

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

---

Summer 7-26-2022

## Factors Affecting the Development of Open Digital Repositories in Pakistan: A Chief Librarian's Perspective

Bashir Ahmed

*University of Engineering & Technology, Taxila*, bashir486@gmail.com

Rubina Bhatti Prof. Dr.

*The Islamia University of Bahawalpur*, dr.rubytariq@gmail.com

Shakeel Ahmad Khan Dr.

*The Islamia University of Bahawalpur*, shakeel.ahmad@iub.edu.pk

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Scholarly Communication Commons](#)

---

Ahmed, Bashir; Bhatti, Rubina Prof. Dr.; and Khan, Shakeel Ahmad Dr., "Factors Affecting the Development of Open Digital Repositories in Pakistan: A Chief Librarian's Perspective" (2022). *Library Philosophy and Practice (e-journal)*. 7328.

<https://digitalcommons.unl.edu/libphilprac/7328>

# **Factors Affecting The Development of Open Digital Repositories in Pakistan: A Chief Librarian's Perspective**

By

Bashir Ahmed,  
Senior Librarian  
University of Engineering & Technology, Taxila

Prof. Dr. Rubina Bhatti  
Dean Faculty of Arts  
Department of Library & Information Science  
The Islamia University of Bahawalpur

Dr. Shakeel Ahmed Khan  
Assistant Professor, Department of Library & Information Science  
University of Sargodha

## **Abstract**

**Purpose** – The purpose of this paper is to present chief librarians' viewpoint about open repositories in Pakistan. This study appraised the factors that affecting development of open repositories in Pakistan.

**Design/methodology/approach** – The study collected data by mean of In-depth literature review, scan of Open Access Directory of repositories (OpenDOAR), through interview & discussion with chief librarians of renowned university libraries.

**Research limitations** – This study discovered the factors that affect building open digital repositories in Pakistan through collected data by means of literature review, interview & discussion with chief librarian. The results are limited to interview interpretation of the interview and discussion with Chief Librarian of selected university libraries and the scan of the web and Open Access Repository Directory OpenDOAR.

**Practical implications** – The results are useful for stack holders of institutes, organization and other libraries to take care of these factor while planning to develop open access repositories in Pakistan.

**Originality/Value** – The researchers contributed to fill the identified gap and have some recommendations in this regard.

**Keywords** – Open Repositories, Digital Repositories, Institutional Repositories Pakistan

## **1. Introduction**

After the digital revolution, libraries has transformed (Fiels, 2015), which resulted in change in library operations including resource sharing (Garg, 2015). From the digital revolution, digital libraries emerged which are collection of digital items and options to store and retrieve information and navigate around the collections, closely related to them are emergence of institutional or digital repositories and not limited to one department, institutions or even on a subject only (R. E. Jones, Andrew, & MacColl, 2006).

Raym Crow (2002) defined an institutional digital repository as “*digital repository may possibly be any collection of digital material hosted, owned or controlled, or disseminated by a college or university, irrespective of purpose or provenance*”. These repositories are significant for academic sector to establish and detained scholarly assets as a share of their information policy (Hayes, 2005). Digital repositories have been established by promising academic institutes, government agencies, engineering organizations, libraries etc (Lagoze, Lynch, Waters, Van De Sompel, & Hey, 2006).

University libraries establishes digital institutional repositories to offer its members the digital information material (Lynch, 2003). The purpose of universities is to launch digital repositories is to boost the visibility and impact of university research output (Suber, 2007).

### **Background with Special Reference to Pakistan**

Pakistan is a developing country, according to Pakistan Education Statistics 2015-16 by National Education Management Information System (2017), total enrollment to

universities at postgrad level is 1.355 million out which 84% are in public sector universities and 16% are in private sector. University/DAI is a place where knowledge is intensively created, generated, and shared in ongoing academic life of learning, teaching and research. Farida, Tjakraatmadja, Firman, and Basuki (2015) argued that scholarly assets of universities must be preserved and publically available.

The sole purpose of this research study is to determine the existing factor which affects openness of digital repositories not confined to a single subject, institute or any organization in Pakistan.

