CRITICAL ANALYSIS OF GOA UNIVERSITY INSTITUTIONAL REPOSITORY

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE GOA UNIVERSITY FOR THE DEGREE OF MASTERS OF LIBRARY AND INFORMATION SCIENCE

BY

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CERTIFICATE

This is to certify that dissertation entitled **"Critical Analysis of Goa University Institutional Repository"** submitted by **PRATHMESH PRAMOD PARSEKAR** in partial fulfillment of the requirement of the degree of Masters of Library And Information Science of Goa University is her own work carried out under the guidance and worthy of examination.

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Declaration

I declare that this dissertation entitled ***"Critical Analysis of Goa University Institutional Repository"*** is my original contribution and the same has not been submitted on any occasion for any other degree or diploma of this university or other university/ institute. To the best of my knowledge, the present study is the first comprehensive work of its kind from the area of Library and Information Science. The literature related to the problem has been cited.

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Prathmesh Pramod Parsekar

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

GU	Goa University
IR	Institutional Repository
WWW	World Wide Web
ETDs	Electronic Thesis & Dissertation
GS	Google Scholar
OAI	Open Archives Initiative
OAI-PMH	Open Archives Initiative Protocal for Metadata Harvesting
ROAR	Registry of Open Access Repositories
SHERPA	Securing a Hybrid Environment for Research Preservation and Access
IIT	Indian Institute of Technology
NDLI	National Digital Library of India
LBCL	Lakshminath Bezbarao Central Library
DELNET	Developing Library Network
ILA	Indian Library Association
SALIS	Society for Advancement of Library & Information Science
IIT	Indian Institute of Technology
IIM	Indian Institute of Management
NIT	National Institutes of Technology
ASU	Arizona State University

LIST OF FIGURES

LIST OF TABLES

CHAPTER-1

INTRODUCTION

1.0 Introduction

Research or knowledge production is both a deeply personal and deeply social activity. The activities of researchers all across the world contribute to the aggregation and advancement of knowledge. Furthermore, knowledge development is simply one aspect of the research process. Knowledge must be shared with other researchers and communicated in a format that is appropriate for different audiences in order to be beneficial. Scientists in impoverished nations have significant challenges in terms of resource generation and distribution. In many nations, the greatest hurdle for scientists and researchers is a lack of access to scholarly literature or articles on their subject. Although no solid statistics exist, anecdotal evidence shows that the situation in the developing world is serious and that, as a result, research in developing countries is undertaken without the critical input of international research. Scientists in underdeveloped nations face more than just a lack of access to literature and information. Another significant issue is the lack of awareness of research conducted in underdeveloped nations. It goes unnoticed. Nobody mentions it. Only a small percentage of articles published in developing nations become citation classics or are included in a list of essential papers in a new field of research. (Rani, 2011)

Institutions, particularly research institutions, generate a massive amount of scholarly knowledge as part of their research operations. These discoveries are published in journals, conference/symposium proceedings, books, and other forms of intellectual communication. Science and scientific communication are so intertwined that one cannot exist without the other. Scholarly communication is a complex and time-consuming process that involves a large number of people. Scholarly communication refers to the scientific community's explicit research findings, both formal and informal, that are made available to the public for consumption. These discoveries are thoroughly documented study reports known as "articles" or "papers," which may be influenced by the prevailing media employed to produce them. Unlike the books that are part of the trade, the authors or contributors of these papers publish them for free. Researchers, publishers, and libraries are major players in the formal publishing system. (Rani, 2011)

It is a set of services provided by a university to its community members for the long-term preservation of scholarly publications created by faculty, staff, and research scholars. Because the resources are created digitally and electronically, assembling a collection of any certain subject discipline or targeted user group is quite simple. (Rani, 2011)

In terms of its functions, it serves a dual purpose. On the one hand, it may be a self-generated knowledge base by the institution, and on the other hand, it could be a replacement model for the publication channel. The scholarly world is impacted extremely significantly by the coalition of these initiatives across diverse demographic strata. (Rani, 2011)

An IR is a collection of digital content created by an institution's teachers, staff, and students that is systematically structured and administered. This is a record of an institution's collaborative intellectual production that may be kept and used. They are the result of an institutional library's goal to gather, secure, and enable access to scholarly publications in an innovative, digital method. Institutional repositories are becoming more common as they have become an indispensable part of the scholarly world's information and knowledge sharing. (Rani, 2011)

The IR provides tools to assist academics, students, and researchers in disseminating institutional repository work to audiences outside of the institution. An institutional repository can be used as a supplement or a replacement for traditional modes of publication. (Rani, 2011)

By collecting and indexing academic and student work and making it more available to colleagues, funders, and employers, the institutional repository makes it easier for information seekers to find it. (Rani, 2011)

While the primary goal of an IR is to collect and preserve the intellectual output of a laboratory, department, institution, or other body, incentives and pledges to modify the academic communication process have also been shown to be powerful motivators. (Rani, 2011)

1.1 Introduction of IR

Scholarly archives are a well-established means of disseminating peer-reviewed (post-prints) and unreviewed scholarly material (pre-prints). Author archives, subject archives, and institutional archives are the three main forms of scholarly archives now in use. Subject archives, also known as central archives, house the literature on specific topic. (R, 2012)

According to Harnad, "author archiving is just self-archiving the article that the author has published in (peer-reviewed) non-OA journals." However, in this type of archiving, the authors will be responsible for the entire expense of establishing a self-archiving system.

The Institutional Repository, sometimes known as the Institutional Archive, or simply an IR, is a place where digital content and assets are preserved and may be searched and retrieved for later use. An IR supports all the following functions: import, export, identify, store, and retrieve digital assets. By storing digital content in a repository, scientists and institutions can better manage and protect it, allowing them to get the most out of it. Research outputs and journal articles, theses, e-learning materials, and research data are all examples of digital repositories. (R, 2012)

1.2 About Goa University

Goa University was established under the Goa University Act of 1984 (Act No. 7 of 1984) and commenced operations on 1 June 1985In the Indian state of Goa, the university provides higher education. It is situated on the Taleigao Plateau, overlooking the Zuari estuary, on a beautiful campus of 402 acres with modern infrastructure such as professor blocks, administrative buildings, libraries, sports facilities, student hostels, banks, post offices, and staff quarters. 24 hours a day, campus-wide Internet access with high bandwidth is accessible. (Goa University, 2022)

The University took over the enhanced role of Centre of Post-Graduate Instruction and Research (CPIR) which was set after the liberation of Goa by India in December 1961, by the University of Bombay (now Mumbai), in June 1962. Since 1985 Goa University offers graduate and post-graduate studies and research programmes. It is currently (2014-

19) accredited to the National Assessment and Accreditation Council (NAAC) in India with A Grade. The National Institutional Ranking Framework (NIRF) (an organ of Ministry of Human Resources and Development, Govt. of India) has currently (2021) ranked the University at 96 and has always been in first 100 since 2016 among the Indian Universities. Among the QS World University Rankings for 'BRICS countries 2019', Goa University is among the group of 241-250 universities. There are about 9000 universities in BRICS countries. QS University rankings - a World University rankings agency - has ranked Goa University in the range of 61-65 among Indian Universities for the year 2022 and among the QS World University Rankings for 'QS Asia University Rankings 2022', Goa University is among the group of 501-550 universities. (Goa University, 2022)

Over the past 35 years, the University has steadily expanded its reach, both in terms of the number of affiliated colleges – professional and general education numbering to 61, as well as the diversity of courses offered. These colleges offer various courses leading to a degree at graduate, post-graduate level. 12 of them are also recognized as research centres to offer Ph.D. programmes. The University, on its campus, has 1 Centre, 14 Departments and 7 schools. The formation of schools has been done at the start of the academic year 2019-20 with amalgamation of traditional departments to allow organic evolution of new courses. They offer programmes leading to Undergraduate degree (3), Masters degree (35), M.Phil.(20) and Ph.D. degree (25) in various disciplines. In addition, 9 recognised institutions in various disciplines situated in the state of Goa are also recognised for research programmes leading to Ph.D. degree by the University. (Goa University, 2022)

Over 30000 youth from all talukas of Goa are studying in affiliated colleges and over 2000 are enrolled for post-graduate programmes at the University campus. The percentage of women (over 60%) outnumber men (about 40%). (Goa University, 2022)

