S. M. (2023). Unveiling the present status of open access repositories: A comparative analysis of India and China. *Library Management*, *44*(1/2), 120–132. https://doi.org/10.1108/LM-09-2022-0084

15) Pinfield, S., Salter, J., Bath, P. A., Hubbard, B., Millington, P., Anders, J. H. S., & Hussain, A. (2014). Open-access repositories worldwide, 2005–2012: Past growth, current characteristics, and future possibilities. *Journal of the Association for Information Science and Technology*, *65*(12), 2404–2421. https://doi.org/10.1002/asi.23131

16) Saikia, S., Manoj Kumar, V., & Nitesh Kumar, V. (2023). Growth and development of Open Access Repositories across the globe: A case study of Open DOAR. *Growth and Development of Open Access Repositories across the Globe: A Case Study of Open DOAR*, 9.

17) Wani, J. A., & Ganaie, S. A. (2024). The scientific outcome in the domain of grey literature: Bibliometric mapping and visualisation using the R-bibliometrix package and the VOSviewer. *Library Hi Tech*, *42*(1), 309–330. https://doi.org/10.1108/LHT-01-2022-0012

18) Wani, J. A., Sofi, T. A., Sofi, I. A., & Ganaie, S. A. (2023). The status of open access repositories in the field of technology: Insights from OpenDOAR. *Information Discovery and Delivery*, *52*(2), 164–174. https://doi.org/10.1108/IDD-11-2022-0119