### **Objectives of the Study**

1. To present an overview of present situation of open repositories in Pakistan.
2. To determine factors affecting open digital repositories
3. To provide practicable suggestions for developing open repositories in Pakistan

### **2. Review of related literature**

There is a healthy amount of literature on repositories which covers various aspects related to digital libraries or repositories. Numerous issues related to architecture, interoperability, metadata standards, copyright etc have been discovered in the studies (Gadd, Oppenheim, & Proberts, 2003; Guy, Powell, & Day, 2004; Ochoa & Duval, 2009; Palavitsinis, Manouselis, & Sanchez-Alonso, 2017) which are Spartan to initiate digital repository projects.

Ghosh (2009) observed electronic theses in Indian educational institutions covering nine ETDs digital libraries, primarily the author explored the potentials for creating national repository to deposit theses, studied current situation of deployment of ETD repositories, subject covered, policy for access, searching and other added services.

Findings exposed that majority of theses in India are being produced electronically; and there is no plan mechanism as far as government is concern to store and disseminate. Varatharajan and Chandrashekara (2007), contemplate theses & dissertation as productive source of information. In a study, Roy, Biswas, and Mukhopadhyay (2013) highlighted the existing situation of open access formal digital repositories of India. The author explored features of all well-known digital repositories as per their content types, repository type, records, software used, disciplines covered, languages, procedural and working issues, and policy stuff. The study projected various methods for refining nationwide development of repositories following international standard. The study has identified numerous key issues to deal for successful digital repository initiatives such as contents quality, metadata standards, preservation procedure, workflow design, customization and practical disclaimers of software, rights policy, OAI-PMH compatibility etc. that prerequisite to be appropriately considered beforehand developing digital repository for any institute.

Gonçalves, France, and Fox (2001) argued that union of digital libraries are composed of dispersed independent information services but offers users variety of services. Lagoze et al. (1998) described structural design of internationally dispersed, federated digital libraries.

There are some studies which focus on what software should be used for creating digital repositories like (Bainbridge, Osborn, Witten, & Nichols, 2006; Doctor, 2006; Nixon, 2003; R. Jones, 2004; Roberts, 1997) and some researchers discussed various features of institutional repositories for example (Lynch, 2003; Teper & Kraemer, 2002; Akça, Taşkın, & Berać, 2014).

Loan and Rather (2007) discussed that Open access digital repositories offers barrier less and free access to contents for study and research to consumers globally while presenting an Indian perspective of open access digital repositories, further Digital repositories resolves the high price and authorization crises for scholarly materials

### **Design/methodology/approach**

The current paper is based on Interviews conducted for my PhD study “*Prospects of Developing Digital Repositories of Electronic Theses & Dissertations (ETDs) in University Libraries of Pakistan*”. Only those questions are included which are relevant and within the scope of this paper. The Data was collected by mean of In-depth literature review and Interview of re-known selected Chief Librarians. Chief Librarians of the following universities are included for the scope of this paper:

1. Allama Iqbal Open University Library, Islamabad
2. Quide-e-Azam University Library, Islamabad
3. COMSATS University Library, Islamabad
4. NUST University Library Islamabad
5. University of Engineering & Technology, Lahore
6. The Islamia University of Bahawalpur Library, Bahawalpur

### **Practical Implications of Results**

This study is important as it attempts to identify factors that affects to launch open digital repositories. This study also provides practical solutions to handle these factors while planning to establish open digital repositories or institutional repositories.

## **Limitations of the Study**

This study explored the open repositories situation in Pakistan through scan of open repositories in Pakistan and find factor that affect adoption of open digital repositories in interviews with Chief Librarian of University Libraries. Results are limited hence viewpoint of few chief librarians is included but carries immense weightage as these libraries and librarians represents one of the preeminent in Pakistan.