The University has made a significant impact at the national level in various areas of specialization and draws students in select disciplines from across the country. Geographically, Goa is located in an ecologically sensitive region along the Western Ghats and the Arabian Sea. Goa University has appropriately emerged as an important resource centre for research in the field of flora and fauna endemic to this region, as well as the marine environment. The Ministry of Earth Sciences has recognized Goa University's significant contribution in this domain, as a consequence of which a Centre of Excellence was established in Marine Microbiology. The Departments at the University have developed

excellent research facilities. Large funding for research is received from Central Government agencies such as University Grants Commission, Department of Science & Technology, Ministry of Earth Sciences, Ministry of Environmental Sciences and Climate Change, Department of Biotechnology, etc. For a relatively small university, Goa University attracts generous funding of research projects from national funding agencies which reflects upon the high quality of research undertaken at the University. The research outcomes (over 5500) in the form of papers, theses, etc., have been made available to the public over the university website in its publications repository. The Web of Science® reports about 1400 items on their database accruing over 16000 citations. The University publications have an h-index of 54. (Goa University, 2022)

In addition to the conventional graduate and postgraduate programmes, Goa University has also taken initiatives to provide innovative programmes. Some noteworthy initiatives are the National Resource Centre in Marine Science under the Ministry of Human Resource Development (MHRD) for the professional development of higher education using the MOOCs platform SWAYAM, the State Resource Centre for Women funded by Ministry of Women and Child Development, Govt. of India as well as Dept. of Women and Child, Govt. of Goa, the Study India Programme with Nihon University of Japan, etc. Goa University launched the Visiting Research Professors Programme (VRPP) from the year 2013-14 to bring luminaries in the field of liberal arts & literature, social and natural sciences, and other fields. The visiting professors interact with students, deliver lectures, offer courses, and work on collaborative research projects, or stimulate the creation of art installations and music performances with faculty and students. These visiting professors are found to generate a creative environment in learning and contemporary knowledge production practices with their intellectual and aesthetic endeavours. The programme is being supported by Directorate of Art and Culture, Government of Goa through generous grants and open to the general public too. (Goa University, 2022)

1.3 Definition

1. **According to** (Lynch, 2003) “An Institutional Repository is an organization based set of services which the organization offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the

stewardship of these digital materials, including long-term preservation, where appropriate, as well as organization and access or distribution"

2. **According to** (Foster, 2005) Institutional repositories are an electronic system that captures, preserves, and provides access to the digital work products of a community.

3. **According to** (Crow, 2002) , "An IR is a digital collection for capturing and preserving the intellectual output of a single or multi-university community"

4. **According to** (Drake, 2004) An Institutional Repository is a digital collection of a university's scholarly/ creative output. IRs are collects, preserve, and make accessible the knowledge generated by academic institutions. IRs also forms part of a larger global system of repositories, which are indexed in standardized way and searchable using one interface, providing the foundation for a new model of scholarly publishing.

5. **According to** (Bailey, 2005) An institutional repository includes a wide variety of materials produced by scholars from many units such as e-prints, technical reports, theses and dissertations, data sets and teaching materials. Some institutional repositories are also being used as electronic presses, publishing e-books and e-journals.

1.4 History of IR

On behalf of an institution, an IR is an online resource for keeping digital forms of research or academic materials, such as research articles, reports, theses, and dissertations. Such materials would have been published in print and stored in basic storage facilities. On the one hand, those storing formats would not give convenient access; on the other hand, tracing the required materials among them would be quite difficult. When a researcher wants to dig deeper into the research or write a paper, he or she must devote more effort to locating published literature for reference. The researcher may or may not be able to obtain the

required papers for reference after multiple attempts. This hole could be filled with IR, an information web technological method that first appeared in the late 1990s. (R, 2012)

Institutional Repositories were created at the same time as the World Wide Web (WWW). Physicist Paul Ginsparg of the Los Alamos National Laboratory in New Mexico founded the first online archive devoted to theoretical physics in 1999. (R, 2012)

1.5 Importance of IR

Institutions rely on repositories to manage and capture intellectual assets as part of their overall information strategy. A digital repository can store a wide variety of materials for various purposes and users. It can help with research, education, and administration. However, repository solutions that are built on open standards are the most feasible and long-lasting.

In the world of academia, knowledge and information transfer is impossible without IR. It is characterised as a controlled storage system with content stored on an institutional basis that offers services to specified communities with information derived from a variety of digital resources that heavily assist research. It is a really strong concept that has the potential to elevate the Institutions' status and prominence. By offering the Library with a new opportunity for outreach, a repository can be a facilitator for creating relationships within the institution.

The main benefit of IR is that it assists institutions in developing consistent and coordinated approaches to the collection, classification, storage, and retrieval of their intellectual assets. Audio-visual objects, datasets, presentations, learning resources, and research works are examples of intellectual assets that go beyond traditional publishing regimes. A well-managed strategy to such assets improves the efficiency with which existing research is used, improves learning experiences, and encourages collaboration inside and between disciplines and groups.

1.6 Functions of IR

- It is to publish and archive scholarly work of an institution locally, using authentic information sources.
- to ensure that scholarly work is preserved indefinitely.
- This is to provide constituent members of an institution with a simple and quick method of publishing and archiving their research on a local level.
- to present an integrated image of an institution's scholarly output and to serve as a single access point to it.
- To give broad access, visibility, and distribution of an institution's intellectual work; and to serve as a management self-evaluation tool.

1.7 Types of IRs

Repositories can be categorized on the basis of accessibility, document types and subject.

1.7.1 Open Access Repository

Open Access Repository is a repository that allows free access to its material. These repositories make their material available to a broader user base. Users do not need authorization to download the abstract or full text of the material from the repository.

1.7.2 Restricted Access Repository

Some repositories are labelled as limited or closed access repositories because they are intended to facilitate sharing inside specified organisations. This Repository is only accessible to students, professors, and members of the institutions. These repositories limit their users' ability to view full-text content. Before downloading content, users must request permission.

1.7.3 Learning Object Repository

Learning object repositories are collections of learning-related things. Learning objects are "things that may be reused during the learning process." For instance, a course curriculum and a PowerPoint presentation, among other things. A key feature of learning object repositories is the storage of actual content in addition to metadata.

1.7.4 Group Repository

This is a mash-up of many repositories. With a single URL, we can access all participating repositories. As an example, consider IIM consortia.

1.7.5 ETD Repositories

These are known as electronic thesis and dissertation repositories. They have electronic versions of the thesis and dissertation. They may comprise records from one or more institutions and may cover one or more issues. Vidyanidhi, Sodhganga, etc.

1.7.6 Disciplinary Repositories

Because they store materials on specific themes, these repositories are also known as subject repositories. For instance, consider Pubmed Central.

1.7.7 Source Repository

The source repository houses the original or main data generated during a research activity.

1.7.8 Output Repository

An output repository often contains published papers or other materials, but it may also contain published data items. An output repository's material will often comprise pre- or post-refereeing articles, working papers, research reports, and Ph.D. theses.

