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2020

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Ullah, Midrar and Mirza, Khalid Bashir, "Status of Electronic Theses and Dissertations Repositories in University Libraries Located in Islamabad and Rawalpindi" (2020). *Library Philosophy and Practice (e-journal)*. 3980.

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Status of Electronic Theses and Dissertations Repositories in University Libraries Located in Islamabad and Rawalpindi

Abstract

The purpose of this study is to investigate the development of Electronic Theses and Dissertations (ETDs) repositories in university libraries located in Islamabad Capital Territory (ICT) and Rawalpindi (twin cities), Pakistan. A semi-structured web-based questionnaire was developed and distributed among all 35 university libraries located in the twin cities of Pakistan. SPSS version 21 was used for analysis of data. It was found that out of 35, 13 (37.14%) university libraries had developed their ETDs repositories. DSpace was the most used software and vast majority had uploaded files in PDF format in their ETDs repositories. Respondents agreed with the 10 key benefits of developing ETDs repositories. However, lack of incentive, motivation, policies and shortage of staff hampered the development of ETDs repositories. It is crucial for the universities to develop ETDs repositories for long-term preservation of their research heritage and to enhance its visibility. It is recommended that university authorities should provide software, hardware infrastructure, financial, and technical support to the libraries for the development of ETDs repositories in the university libraries.

Keywords: Electronic Theses and Dissertations; ETDs repositories; Institutional Repositories; Theses; Dissertations; University libraries; Pakistan; Academic libraries

Paper type: Research paper

Introduction

Theses and dissertations are research material submitted to the universities for the award of undergraduate, master and doctoral degrees (Chakravarty, 2018). The primary purpose of theses and dissertations is to involve the students in the process of scholarly research writings under the guidance of experienced faculty members. They represent research output of universities and are intellectual capital of both the authors and the institutions at which these are created. They are considered precious sources of research information for researchers, scholars and students, providing research format, methodology, and pattern for beginners. Moreover, these are comprised of various novel ideas, new creations and outcomes of recent research work and also provides new directions for future research. (Dolan, 2018). Alemneh and Hartsock (2014) described that theses and dissertations are important component in an academic library's collection which represent a wealth of scholarly and artistic content created by master and doctoral students in the degree-seeking process. In most universities, it is mandatory for students to submit a hard and soft copy of their research thesis / dissertation in the library (Prociuous, 2014).

The advent of emerging technologies and their application for scanning and digitization has resulted in tremendous growth of electronic material in universities and institutions of higher education. Therefore, print theses and dissertations in university libraries are also being converted into electronic format for storage and preservation purposes. Electronic theses and dissertations (ETDs) have far better visibility as compared to print theses. ETDs also help to alleviate some common library problems including space, storage, preservation and research dissemination. Therefore, universities around the world are profoundly engaged in digitization of their scholarly literature such as dissertations, theses, project reports, and related documents to make them available online (Richardson, et al., 2008).

Electronic or digital versions of theses and dissertations are called as ETDs (Fineman, 2004; Fox & Moxley, 2001). Inefuku (2011) identified two types of ETDs as: (a) Born-digital i.e. theses born electronically and (b) Converted from print (analog) to digital by digitization. Presently, due to the remarkable changes in modes of scholarly communications and information landscape, there has been an exponential growth of ETDs worldwide over the last few decades. Institutional Repositories (IRs) are rapidly evolving to capture, index, store, preserve and disseminate the electronic theses that are intellectual productivity of universities and research institutions.

Arif and Mahmood (2010) revealed that "...compared to other types of libraries, the university libraries are better placed with respect to resources, organization and staff" (p. 408). They also described the findings of various research studies and found that "... university libraries in the country were in a better position with good technological infrastructure" (p. 475). Emerging technologies are reshaping the future of academic information centers. Beside this, Pakistani universities are significantly contributing in generation, organization and dissemination of institutional research work such as theses, dissertations and research reports.

The purpose of this research paper is to apprise the status of development of ETDs repositories in university libraries located in Islamabad Capital Territory (ICT) and Rawalpindi (twin cities) in Pakistan.