## **Findings:**

### **Finding from Literature review & Scan of the Web.**

According to online ranking of repositories listed by Consejo Superior de Investigaciones Científicas (2016), there are 2275 open access repositories listed in Ranking Web of Repositories worldwide, out of which 50 belongs to south Asia (41 India, 5 Sri Lanka, 4 Bangladesh). No single repository of Pakistan is included in the ranking. HEC repository is not ranked there too, despite of the fact there are 180 Universities/DAI and their affiliated engineering and medical colleges recognized by Higher Education Commission (HEC, 2016) . According to The Directory of Open Access Repositories - OpenDOAR (2016), there are 3279 open access repositories worldwide out of them only Three belongs to Pakistan which are Pakistan Research Repository by HEC, eCommons@AKU by Aga Khan University and Akhtar Hameed Khan Research Centre (AHKRC) Digital Library by Institute of Rural Management (IRM) & National Rural Support Program (NRSP). OpenDOAR is a reliable directory which provides perceptive tool to find repositories and users are able to explore using diverse approaches like subject, content type, repository type, country, language and software. Pakistan Research Repository is solely devoted to PhD dissertations only and

much of the scholastic work is dumped on library shelves which need to be digitized and make it available online by developing digital repositories of ETDs.

As scan of the web, open repository directories and literature suggested, in Pakistan, the situation of institutional open repositories of is miserable.

### **Findings from Interviews**

Following factors emerged from interviews and discussion with the chief Librarian.

#### ***Impact on administrative and academic staff.***

It is emerged from interview discussion that launching of institutional or digital repositories creates data entry issues. The staff has to work hard to overcome problems. Staff feels as burden of this new service. In some libraries and institutes, it is a new activity. Staff have to scan the document and then upload into the system. Sometime staff feel overwork and overloaded. To overcome this factor, soft copies of the document must be obtain so that when ever needed to launch the repository initiative, there may be no hurdle or extra activity over staff for scanning or data entry. Furthermore, staff must be properly trained in the planning phase of the repositories before the launching of the repository. As far as academic staff is concern, they feel it good but also have fear of open access and copyright issues. Awareness is immensely needed to overcome this fear. They have to be informed about the features of open repositories which are freely accessible anywhere, avoid duplication and one can easily determine previously conducted research in particular area or subject.

#### ***Policies factor.***

All the Interviewees (n=6) were in the view that NO formal policies exist at the government level that support to launch the open repositories and that act as a guiding tool for developing and sustaining the repositories. Only in academic institutions HEC has made it compulsory for PhD candidate to submit the copy of the dissertation for national research repository but for other organization there isn't any kind of compulsory requirement.

### ***Current Resources: Infrastructure***

Fifty percent interviewees (n=3) stated technology changes very fast and every now and then new machines, tools and software's emerges. Old and outdated hardware does not support new Software with advance features. To cater this change, existing hardware and other necessary gadget should also be change to meet the changing environment and changing needs. Always plan in advance to change the infrastructure, you may start from existing available resources but for future there should be policy defined to overcome technological changes. Consultation with I.T professional staff should also be consulted for anything needed in future or some years later.

Almost all the interviewees 100% (n=6) were in the opinion that there is no immediate change is required to develop the digital repositories. Hardware and Open Source software needed for repositories development are available. Internet connectivity is also available in all institutes.

### **Monetary Factors**

All the Interviewees (n=6) mentioned that monetary factors also affect the adoption of digital repository initiatives. For academic institutes funds are available if properly communicated to higher authorities. But for other organization it might be a

problem to purchase new hardware as required or funds allocation for staff training etc. Interviewees suggested that “will” is required to launch the initiative and one can easily manage to launch the repository by using available resources. No extra budget is required. Open source software should be consider for digital repositories to avoid extra cost on software.

### ***Staffing Factor***

In academic libraries staff is available as pointed out by the interviewees (n=6). In other organizational libraries, staff position is not also bad but they must be trained before launching or planning the digital repository development.

### ***Open Access.***

Interviewees (n=6) felt open access is also challenge factor. There is disbelief about the benefit of open access. Open access arose as a challenge from qualitative data. There is a fear of plagiarism about open access. Faculty and students have uncertainties over open access. Workshops, seminars and orientation session should be steered to create awareness among students and faculty about open access. They should be told about the benefits of the prospects of open access availability. There is also a doubt found about the benefits of open access. It needs awareness in this regard. They feel unwilling and fear that there may be restrictions from funding agencies. Appropriate guidance and awareness may overcome this disbelief about the benefits of open access.