1.8 Role of libraries in the IR

The preservation of digital information is becoming increasingly important for a variety of research activities. Much of the institutional knowledge base and intellectual asset data sets have been converted to digital format. As a result, digital materials face a more pressing preservation dilemma. There is a recognised need to give practical help to institutional libraries in effective digital preservation and asset management in order to assure the continuous availability and future accessibility of digital information that is of value to the broader research community. (R, 2012)

Scholarship, publishing, and communication are becoming increasingly networked and digital in today's world. Due to IRS, libraries will be able to exhibit initiative and

leadership in a scholarly world that is being altered by technology. With various IR software and IR programme, libraries have evolved and continue to alter in order to meet information technology concerns. (R, 2012)

Administrative and technical workers, subject experts, and Library Professionals have all been involved in the creation of IR in the past. Reference libraries play an important role in assisting authors in submitting their work to IRS, as well as in training users on how to properly search such repositories and get scholarly literature from them. (R, 2012)

The basic function of libraries is to gather, store, describe, manage, and preserve the massive amounts of information generated by the institution. Persistent naming, defined metadata formats, and a metadata harvesting technique are all required. Libraries can form the Open Archive Initiative to develop and promote interoperability solutions that will make it easier for the IR to share content. (R, 2012)

The IR was created as a new method that allows libraries to use real, systematic leverage to expedite advances in research and scholarly communication, particularly through updating scholarly publishing through digital content licencing. (R, 2012)

Pre-prints of articles or research reports that have been uploaded for publication, the text of research articles that have been peer reviewed, conference proceedings, educational materials, project - based learning, doctoral theses, datasets from research studies, photographs and video recordings, and so on may also be found in the IR. (R, 2012)

The majority of libraries view the scholarly communication crisis as a crisis in literature availability. The importance of building Institutional Repositories is recognised by the scenario. Researchers, librarians, information specialists, archivists, records managers, administrators, and officials collaborate to create a successful IR of necessity. (R, 2012)

1.9 Contents

An Institutional Repository may contain a range of materials created by the institution's researchers, including such as

- Pre -print of articles or research reports submitted for publishing the text of journals articles accepted for publication.
- Revised text of published work with comments from academic readers.
- Conference paper
- Teaching material.
- Student's projects
- Doctoral thesis and dissertations
- Database resulting from research project
- Committee papers, administrative papers
- Computer software work of art.
- Photographs and video recordings

1.10 Benefits

The main primary advantages appear to include are –

a) For the users

1. The variety of knowledge that can be communicated is being expanded.

2. Possibilities to streamline and broaden distribution.

(b) For institution

1. Allowing intellectual property rights to be more efficiently used at the institutional level.

2. Making the most of existing information and content management systems.

3. Emphasizing the importance of intellectual capital's quality.

(c) For everyone

1. New means of scholarly communication provide opportunities.

2. A flexible method for enhancing existing scholarly communication.

1.11 Drawbacks

Following are the drawbacks of IR:

1. They have an impact on the institutional power balance because certain departments move quicker than others.

2. They rely on unproven long-term digital preservation methods.

3. They may require swift victories in order to maintain institutional support.

4. Initial costs may be substantial due to contributors' perceptions of high risks and their efforts to mitigate them.

1.12 Constraints of Academic IRs

- The lack of a well-defined institutional policy is a significant impediment to the growth of IR in academic libraries. Uncertainty will arise over the standards to be implemented for document inclusion in terms of the person depositing the document, the necessity for review and technical evaluation of the document, the sorts of documents to be included, and the level of access restriction. (Rani, 2011)

- Because IR is a recent phenomenon in academic libraries, there is a severe shortage of IR knowledge, particularly in emerging countries such as India. Many institutions, despite their earnest intentions to implement IR, failed owing to a lack of IR competence among both library and IT professionals. (Rani, 2011)

- The management and writers involved represent a significant bottleneck in developing an IR's content. Many institutions do not budget adequately for IR. Without appropriate finances, fundamental needs such as IR infrastructure and expertise availability cannot be met. (Rani, 2011)

- Another significant barrier is writers' indifference toward the time-consuming and long deposition procedure. (Rani, 2011)

- Ignorance of users in the absence of an effective literacy programme is another limitation, implying that no progress in IR can be expected.

- In the case of journals and conference proceedings, the copyright of a research publication normally rests with the publishers. Another limitation that must be addressed is the publisher's adamant refusal to accept the published item in IR and the writers involved in this subject. (Rani, 2011)

- While many universities in India have set up IRs, they have only made them available on their institute's LAN or on a single system for a variety of reasons, such as copyright issues with publishers or management's reluctance to expose its publications. Apathy on the part of creators/authors in terms of depositing material. (Rani, 2011)

- They have an impact on the balance of institutional power because some departments move faster than others. (Rani, 2011)

1.13 Software for Academic IR

For building IR, library requires a special digital library software the following are the some of the softwares such as EPrints, DSpace, FEDORA, CDSware, and other well-known open-source tools are used to establish repositories. They are available for download from their own websites or open source software repositories such as SourceForge, and are released under either the GNU public licence or the BSD licence. Users can explore and experiment with a variety of features, unique facilities, and exceptional capabilities in each piece of software. (Rani, 2011)

(a) Greenstone digital library software

The Greenstone digital library software was created by the New Zealand Digital Library Project at the University of Waikato. This is a research project aimed at developing the underlying technology for digital libraries and making it freely available so that others can use it to build their own collections. Roger McNab and

Stefan Boddie are the software's key designers. Greenstone is a bundle of applications for creating and distributing digital libraries. It digitally organises the material in preparation for publication on the internet or on CD-ROM. UNESCO and the human information NGO collaborated on the development and distribution of this software. It is free software that may be downloaded from http://www.Greenstone.org and is licenced under the GNU General Public License. (Rani, 2011)

(b) GNU E-Print Archiving software (Version 2.2.1)

The E-Print software was developed as part of a digital library venture at the University of Southampton in the United Kingdom. It's free to do that under the terms of the GNU General Public License. It's a Linux-based application that creates online archive libraries of electronic prints. The default configuration creates a research paper archive, but it can't be changed and used anywhere else. Each individual research paper (e-print) can be stored in multiple formats. The eprint can be submitted through a consumer www-based interface. Checks for data integrity are performed. (Rani, 2011)

(c) Dspace

DSpace is a platform that lets you capture items in text, video, audio, and data in any format. It disseminates it via the internet. It indexes your work so that users can find and obtain it. It keeps your digital work safe for the long haul. DSpace is a service that allows you to store and manage your research materials and publications in a professionally managed repository, increasing their visibility and accessibility over time. DSpace is commonly found in institutional repositories. It serves two primary functions:

- Facilitate the capture and intake of materials, as well as their information.
- List and search for the materials to make it easier to find them.

1.14 Benefits of Dspace

Dspace has the following benefits:

1. As soon as possible, disseminate your research findings to a global audience.

2. Exposure to search engines such as Google allows you to reach a global audience.

3. Keeping reusable instructional materials on hand for use with course management systems

4. Archiving and disseminating content that would otherwise be posted on your personal website

5. Keeping examples of student projects (with the students' permission)

6. Displaying student theses (with permission, of course)

7. Keeping track of your own publications and bibliography

8. Having a persistent network identity for your work that does not alter or break is important.

9. There will be no more page charges for pictures. In your published articles, you may provide persistent IDs for your photos.

1.15 Objectives and Aim of the Study:

1. To study the concepts, meaning and need of Institutional Repository (IR).
2. To know the content of IR in a single location.
3. To know the software requirement for the creation of IR.
4. To know about Goa University IR.
5. To know National and International IRs.
6. To create global visibility for an institutions scholarly research.

1.16 Hypothesis:

The hypothesis is a tentative statement that proposes an explanation to the research problem.

Accordingly, this study will examine the following hypothesis:

1. IR provides accessibility and availability of an organizational output.
2. IR helps in developing resource sharing but no such efforts are visualized.

1.17 Research Methodology:

1. Extensive review of literature available on topic.
2. Data analysis by browsing website of institution.

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CHAPTER-2

LITERATURE REVIEW

A literature review is a comprehensive collection of information gleaned from published and unpublished data sources in the researcher's area of interest. Journals, newspapers, magazines, reports, government publications, and digital databases are all examples of this. The survey's benefit is that it provides diverse viewpoints and approaches for investigating the problem, as well as identifies potential variables to study. Second, the survey may reveal that the study problem under consideration has already been explored, which could help resolve the decision dilemma. It also aids in condensing the study's scope into a manageable research subject that is both relevant and testable. (Deepak Chawla, 2011)

This literature review covers journals articles, conference proceedings, books, chapter in books, edited collection and internet documents.

According to (Smith, 2002) This literature review covers journal articles, conference proceedings, books and internet documents. The DSpace project by MIT Libraries and Hewlett Packard Laboratories has built an institutional repository system for digital research material. This paper explains the foundation for institutional repositories. Its execution in the DSpace system and MIT It also describes the plans for an open source DSpace that provides a useful test environment. With open science communication, long-term archive of fragile digital research materials.

(Abdul Jabbar, 2020) has investigated the level of accessibility and use of institutional repositories (IR) among researchers based on the questionnaires used for data collection by PhD students studying in seven faculties at the COMSATS Institute for Information Technology in Lahore. Results show that researchers rarely have access to IR and that access to publications is restricted.