Literature Review

Teper and Kraemer (2002) observed an increase in the growth of Electronic Theses and Dissertations (ETDs) in the world. The movement of Electronic Theses and Dissertations (ETDs) was started in 1987 in the USA, however, it gained momentum in 1997 (Fineman, 2003). Moreover, Seamans (2003) also revealed that the submission of theses and dissertations in

electronic form was mandatory for students in the American universities. According to Jones and Andrew (2005) the trend of creation of electronic version of theses was growing in the world and in many universities it became a mandatory requirement. Lippincott (2006) also reported that most of the students were producing and submitting the theses and dissertations in electronic formats and predicted that majority of academic institutions would adopt the ETDs programs as a rule without any exception. McCutcheon, et al (2008) described many advantages of ETDs over printed theses as it enhances the visibility of research output. Morrison (2009) opined that open access and electronic medium had totally changed the scenario and an electronic thesis could be accessed anywhere by anyone. Dewey (2010) illustrated that electronic theses are becoming part of digital collections and electronic theses achieve maximum visibility. However, students should be introduced with the copy right and intellectual property rights.

Howard and Goldberg (2011) revealed that “bound theses and dissertations (BTDs) have increasingly been supplemented or replaced by electronic theses and dissertations (ETDs)” (p. 113). They further stated that “one of the main benefits of the Library’s Open Access (OA) presentation of our ETDs is the increased visibility of these resources, which benefits both the student and the researcher”. Alemneh and Hartsock (2014) stated that it is the responsibility of libraries to develop collection of research material and make it accessible to students and faculty for scholarly activities. They further explained that the researchers must be aware of research studies conducted in their institutions and they need to consult these. Swan (2016) pointed out the importance of the institutional repositories and considered it essential tools for universities to enhance the visibility and impact of research output globally. Steele and Sump-Crethar (2016) stated that the growth of institutional repositories is becoming crucial in academic institutions. The

rapid growth and proliferation of Internet / World Wide Web has led to the digital publishing and open access movement. Consequently, traditional print scholarly literature has gradually been begun to publish in digital versions. Ferreras-Fernández, et al. (2016) also reported that ETDs repositories are now becoming common in universities across the world. They discovered that usage statistics of these repositories has shown dramatic increase in the use and citations of doctoral research theses. They further stated that “benefits as visibility and impact are sufficiently demonstrated by the results obtained in the analysis” (p. 14). Previous literature shows the growth of digital institutional repositories in academic libraries worldwide. Moreover, in digital era, the growth of ETDs repositories has profoundly replaced the print theses /dissertation in university libraries (Dale, et al., 2017)

In South Asia, Vijayakumar and Murthy (2001) advocated the need of ETDs in Indian universities. They recommended that University Grant Commission (UGC) of India should provide funds to the universities for launching ETDs project. Ghosh (2009) documented that the first ETDs repository was developed at the Indian Institute of Technology (IIT), Mumbai in 1999. Roy, et al. (2013) suggested that South Asian Association for Regional Cooperation (SAARC) should develop an open access policy to scholarly resources. Ahmed, et al. (2014) opined that development ETDs repositories would improve the impact and ranking of the institutions. Gupta and Gupta (2014) pointed out that retro-conversion of the theses in India was in progress and many of the universities had digitized their theses collection. Rahman (2015) revealed that 50% public universities in Bangladesh have developed their ETDs repositories. Haneefa and Divya (2016) revealed that out of 35 Indian scientific institutions, 10 had developed their ETDs repositories. Patra, et al., (2018) investigated the development of ETDs repositories in eight South Asian countries. They found that only three countries i.e., India, Bangladesh and Pakistan have developed

their national ETDs repositories. Nanthini and Varghese (2018) reported that Information and Library Network (INFLIBNET) in India had developed an online repository of ETDs known as Shodhganga. They considered Shodhganga as the most trusted ETDs repository of 130 universities in India.

In Pakistan, Ameen and Rafiq (2009) reported that the trend of digital transformation is growing in Pakistan and demand for digitized contents is increasing. Rafiq and Ameen (2012) pointed out that most of the indigenous scholarly material was not available in digital format. However, digitizing process of theses and dissertations was in progress and was in early stage. Shaheen and Ali (2008) reported that the Higher Education Commission (HEC) of Pakistan had launched ETDs repository initiative known as Pakistan Research Repository (PRR) to promote the international visibility of research output of Pakistan universities. Rafiq (2008) also identified two initiatives of ETDs in Pakistan one of the HEC and another in a public sector university. Ali (2010) reported that the International Islamic University, Islamabad had digitized more than 6000 theses. Ali also identified barriers in the development of ETDs repositories such as copyright and plagiarism, power breakdown, shortage to digital data and backup etc. Ullah and Rafiq (2014) explored the electronic theses initiative launched by HEC in Pakistan and reported that Pakistan Research Repository (PRR) is a national program for centralized preservation and sharing of indigenously produced theses and other research work. They concluded that “the creation of this repository was a landmark achievement, as it provided the opportunity for the researchers, faculty and students for furthering their existing knowledge” (p. 19).