### ***Expertise***

Expertise appeared as challenged factor as well, all the interviewees (n=6) felt that there is a unavailability of skilled and competent staff. The interviewees felt that

there is no opposition in staff to opt for new technologies. There is a need for capacity building of staff to new technological changes, needed expertise and capable manpower.

### ***Copyright and IPR***

All the interviewees (n=6) felt that is no issue related to copyright and IPR, it needs awareness in this regard. No apprehension was found over authentication and watermarking, proper authentication should be incorporated before uploading the document into the repository. Watermarking certifies the proprietorship of the governing body and averts the document from being copied or photocopied.

### **Conclusion:**

There are only three open access digital repositories which are listed in the Directory of Open Access Repositories (OpenDOAR). Factor that prevent repositories initiatives in Pakistan are reluctant staff to opt new service, unavailability of sound policies, infrastructure, monetary factors, staffing, open access, Copyright and IPR and the required level of expertise. It is recommended that staff should be trained to adopt new initiative and they must be properly guided so that they don't think of over burden of new work. Similarly policies regarding digital repositories must be formulated at national level to cater this problem. Infrastructures should be changed accordingly as per changing needs of the new versions and up datedness in hardware and software. In some organizations funds are also affecting factor. Proper documentation should be prepared and convinced the authorities to release the required amount of funds for digital repositories. Furthermore training should be conducted to create awareness amongst the students and other relevant staff regarding open access and value of open access

repositories and other copyright issues. These repositories must be listed in the world wide directories and other relevant forums for wider visibility.

### References:

- Akça, S., Taşkın, Z., & Berać, M. (2014). Comparison of Digital Archives from the Point of Sustainability. *BOBCATSSS 2014 Proceedings, 1(1)*, 180-187.
- Bainbridge, D., Osborn, W., Witten, I. H., & Nichols, D. M. (2006). *Extending Greenstone for institutional repositories*. Paper presented at the International Conference on Asian Digital Libraries.
- Científicas, C. S. d.-I. (2016). The Ranking Web of World repositories. Retrieved 11/19/2016, 2016, from [http://repositories.webometrics.info/en/Asia\\_Pacifico/South%20Asia](http://repositories.webometrics.info/en/Asia_Pacifico/South%20Asia)
- Crow, R. (2002). The case for institutional repositories: a SPARC position paper. Retrieved July 28, 2017, from <http://sparc.arl.org/sites/default/files/instrepo.pdf>
- Doctor, G. (2006). Knowledge Sharing in Academic Institutions Technology for Sharing Research Output, Course Ware & Learning Resources.
- Farida, I., Tjakraatmadja, J. H., Firman, A., & Basuki, S. (2015). A conceptual model of Open Access Institutional Repository in Indonesia academic libraries: Viewed from knowledge management perspective. *Library Management, 36(1/2)*, 168-181. doi: doi:10.1108/LM-03-2014-0038
- Fiels, K. M. (2015). The Digital Revolution and the Transformation of Libraries: Transforming libraries and the 2015 Strategic Plan. *Americal Libraries, 2016*.