(BICKNESE, 2003-2004) reveals that many college and university libraries have recently started experimenting with "institutional repositories" and other online digital repositories that allow for the centralised management and distribution of locally produced electronic

publications and records. The significance of university archives is usually underestimated, according to this researcher, which evaluates some of the literature suggesting that libraries adopt online digital repositories. The paper then looks at how institutional repositories may help college and university archives and why archivists should be involved in their conception and design.

(Elizabeth Yakel, 2008) examines the archiving implications of the United States' 2006 Census of Institutional Repositories, as well as follow-up interviews with institutional repository developers chosen by colleges and institutions. According to the findings, archivists often have a modest, continuous role in institutional repositories. Institutional repositories (IRs) are evolving into an extension of institutional repositories (archives).

(B K VISHALA, 2007) states the importance of institutional repositories has been acknowledged by various academic institutions as a vital infrastructure for scholarship. This paper aims to provide an overview of their various benefits and their role in the academic world.

According to (Melissa H. Cragin, 2010) has examined the Data Curation Profiles project's findings on who is willing to share what data with whom and when are presented. Institutional repositories (IRs) will contribute to the administration and mobilisation of scientific research data for e-research and learning. Once the attributes and techniques are sufficiently established, specific types of data will be well managed in an IR context. Findings from this study provided light on scientists' views on "shareable" data kinds. There have also been recorded cases of sharing, which provide insight into sharing challenges and related data abuse concerns.

(Hockx-Yu, 2006) examines the concerns and challenges of digital preservation confronting institutional repositories, as well as showing the Joint Information Systems Committee's (JISC) perspective on institutional repositories and major projects assisting UK institutions in addressing these issues. The widespread use of institutional repositories opens up new avenues for digital preservation. Much might be done to consider digital preservation from

the beginning, to involve authors, and to integrate digital preservation into repository operations. This article clearly defines JISC's position on digital repositories and its future plans for them.

According to (Genoni, 2004) Many libraries are grappling with the problems of creating and managing an institutional repository. This paper addresses the topic of content in repositories, arguing that librarians should approach content generation by employing some of the methods and abilities associated with collection management in more traditional systems. It also discusses the types of content that would be appropriate for institutional repositories, noting that numerous recent Australian papers have advocated for a more uniform and regulated approach to institutional repository content. This is deemed unacceptable, according to some.

According to (Feria Wirba Singeh, 2013) The readiness of Malaysian authors to self-archive their research output is likely to have a significant impact on the effectiveness of open-access repositories in supporting knowledge exchange. The results of this study were unaffected by performance expectations, effort expectations, social influence, or the enabling condition. This is the first time the UTAUT model has been used to evaluate self-archiving practises. which postulates the constructs of performance expectancy, effort expectancy, social influence, and facilitating factors when it comes to using technology.

According to (Doctor, 2008) Digital repositories are new technologies that are being used in academic institutions to share and manage knowledge. Icfai Business School in Ahmedabad is one of the few business schools in India to have set up an open-access institutional digital repository. Faculty and research staff's intellectual capital, such as scholarly papers and teaching materials, is collected, stored, preserved, indexed, and shared through digital repositories. Capturing this intellectual capital in a rising country like India is becoming increasingly crucial and inescapable for business schools. The experimental institutional repository was implemented using Open Source DSpace software.

(Mircea, 2007) gives an overview of Ozone's development as a shared institutional repository and how it has grown over time. Ozone is the deployment of DSpace as a multi-institutional repository, which began in the fall of 2003 as a project of the Ontario Council of University Libraries (OCUL) under the Scholars Portal programme. The aspects of the flexible and powerful platform that enabled us to construct the service are described and highlighted in this paper, as are the policies and benefits offered by Ozone.

According to (Todd A. Bruns, 2014) Booth Library began building an institutional repository, The Keep, in 2010, a project that included many library departments. Large-scale digitization of archival documents and migration of already established digital collections are examples of potential content recruitment for the repository. The repository's creation resulted in expanded accessibility, improved presentation of content that had previously been stored on out-of-date legacy Web platforms, and the recovery of damaged content that had been rotting on other digital storage formats. Booth Library has built a viable institutional repository in only two years by leveraging people from multiple departments and adding content from the Archives and Digital Collections divisions.

According to (Corrie Marsh, 2017) An institutional repository (IR) is a dynamic, online collection of research, writing, and projects completed by academics and students at a university. IRs are also useful tools for connecting a library with teachers and students. This report will discuss how to build a team of talented experts to build and market the repository, how to create a business plan and strategies for marketing and building a social media presence, and how to develop, process, and publish journals locally and sustainably in order to identify the services and content essential to a successful institutional repository.

(Okafor, 2017) This article looks into the content of five Nigerian universities' institutional repositories that are available on OpenDOAR. According to the data, the University of Nigeria Nsukka contains the most material (21,461). The data was collected through interviews and an observation checklist. Because of their excellent quality and content, it is vital that they be properly preserved for posterity in order to promote access and use. This local material is made up of university publications and other unusual objects. The five

universities studied generally use content from their postgraduate programmes to create their content. Open access is a policy at these institutions, and they use DSpace and Dublin Core metadata. According to the findings, enhancing university awareness of the importance of institutional repositories in boosting worldwide visibility is crucial. As a result, more workshops should be arranged to achieve this objective.

According to (Shelley, 2020) argues that maintaining an institutional repository is more of an operational function that requires dialogues with teachers, students, and other material contributors than it is a project in and of itself. However, there are initiatives involved in populating the repository once those stakeholders believe that it is a good, stable, discoverable home for their work. This article details how the author, a music librarian and institutional repository manager at Illinois State University, went about uploading thousands of items from the Wonsook Kim College of Fine Arts to ISUReD: Research and eData, the university's institutional repository.

According to (Sarr, 2010) Many libraries embraced institutional repositories when they were first offered as a way to assist and further the cause of open access and scholarly communication dissemination. Faculty, as has been widely documented, did not warm to the idea, and repositories have not filled up as expected. Rochester is putting their findings to the test to determine if a repository that goes beyond collecting final scholarly works and engages academics in the early stages of research development will be a more effective approach. A number of critical elements were identified by the Rochester team as being required to pique end-user interest. It must become a part of the research and writing workflow, allow collaboration with users outside the university, and give measurable proof of use. Based on their research, River Campus Libraries created IR+, an open source institutional repository software solution.

(Wong, 2013) investigates data archiving difficulties, reports on prevalent data treatment techniques at institutional repositories, and offers a list of recommendations for testing data archiving at the HKUST Institutional Repository. The abundance of data generated by modern research has sparked a growing debate over data management and infrastructure

development. Many universities and libraries, like the Hong Kong University of Science and Technology (HKUST) Library, are looking at ways to address this issue by using institutional repositories. The author conducted a case study using datasets from large institutional repositories as part of the investigation.

(Pickton Margaret, 2006) has focused his attention on the potential function of research students in an institutional repository at Loughborough University. Thirty-four research students were interviewed face-to-face. The interviews used a mix of closed and open questions to elicit the students' thoughts on publishing, open access, and the proposed Loughborough repository. Students were most interested in having access to complete theses, postprints, and conference papers as both writers and readers. The capacity to publish their work and get feedback and commentary, as well as the notion of open access, were the most crucial motivators for students depositing work in the IR. The possibility of not being able to publish somewhere later, copyright ownership, and plagiarism were the most significant deterrents.

According to (Edilene Maria Silva, 2018) Information and communication technology are being used to influence actions related to access to scientific information. To be more efficient and successful, repositories, which collect all of an institution's scientific output, must adhere to the principles set by the Information Architecture. This paper examines the institutional repository of the Federal University of Brasilia to see if it follows the criteria provided by Morville and Rosenfeld. This repository complies with several standards; nonetheless, it must address issues with the search system, accessibility, and service to the needs of users.

(Ferguson, 2017) explains how libraries generate and store open educational resources (OER) in institutional repositories (IR), including topics such as OER content preservation and versioning, copyright and licencing, funding, and personnel. Based on interviews and the literature, programmes at the University of Minnesota, the University of Kansas, and Grand Valley State University are particularly emphasised.