Literature review shows that no study has been conducted in Pakistan regarding the present status, growth and development of ETDs repositories in university libraries. Although, limited studies have identified few ETDs initiatives in Pakistan, but the status of ETDs in university

libraries located in ICT and Rawalpindi has never been explored so far. Thus, there was a dire need to conduct a study in this area.

Objectives of the Study

The objectives of this study were to:

1. Explore the status of Electronic Theses and Dissertations (ETDs) repositories in the university libraries located in Islamabad Capital Territory (ICT) and Rawalpindi.
2. Investigate the prevailing practices for the development of ETDs repositories in the university libraries located in ICT and Rawalpindi.
3. Ascertain the major benefits of ETDs repositories.
4. Identify barriers influencing the growth of ETDs repositories in the university libraries of ICT and Rawalpindi.

Methodology

Survey research method was used to achieve the objectives of this study and the data were collected through a web-based questionnaire. The draft of questionnaire was developed after detailed literature review of previous studies in the field. The draft of questionnaire was sent to a panel of experts, comprising of Library and Information Science (LIS) faculty members and senior librarians for review. The questionnaire was revised in light of suggestions and comments received from panel of experts and was again sent to them for approval. The approved draft of questionnaire was then tested in a pilot study on 10 university librarians other than respondents of this study. The ambiguities identified by the respondents of pilot study were removed. Finally, a web-based questionnaire was developed in the Google Form. The web-based questionnaire was distributed

through email among all 35 university libraries located in Islamabad Capital Territory (ICT) and Rawalpindi, the twin cities of Pakistan.

The population of this study was consisted of the Central Libraries of the Higher Education Commission (HEC) recognized universities or campuses of the universities located in the ICT and Rawalpindi both in public and private sector and established till December 2018. The list of universities was compiled from the HEC website and it was found that 36 universities (19 in public sector and 17 in private sector) had their main campuses or sub-campuses in ICT and Rawalpindi. The questionnaire was emailed to the chief librarians or in charge of the ETDs repositories in the universities. Moreover, to enhance the response rate reminders were sent to the non-respondents through email and telephone calls. The data collected through web-based questionnaire were entered in the SPSS (Version 21.0) for analysis.

Results and Discussion

Response Rate and Demographics

Out of 36, 35 (97.22%) university libraries responded to the survey. Of 35 responding university libraries, 30 (85.71%) were located in Islamabad Capital Territory (ICT) and five ((14.29%) in Rawalpindi. However, we received almost an equal response rate from public sector (18; 51.42%) and private sector (17; 48.57%) university libraries. Majority (27; 77.14%) of the responding universities had their main campuses and eight (22.85%) had their sub-campuses in these twin cities.

Status of ETDs Repositories in University Libraries

Out of 35 university libraries, 13 (37.14%) libraries have developed their ETDs repositories. Of 13, nine were in public sector and only four were in private sector. The digital repositories have emerged as a vibrant and powerful tool for collection and preservation of scholarly communications including ETDs. Therefore, Higher Education Commission (HEC), a supervisory body of universities in Pakistan has directed the heads of universities to establish research repositories in their respective universities. However, despite of HEC directives most of the universities have not developed their ETDs repositories.

Establishing Year of ETDs Repositories

Figure 1 demonstrates that ETDs repositories were developed during 2005 and 2018. However, four ETDs repositories were developed in 2018.