- Florida, U. o. C. (2017). Retrieved July 25, 2017, from  
<https://www.students.graduate.ucf.edu/ETD/>
- Gadd, E., Oppenheim, C., & Proberts, S. (2003). RoMEO Studies 1: The impact of copyright ownership on academic author self-archiving. *Journal of documentation*, 59(3), 243-277.
- Garg, M. (2015). ACADEMIC LIBRARIES UNDER THE INFLUENCE OF ICT: AN INDIAN PERSPECTIVE. *Asian Journal of Multidisciplinary Studies*, 3(12).
- Ghosh, M. (2009). E-theses and Indian academia: A case study of nine ETD digital libraries and formulation of policies for a national service. *International Information & Library Review*, 41(1), 21-33. doi:  
10.1080/10572317.2009.10762794
- Gonçalves, M. A., France, R. K., & Fox, E. A. (2001). *MARIAN: Flexible interoperability for federated digital libraries*. Paper presented at the International Conference on Theory and Practice of Digital Libraries.
- Guy, M., Powell, A., & Day, M. (2004). Improving the quality of metadata in eprint archives. *Ariadne*(38).
- Hayes, H. (2005). Digital repositories: Helping universities and colleges. *JISC briefing paper*. Retrieved 19 July, 2017, from  
[www.jisc.ac.uk/media/documents/publications/repositorybphe.pdf](http://www.jisc.ac.uk/media/documents/publications/repositorybphe.pdf)
- HEC. (2016). HEC Recognised Universities and Degree Awarding Institutions. Retrieved 11/20/2016, 2016, from  
<http://hec.gov.pk/english/universities/pages/recognised.aspx#k=>

- Jones, R. (2004). DSpace vs. ETD-db: Choosing software to manage electronic theses and dissertations. *Ariadne*(38).
- Jones, R. E., Andrew, T., & MacColl, J. (2006). *The institutional repository*: Elsevier.
- Lagoze, C., Fielding, D., & Payette, S. (1998). *Making global digital libraries work: Collection services, connectivity regions, and collection views*. Paper presented at the Proceedings of the third ACM conference on Digital libraries.
- Lagoze, C., Lynch, C., Waters, D., Van De Sompel, H., & Hey, T. (2006). *Augmenting interoperability across scholarly repositories*. Paper presented at the Digital Libraries, 2006. JCDL'06. Proceedings of the 6th ACM/IEEE-CS Joint Conference on.
- Loan, F. A., & Rather, R. (2007). Open access digital repositories: an Indian scenario. *KnowGenesis: International Journal for Technical Communication*, 2(1).
- Lynch, C. A. (2003). Institutional repositories: essential infrastructure for scholarship in the digital age. *portal: Libraries and the Academy*, 3(2), 327-336.
- Nixon, W. (2003). DAEDALUS: Initial experiences with EPrints and DSpace at the University of Glasgow. *Ariadne*(37).
- Ochoa, X., & Duval, E. (2009). Automatic evaluation of metadata quality in digital repositories. *International journal on digital libraries*, 10(2), 67-91.
- OpenDOAR. (2016). The Directory of Open Access Journals. Retrieved 11/20/2016, 2016, from <http://www.andoar.org/>
- Palavitsinis, N., Manouselis, N., & Sanchez-Alonso, S. (2017). Metadata and Quality in Digital Repositories and Libraries from 1995 to 2015: A Literature Analysis and

Classification. *International Information & Library Review*, 1-11. doi:  
10.1080/10572317.2016.1278194

Roberts, A. (1997). *Survey on the Use of Doctoral Theses in British Universities: report on the survey for the University Theses Online Group*: British Library Research and Innovation Centre.

Roy, B. K., Biswas, S. C., & Mukhopadhyay, P. (2013). Global visibility of Indian open access institutional digital repositories. *International Research: Journal of Library and Information Science*, 3(1).

Suber, P. (2007). Open access overview. Retrieved Aug. 8, 2017, from  
<http://legacy.earlham.edu/~peters/fos/overview.htm>

System, N. E. M. I. (2017). Pakistan Education Statistics 2015-16. from  
<http://library.aepam.edu.pk/Books/Pakistan%20Education%20Statistics%202015-16.pdf>

Teper, T. H., & Kraemer, B. (2002). Long-term retention of electronic theses and dissertations. *College & Research Libraries*, 63(1), 61-72.

Ullah, A., & Rafiq, M. (2014). Pakistan research repository: a showcase of theses and dissertations. *Library Hi Tech News*, 31(4), 17-20. doi: doi:10.1108/LHTN-01-2014-0003

Varatharajan, N., & Chandrashekara, M. (2007). Digital library initiatives at higher education and research institutions in India. *Library Philosophy and practice*, 9(2), 1-7.