(Junior da Silva, 2017) verifies the implementation of digital preservation rules at Brazilian Federal Universities' institutional repositories (IRs). A sample of 26 IRs from Brazilian federal universities registered with Open DOAR was used in this study, representing 68 percent of these repositories. The key finding is that these universities' institutional repositories do not have any documented digital preservation plans, despite the fact that certain repositories mention in their institutional information policies that they intend to preserve digital material.

(Liu Shu, 2011) In his study, intends to educate library professionals on the technical aspects of deploying and using DigiTool, Ex Libris' proprietary software, to create an institutional repository (IR). The experience of Colorado State University Libraries in constructing an IR using DigiTool is described in this paper. Local customization; metadata and object intake; implementation of handles; integration with web discovery; and administration of statistics data are some of the topics that will be explored. The DigiTool is considered, which is a powerful, complicated, and relatively mature out-of-the-box IR platform that meets all of one's demands for establishing and maintaining an IR. Institutions interested in implementing and using DigiTool for a similar purpose will benefit from the practical experience and technical details on how to do so.

According to (Tramullas Jesús, 2006) Institutional repositories have grown in importance as a means of publishing, sharing, and archiving an organization's digital material. The majority of them rely on open-source software. Following an examination of the software's functionality, institutional repository initiatives are being implemented. Nonetheless, up to this point, the evaluations have been comparative, focusing on the features provided by each tool rather than on other considerations. To address this shortcoming, this study examines the several published models for evaluating institutional repository software, investigates the approaches used in each case, and offers a model. This model is geared toward the investigation and definition of informational-documental processes, users, collection characteristics, and the project's setting.

According to (Jennifer Ann Stevenson, 2015) Future research into institutional repositories is anticipated to uncover evaluation strategies and relevant guidelines, necessitating the creation of more case studies. This examination of the subject phrases connected with published journal articles throughout time provides a better understanding of how the area of institutional repositories has developed, evolved, and altered. The wide range of fields that use or have used institutional repositories, as well as the varied degrees of technology used, makes it critical to trace the evolution of the field of institutional repository research. Information visualisation, multidimensional scaling, and parallel coordinate analysis combined with temporal analysis make this work distinctive.

According to (Enar Ruiz-Conde, 2013) institutional repositories merely digital document storage facilities, or are they establishing themselves as a reliable means of disseminating scientific knowledge? This study examines the competitive climate of the Top 100 university repositories, considered market leaders in terms of involvement and penetration. The study also examines the basic functions of academic production, preservation, and dissemination in relation to issues such as the reputation of repositories and the institutions that run them. The findings reveal that repositories with a greater digital academic supply are more likely to produce evidence of scientific rigour.

According to (Bangani, 2018) The academic and societal implications of engineering electronic theses and dissertations (ETDs) at the North-West University institutional repository are investigated in this research. These impacts are calculated using citation counts from Google Scholar (GS) and altmetrics data from Dspace. Data from GS and the North West University institutional repository are used to calculate ETD conversion rates from educational output to academic research output. Nonetheless, there is no association between academic and societal repercussions, while some encouraging trends can be seen when looking at the origins of PDF views and citations by country.

(Anthonia Nwamaka Ejikeme, 2019) has examined the state of open-access institutional repositories in Nigeria. To x-ray the state of the art, an expository review of literature was employed, and descriptive informetrics was used to extract informetric data from two main

repository directories (Registry of Open Access Repositories and Directory of Open Access Repositories). According to the findings, Nigeria has twenty repositories from fourteen of the country's 153 universities; the bulk of the repositories (70 percent) use DSpace for archiving. Journal articles, theses, and dissertations are the most common contents of repositories in the country. While the study highlights Nigerian universities' shortcomings in exploring the potential of institutional repositories for wider dissemination of their scientific output, it also challenges the government and other stakeholders to develop a long-term framework for repositories development in the country.

(Aguillo, 2020) investigates the presence of IRs in 28 social tools (Academia, Bibsonomy, CiteUlike, CrossRef, Datadryad, Facebook, Figshare, Google+, GitHub, Instagram, LinkedIn, Pinterest, Reddit, RenRen, ResearchGate, Scribd, SlideShare, Tumblr, Twitter, Vimeo, VKontakte, Weibo, Wikipedia All Languages, Wikipedia English, Wikia, Wikimedia, YouTube and Zenodo) using a webometric approach. The findings demonstrate that most IRs do not have a strong presence in the most specialised tools, and even the most popular services do not have sufficient numbers. One possible cause for the low number of altmetric mentions is a lack of strategy in promoting IR material, as well as some questionable practises, primarily in URL naming.

According to (Henderson, 2010) Access to scientific publications is evolving at an unprecedented rate, thanks to the introduction of modern Internet technologies. Unpublished technical reports, dissertations, and other kinds of grey literature are becoming increasingly available to researchers around the world, even as the number of peer-reviewed publications grows tremendously. Taking advantage of this possibility, research groups and colleges are actively making their findings available on the Internet. The Institute for Research in Construction at the National Research Council ensures that all fire-related literature is archived in an institutional repository and made publicly available on the Internet. As a result, this approach has given fire researchers a vehicle to boost the visibility of their study, which has a number of benefits. The materials are a great source of scientific articles, studies, technical data, and conference papers for the firefighting community. A closer look at the Institute's fire-related literature in Google Scholar reveals citation patterns that demonstrate the importance of open-access, free material to fire researchers.

According to (Cho, 2014) The ‘institutional repository’ is transforming academic communication by giving open access to scholarly production. As the institutional repository becomes more widely used, library and academic communities have conducted research to improve its management policies and technology. This research used a co-word analysis of author keywords in articles from the SCOPUS database from 1997 to 2012 and discovered eight clusters that represent the intellectual structure of Institutional Repository research, including "Metadata," "Open Access," "Institutional Repository," "digital Library," "dSpace," "Copyright," "Preservation," and "Sematic Web." This study used a co-occurrence matrix based on Pearson's correlation coefficient to generate a hierarchical clustering of the words to better grasp these intellectual structures. This study used a PROXCAL programme to depict these intellectual structures after performing a multidimensional scaling analysis.

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CHAPTER-3

OVERVIEW OF INSTITUTIONAL REPOSITORY (IR) AT NATIONAL AND INTERNATIONAL LEVEL

3.1 Introduction

An institutional repository is a website that collects, preserves, and disseminates the intellectual output of an institution, particularly a research institution, in digital form. This would include items like research journal articles, peer reviews, and digital versions of theses and dissertations for a university, but it might also include administrative records, course notes, or learning objects generated during normal academic life. (contributors, 2018)

An institutional repository is a digital repository that is accessible to the general public. While most academic journal articles are exclusively available to subscribers and are not searchable by general search engines like Google, research papers in an institutional repository are open to the public and searchable by general search engines. Popular open source software includes DSpace, EPrints, and Bepress. (contributors, 2018)

3.2 Origin of IR

The IR has two origins: The Open Archives Initiative (OAI) and its Open Archives Initiative Protocol for Metadata Harvesting are linked with the concept of digital interoperability, which is linked to the Open Archives Initiative (OAI) and its Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The OAI was built on the principle of a "Universal Preprint Service," which has since been replaced by the open access movement. IRs are linked to the concept of a digital library, which collects, classifies, catalogues, curates, preserves, and provides access to digital content. This is equivalent to the traditional function of a library, which collects, houses, classifies, arranges, preserves, and gives access to analogue content. (contributors, 2018)

Today, there is a mashup that shows the locations of open-access digital repositories around the world. Repository 66 is a project based on data from the Registry of Open Access Repositories (ROAR) and the Open DOAR service (a directory and utility for international open access repositories) established by the SHERPA Foundation (Securing a Hybrid

Environment for Research Preservation and Access). Digital Commons, Eprints, DSpace, and Bepress are the most common IR software platforms (Digital Commons). (contributors, 2018)

3.3 Definition

6. **According to** (Lynch, 2003) "An Institutional Repository is an organization based set of services which the organization offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation, where appropriate, as well as organization and access or distribution"

7. **According to** (Foster, 2005) Institutional repositories are an electronic system that captures, preserves, and provides access to the digital work products of a community.

8. **According to** (Crow, 2002) , "An IR is a digital collection for capturing and preserving the intellectual output of a single or multi-university community"

9. **According to** (Drake, 2004) An Institutional Repository is a digital collection of a university's scholarly/ creative output. IRs are collects, preserve, and make accessible the knowledge generated by academic institutions. IRs also forms part of a larger global system of repositories, which are indexed in standardized way and searchable using one interface, providing the foundation for a new model of scholarly publishing.