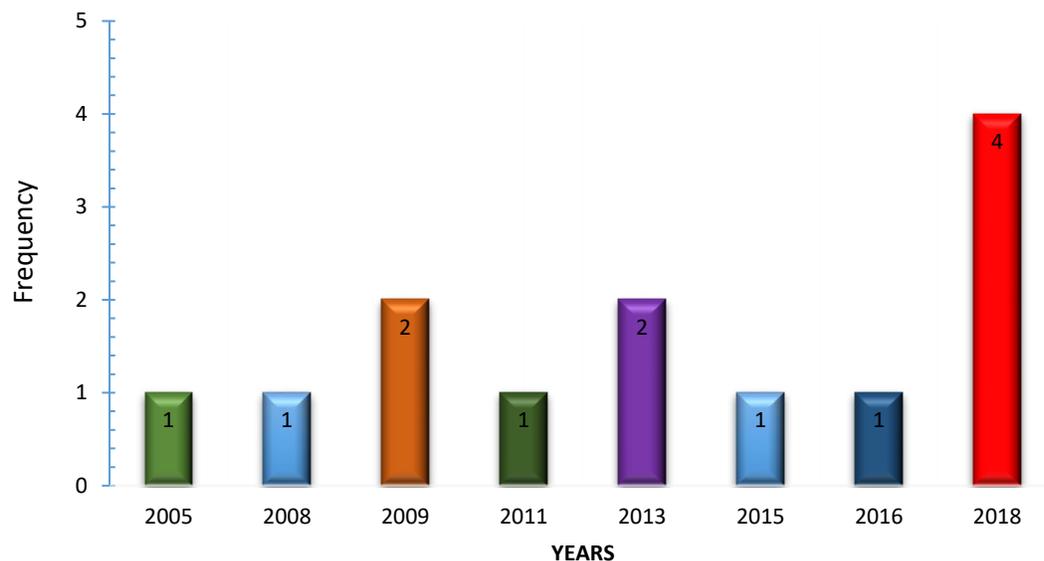


Figure 1: Establishing year of ETDs Repositories (n=13).

ETDs Repositories Collection

Figure 2 illustrates the number ETDs available in the repositories of university libraries. The collection of ETDs varied from 110 to 7000 records. Nine libraries had 3000 to 7000 ETDs in their repositories.



Figure 2: ETDs Collection in University Libraries (n=13).

ETDs Projects Completion in Percentage

The respondents were asked to mention the progress of ETDs repositories development in percentage. The respondents were given five options consisted of “less than 25% completed”, “up to 25% completed”, “up to 50% completed”, “up to 75% completed” and “100% completed”. Figure 3 presents that 5 (38.46%) university libraries have completely (100%) developed their EDTs repositories. However, in nine libraries the ETDs repository project is in progress and 4 have completed it up to 75%, 2 up to 25% and 2 libraries have completed it less than 25%. It shows that majority of libraries are still in the process of development of their ETDs repositories.

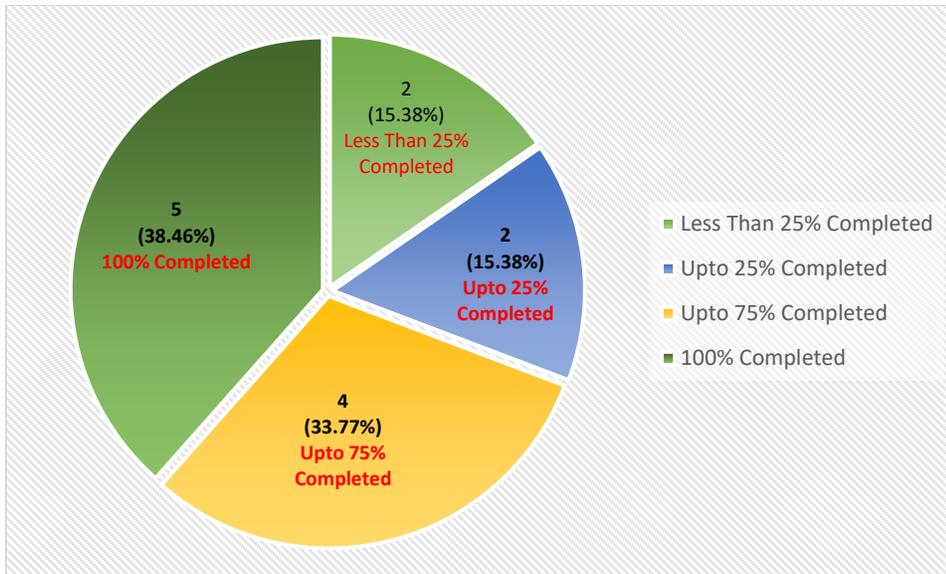


Figure 3: ETDs Repositories Projects Completion in Percentage (n=13).