10. **According to** (Bailey, 2005) An institutional repository includes a wide variety of materials produced by scholars from many units such as e-prints, technical reports, theses and dissertations, data sets and teaching materials. Some institutional repositories are also being used as electronic presses, publishing e-books and e-journals.

3.4 Software for academic IR

For building IR, library requires a special digital library software the following are the some of the softwares such as EPrints, DSpace, FEDORA, CDSware, and other well-known open-source tools are used to establish repositories. They are available for download from their own websites or open source software repositories such as SourceForge, and are released under either the GNU public licence or the BSD licence. Users can explore and experiment with a variety of features, unique facilities, and exceptional capabilities in each piece of software. (Rani, 2011)

3.5 IR at National level

3.5.1 IIT Delhi

The repository contains Theses and Dissertations, Scholarly publications of Institute faculty and students, Convocations, Links to the eNewsclips of IITD and other important links to NDLTD, ShodhGanga, NDLI, etc. (IT Delhi)

3.5.2 IIT Roorkee

Institutional repository of Indian Institute of Technology (IIT) Roorkee is a digital service of Mahatma Gandhi Central Library, IIT Roorkee. The repository collects and organizes archival documents, research publications, project reports, bibliography of patents, books and book chapters, etc. in digital format. (Indian Institute of Technology (IIT) Roorkee)

3.5.3 IIT Guwahati

The Institutional Digital Repository of Lakshminath Bezbaroa Central Library. This digital archive comprised of the Institutes' intellectual output. It manages, preserves and makes available the academic works of faculty and research scholars. The repository is established to facilitate the deposit of digital content of a scholarly or heritage nature,

allowing academics and their departments to share and preserve the content in a managed environment. (LBCL Digital Repository)

3.5.4 IIT Gandhinagar (Gujarat)

Digital Repository accepts documents viz., journal articles, conference papers, book chapters, working /technical papers, reports, theses and dissertations, presentations and any other resources submitted as part of academic requirement at the Institute and other forms of scholarly documents. (IIT GANDHINAGAR)

3.5.5 St. Aloysius College (Mangalore)

St. Aloysius College Institutional Repository is an open access institutional repository and serves as a place to permanently archive research materials and institutional Documents such as: Previously published materials (articles, book chapters,etc.),Conference works and unpublished scholarly works, Lectures, College Log Book and College Newsletters. (St.Aloysius College)

3.5.6 IIT Madras

In collaboration of West Germany, the Government of India established IIT Madras in the year 1959. IIT Madras has a central library which houses a huge collection of resources to provide access from bibliographic to full text and from print to electronic resources. It holds 213000 books, 78000 bound volumes of periodicals, 217335 standards, 12600 technical reports, 11900 theses, & 3100 microfiches amongst other things. The Central Library of IIT Madras has recently created a section dedicated to children as well. (Indian Institute of Technology Madaras, 2022)

3.5.7 IIT BHU

IIT BHU was earlier known as Institute of Technology BHU and it was designated as IIT BHU in 2012. The IIT BHU has several departmental libraries and one Main Library.

The Main Library of IIT BHU has a rich collection of print and electronic books, theses and other resources such as e-journals, standards, databases, etc. related to engineering, science & technology, humanities, and social science. It houses more than 100000 books, 22500 textbooks, 8,740 SC/ST book bank, 17738 bound volumes of periodicals, 12000 compact discs and hundreds of thesis and dissertations to promote teaching, learning and research activities in the institution. (IIT BHU, 2022)

3.5.8 IIM Bangalore

The Indian Institute of Management Bangalore was founded in 1973. It has a large library to support business-related teaching, learning, research, and consulting activities. The Library also offers a variety of intense training programmes on a regular basis to graduates, diploma holders, and vocational apprentices. It houses a large collection of print books (519144), electronic books (2933) thesis (1273), bound volume (41434), databases (101), project reports (13208), micro documents (20019), e-journals (9219), and other materials. (Indian Institute of Management Banglore, 2022)

3.5.9 IIM Kozhikode

The Indian Institute of Management Kozhikode was founded in 1996 by the Indian government in partnership with the Kerala government. The IIMK library has provided its users with the greatest and most up-to-date management and business materials. The Library's mission is to broaden its users' knowledge while also improving their abilities and performance. It houses a large collection of books (35,500), e-books (200,000), journals (270), e-journals (20,000), videos (274), and annual reports (220), among other things. (IIM Kozhikode , 2022)

3.5.10 NIT Goa

In the year 2010, the National Institutes of Technology Goa was established by the Government of India. NIT Goa is declared as an institute of national importance by the NIT Act-2007. It has set up quite a big library to support teaching, learning, and research

activities through various resources and services. The Library maintains both quality and quantity of resources related to science, technology, engineering, management, commerce, economics, communication, ethics, and other subjects. It offers thousands of books, e-books, journals, magazines, and audio-video materials. (Department of National Institute of Technology Goa, 2022)

3.6 IR Initiatives at National level

Many major institutions in India, such as IITs, IIMs, IISc, and universities, have already taken the lead in establishing institutional repositories. Various government and professional entities are also interested in assisting these institutions and universities in the development of intellectual repositories. The Government of India has established the Knowledge Commission (KC) to develop a clear road map for higher education institutions in India to take initiatives such as library upgrades and the creation of institutional repositories. Similarly, the University Grant Commission (UGC) has already established a distinct organisation, the Information Library Network (INFLIBNET), with the goal of modernising libraries and establishing knowledge hubs for accessing and sharing extensive research knowledge. INFLIBNET offers specialist training and library networking among its member institutions and universities in order to choose, manage, preserve, and disseminate academic information. Some professional organisations and societies, such as the Developing Library Network (DELNET), the Society for Advancement of Library and Information Science (SALIS), and the Indian Library Association (ILA), are also interested in library modernisation, training, and the establishment of IRs. (Kalbande, 2012)

3.7 Major Problems of IRs in India

Whenever an institutional repository venture is initiated, it is initially planned with the institution's and the initiative's objectives in mind. After that, a prototype is created, tested, and implemented. The institutional repository is designed and implemented at a larger scale after reaching good results, and then tested again. Some of the selected problems and solutions of IR initiative are:

1. **Mindset of Authority-**

   The proposal for an institutional repository is usually made through the library manager. While debating the subject in the absence of the librarian, the higher authorities of the institutions are hardly convinced that the librarian can conduct this extra-ordinary intellectual activity. Because proper recognition of the library profession has yet to be established in society, a new generation of librarians who are highly educated, technically sound, technologically prepared, and committed to the library profession are now ready to take the leap. As a result, it is up to this generation to persuade the higher authorities.

2. **Lack of Presentation Skills-**

   Since the decade, it has been observed that librarians' presentation skills have deteriorated significantly. As a result, they are unable to persuade the appropriate authorities to implement a programme such as IR in their individual firms. As a result, many people believe librarians are unfit to take on new projects. The new generation of librarians must change this image. The proposal should be presented to the higher authorities in the best possible way, including audio-visual and other presentation aids.

3. **Financial Crunch-**

   The mindset is clear the authorities will not grant more funds for expansion and innovation unless the initiative is critical to the organisation and society as a whole. The argument for new generation librarians should be presented in such a way that the investment will be shown to benefit the institutions/organizations in the future. Alternative budgeting methods and potential money from various sources can also be presented for consideration.

4. **Introspection by the Librarians-**

   The issue of the mind and attitudinal behaviour is linked not only to authority but also to librarians. Librarians should be required to challenge conventional thinking and develop into role models. Due to a variety of issues, the authorities may have limitations and/or be unable to approve the plan. The librarians should not believe that their proposition is being rejected by the authorities. This is a common misunderstanding.

5. **Sustainability-**

   The construction of an IR is a time-consuming and challenging task that necessitates a significant amount of labour and expenditure. As a result, maintaining and sustaining the IR is essential for long-term preservation. The material is reviewed, the hardware is revised and updated, and accessibility is maintained, among other things. During the web survey, it was discovered that the majority of institutions and universities are not updating, revising, or maintaining their IR on a timely basis.

6. **Visibility-**

   Many organisations, such as the Defence Research and Development Organization (DRDO) and other research institutions in India, have built IRs but are unwilling to share them with the public.

3.8 IR at International level

3.8.1 ASU Digital Repository (Arizona State University)

Designed to store, index, and share the university's creative and scholarly output. Supports almost any type of content, including text, images, audio, video, data sets, and more. (Arizona State University, 2022)

3.8.2 University of Zimbabwe

The University of Zimbabwe Institutional Repository (UZ eScholar) is a digital service that collects, preserves, and distributes scholarly content produced by the University of Zimbabwe community. UZ eScholar contains journal articles, book chapters, postgraduate thesis/dissertations, conference papers, pre-prints, working papers, technical reports, progress reports, project reports, among others. The content is mostly available in full text, except in some instances where only the bibliographic information with an external link to the full text are provided. (University of Zimbabwe)

3.8.3 The Carolina Digital Repository (University of North Carolina)

Provides access to the scholarly work and research files of faculty, students and staff at the University of North Carolina at Chapel Hill. (Arizona State University, 2022)

3.8.4 Credo (University of Massachusetts)

Credo is an online repository containing the digital collections held by the UMass Amherst Libraries' Department of Special Collections and University Archives (SCUA). (Arizona State University, 2022)

3.8.5 DASH (Harvard University)

Central, open access repository for the scholarly output of faculty and the broader research community at Harvard. (Arizona State University, 2022)

3.8.6 Duke Space (Duke University)

Provides access to recent Duke **dissertations and thesis** as well as access to university records and other related digital content. (Arizona State University, 2022)

3.9 Status of IRs in South Asia

The development of IRs in South Asia is constantly increasing, though at a slower rate than in the industrialised world. Though Sri Lanka, and Bangladesh have high scores, other countries must progress in order to manage research for improved access and retrieval. The low amount of IRs from nations like Afghanistan and Pakistan could be linked to the region's political instability. In a country like Afghanistan, intellectual content is constantly under attack, and by building more and more IRs, scholarly content can be preserved for the long term. (Sumeer Gul, 2020)

3.9.1 Operational status

The operational state, as well as a better IR score, are indicators of the administrative set-up of IRs' academic dedication to their parent universities. However, some dormant IRs must reinvent themselves in order to glorify and emphasise their intellectual production while maintaining the benefits of the self-archiving mechanism. By building and gearing functional and workable IRs, institutional technological teams can improve academic material. (Sumeer Gul, 2020)

3.9.2 Content management policies

In South Asia, the content management strategies of IRs are not promising. Administrators should take this matter seriously so that content production and administration can be done in a well-defined manner. The successful usage and advocacy of IR-aligned content is strongly reliant on well-defined content management policies that must be adequately recorded and populated**.** (Sumeer Gul, 2020)

3.9.3 Software usage

The use of DSpace as a repository-building programme in South Asian IRs has remained a priority, owing to the fact that "DSpace is open source software that is simple to install and provides a suitable foundation for IR management." "Using DSpace for an IR provides a user-friendly interface and quick access to the content because the papers are organised by communities (faculties), sub-communities (departments), and collections (material categories)." (Sumeer Gul, 2020)

3.9.4 Web 2.0 tools

Web 2.0 is yet another goal for South Asian IRs to attain in order to create a more interactive digital academic environment. Though some tools, such as RSS and Atom, are prominent in IRs, other tools must be adapted in order to provide a more communicative set-up in the form of interactive IRs. Adoption of more Web 2.0 tools will aid in the transition to an interactive learning approach. (Sumeer Gul, 2020)

3.9.5 IR Content

Administrators of IRs must educate the scholarly community (faculty and scholars) on submission methods so that IRs can be stocked with a varied range of digital content, resulting in a high score graph in terms of populated items. (Sumeer Gul, 2020)

3.9.6 Content type

Though IRs exhibit diversity in hosting intellectual output, more emphasis should be placed on hosting content that receives a lower score in IRs, as journal articles, books/book chapters, theses and dissertations, and conference papers are all seen on a larger scale. (Sumeer Gul, 2020)

3.9.7 Repository customization

The majority of repositories are tailored to the demands of their respective institutions. The repositories which have not been modified yet need to be arranged such that a well-managed content production and usage may be done through them. (Sumeer Gul, 2020)

3.9.8 Interface language

English as the main repository interface language is a serious concern. Since the South Asian region has a diversity in terms of languages, the interfaces of the IRs need to be orchestrated in a way that more and more language interfaces will reflect the repository spheres in order to achieve an open academic platform without any language barrier. (Sumeer Gul, 2020)

3.9.9 Interoperability

For exporting the metadata, IRs need to incorporate protocols designed for providing an application-independent harvesting framework to metadata-harvesters. There are many protocols for harvesting metadata; some are proprietary, while some are available by means of open source. Repositories today widely use open source metadata harvesting protocols, i.e. OAI-PMH (used by the majority of the IRs) because of its application-independent harvesting framework. The OAI-compliant repositories expose the structured data (metadata) via OAI-PMH for harvesting by service providers for creating value-added services. In order to facilitate metadata harvesting, IRs should offer their metadata through various harvesting protocols like OAI-PMH. The creation of repositories is growing day by

day, and so is the inclusion of metadata of distributed nature. In order to encourage the repurposing of data, IRs need to achieve an interoperable environment through various protocols that will simplify the process of harvesting for staff by allowing nontechnical users to harvest metadata in various formats without dealing with issues relating to XML validation or character encodings. (Sumeer Gul, 2020)

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CHAPTER-4

DATA COLLECTION & ANALYSIS

4.1 Institutional Repository: Goa University, Goa

The Institutional Repository at Goa University (IR@GU) was established in 2015 with the goal of collecting, preserving, and disseminating the publications of Goa University staff and students. The repository database is populated with legacy data from secondary sources, including bibliographic information on articles published since the university's founding year (1985), and full-text is added when it becomes available (from authors or other sources). The full-text is added after the bibliographic data has been verified. Only roughly 1,000 ancient items are still missing full-text publications.

The Goa University Institutional Repository collects and deposits the publications of the faculty as well as research scholars. The theses undertaken by research scholars are also published in the repository.

Goa University use open source software Dspace, version 6.3 created by MIT. The coverage of Repository is Multi- disciplinary. URL : http://irgu.unigoa.ac.in/drs/

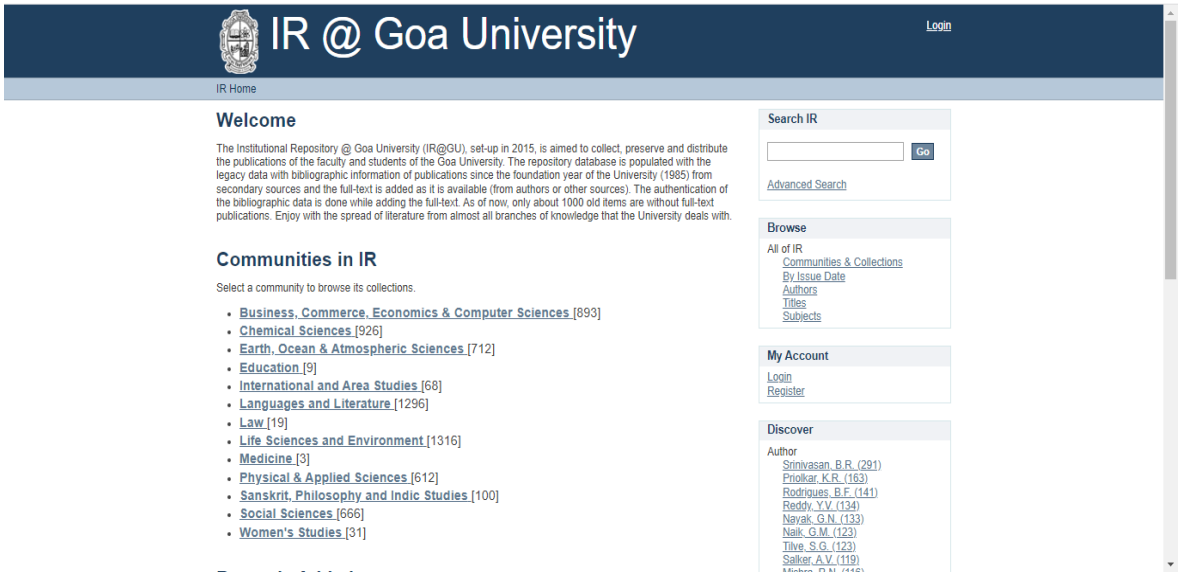

Figure 1: Webpage of IR @ Goa University

4.2 Data Analysis and Findings

The IR of the Goa University has content collection from the years 1981 to 2022. It can be noted that there are contributions in IR from the affiliated colleges, recognized institutions, and Goa University Departments.

4.2.1 List of collections and Years:

Table 1 :

YEAR	COLLECTIONS
1981-1989	224
1990-1999	1082
2000-2009	1722
2010-2019	2923
2020-2022	703

From the table 1 it can be seen that Repository has collection of articles from the year 1981 onwards. There is continuous growth of articles in the collection of repository over the years.

4.2.2 Document Type and Collection

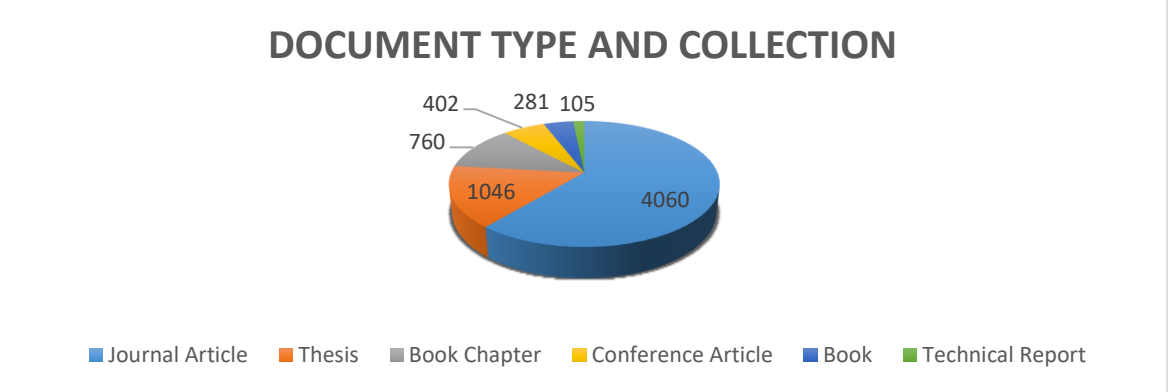

Figure 2: Document Type and Collection

From the above Figure 2 it can be seen that Journal Articles are more followed by Thesis and Technical Reports are lowest.

4.3 Communities

There are total 13 communities in IR. They are

1. Business, Commerce, Economics & Computer Sciences
2. Chemical Sciences
3. Earth, Ocean & Atmospheric Sciences
4. Education
5. International and Area Studies
6. Languages and Literature
7. Law
8. Life Sciences & Environment
9. Medicine
10. Physical & Applied Sciences
11. Sanskrit, Philosophy and Indic Studies
12. Social Sciences
13. Woman Studies

4.3.1 Community wise contribution to IR:

Table 2:

COMMUNITY	CONTRIBUTION
Business, Commerce, Economics & Computer Sciences	893
Chemical Sciences	926
Earth, Ocean & Atmospheric Sciences	712
Education	9
International and Area Studies	68
Languages and Literature	1298
Law	19
Life Sciences & Environment	1316
Medicine	3
Physical & Applied Sciences	612
Sanskrit, Philosophy and Indic Studies	100
Social Sciences	667
Woman Studies	31

From the Table 2 it can be assumed that the community of Life Sciences & Environment has highest number of contribution followed by Languages and Literature community and the community of Medicine has lowest contribution.

4.3.2 Contribution from Affiliated Institutions:

Table 3:

AFFILIATED INSTITUTION	CONTRIBUTION
Dnyanprassarak Mandal's College and Research Centre, Assagao	5
Fr. Agnel College of Arts & Commerce, Pilar	2
Government College of Arts, Science and Commerce, Quepem	5
Narayan Zantye College of Commerce, Bicholim	6
St. Xavier's College, Mapusa	2
VVM'S Shree Damodar College of Commerce & Economics, Margao	9
Nirmala Institute of Education	9
Parvatibai Chowgule College of Arts & Science, Margao	2
V. M. Salgaocar College of Law, Panaji	19
Goa College of Pharmacy, Panaji	3
Goa Engineering College, Farmagudi	2

From the Table 3 it can be assumed that V. M. Salgaocar College of Law, Panaji has highest number of contribution followed by VVM'S Shree Damodar College of Commerce & Economics, Margao and Nirmala Institute of Education and Fr. Agnel College of Arts & Commerce, Pilar, St. Xavier's College, Mapusa, Parvatibai Chowgule College of Arts & Science, Margao and Goa Engineering College, Farmagudi has the lowest contribution.

4.4 Contribution from University Departments:

Table 4:

DEPARTMENTS	CONTRIBUTION
Goa Business School	865
School of Chemical Sciences	925
School of Earth, Ocean & Atmospheric Sciences	457
International and Area Studies	68
Dept. of English	267
Dept. of French	40
Dept. of Hindi	408
Dept. of Konkani	272
Dept. of Marathi	282
Dept. of Portuguese	26
Dept. of Biotechnology	154
Dept. of Botany	561
Dept. of Microbiology	372
Dept. of Zoology	267
Electronics	170
Mathematics	70
Physics	370
Philosophy	100
Dept. of History	220
Dept. of Library and Information Science	19
Dept. of Political Science	254
Dept. of Sociology	141
Women's Studies	31

From the Table 4 it can be assumed that School of Chemical Sciences has highest number of contribution followed by Goa Business School and Dept. of Library and Information Science has the lowest contribution.

4.5 Top 10 contributors in IR and their Departments:

Table 5:

AUTHORS	CONTRIBUTIONS	DEPARTMENT
Srinivasan, B.R	291	School of Chemical Sciences
Priolkar, K.R.	163	Physics
Rodrigues, B.F	141	Dept. of Botany
Reddy, Y.V.	134	Goa Business School
Nayak, G.N.	133	School of Earth, Ocean & Atmospheric Sciences
Naik, G.M.	123	Electronics
Tilve, S.G.	123	School of Chemical Sciences
Salker, A.V.	119	School of Chemical Sciences
Mishra, R.N.	116	Dept. of Hindi
Bhat, D.J.	112	Dept. of Botany

From the Table 5 it can seen that Srinivasan, B.R i.e. 291 has highest contribution followed by Priolkar, K.R. i.e. 163 and many others.

CHAPTER-5
CONCLUSION AND SUGGESTIONS

5.1 CONCLUSION

Goa University IR was created in the year 2015. The repository database is populated with legacy data from secondary sources, including bibliographic information on articles published since the university's founding year (1985), and full-text is added when it becomes available (from authors or other sources). An open source software Dspace, version 6.3 is used to create IR. The IR has Journal Articles, Thesis, Book Chapter, Conference Articles, Book and Technical Reports. The Goa University IR collects and deposits the publications of the faculty as well as research scholars. There are total 13 communities in the IR and 23 Departments.

The community of Life Sciences & Environment has highest number of contribution followed by Languages and Literature community. The Dept. of School of Chemical Sciences has highest number of contribution followed by Goa Business School. Among the authors Srinivasan, B.R has highest contribution in IR. In the IR the Journal Articles are more followed by Thesis and Technical Reports are lowest. There is continuous growth of articles in the collection of repository over the years. Besides, Departmental Collection IR has also collection from the 11 Affiliated Institutions. Among the affiliated institutions V. M. Salgaocar College of Law, Panaji has highest number of contribution. The IR can be accessed through the website of GU through Library and also from Knowledge Portal. The user interface of the IR is user- friendly.

Both the Hypothesis,

1. IR provides accessibility and availability of an organizational output.
2. IR helps in developing resource sharing but no such efforts are visualized.

are true and accepted.

5.2 SUGGESTIONS

1. Question papers and Dissertations of the students should be uploaded in the IR.
2. Annual Reports are available from the year 1985 they are shown separately but they can be part of IR.
3. Most of the time it is noted that IR takes long time to open.
4. Awareness about IR should be created among students.

CHAPTER-6

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