Availability of Written-Policy for ETDs Repositories

Formulation of well-designed policy, duly approved by the university authority, is crucial for the acquisitions, preservation and management of ETDs repositories in university libraries. Therefore, the respondents who have developed ETDs repositories, were asked if they had formal written policy for the development and management of ETDs repositories in their respective universities. It was revealed that most of the university libraries (8, 61.53%) did not possess any written policy and only (5, 38.46%) libraries had a policy in black and white for the development of ETDs repositories.

Park, et al. (2007) conducted a survey regarding management of ETDs repositories in Korean university libraries. They also reported that adequate policy for the development of ETDs repositories did not exist at national level in Korea. Moreover, Roy et al. (2013) also found that large majority of institutions lack policy for the development of ETDs repositories in India. Other studies (Abrizah et al., 2017; Ahmed et al., 2014)) also reported that vast majority of repositories

in Asia were operating with an “undefined” policy for content, submission and preservation. Therefore, previous studies support our results that developing countries lack written policies to support and promote the ETDs repositories.

File Formats Used in ETDs Repositories

In order to know the format of files being uploaded in the ETDs repositories, a list of six commonly used file formats was presented to the respondents. The respondents were asked to select the file formats used in their ETDs repositories. Table 1 illustrates that vast majority (12; 92%) was using Portable Document Format (PDF) format in their ETDs repositories, followed by MS Word format (3; 23%). However, only one (8%) respondent each used HTML, Audio/Video and Image formats.

The results of this study support the findings of previous studies (Sawant, 2010; Abrizah, 2017) which also revealed that PDF is the most widely used file format for the development of ETDs repositories in developing countries. However, Rimkus et al. (2014) found that member libraries of Association of Research Libraries (ARL) were using variety of file formats such as TIFF/TIF, WAV, PDF, JPEG and TXT in the USA. It shows that digital repositories now support images, videos, audios and other formats.

Access to ETDs Repositories:

The respondents who have developed their ETDs repositories were asked to mention the type of access they have provided to their ETDs repositories. They were provided with four options such as “full text access within library premises”, “full text access within university campus”, “full text access on world wide web” and “access to abstract only”. Figure 4 presents the results.

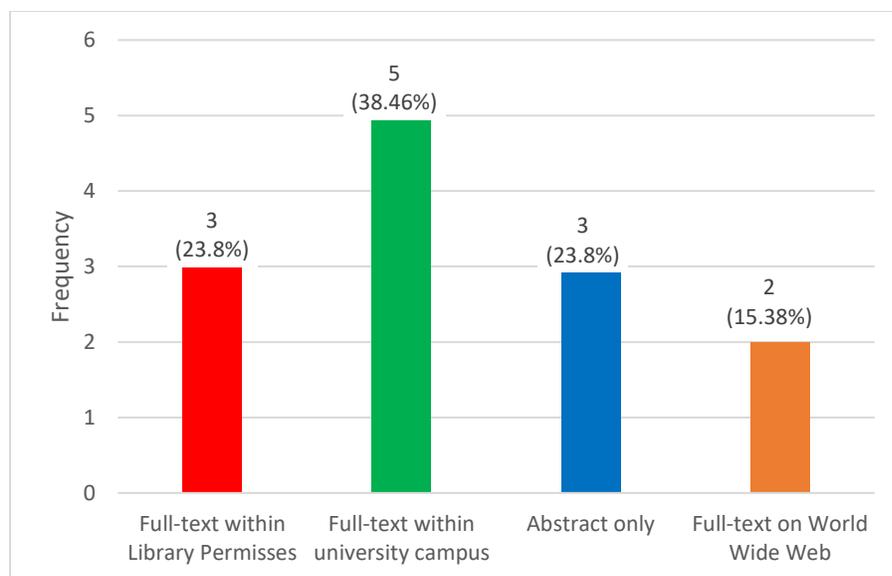


Figure 4: Access to ETDs Repositories (n=13).

Figure 4 shows that most of the libraries (5, 38.46%) provide full-text access to their ETDs repositories within university campus while 3 (23.08%) each extended full-text access within university premises and to abstract only. Only 2 (15.38%) have provided access to full-text ETDs repositories on World Wide Web. The results of this study support the findings of Vijayakumar (2005) and Ghosh (2009) who also reported that most of the libraries in India restrict their access to full-text theses within university campus only. Schöpfel et al. (2014) also found that the trend of on campus access restriction is increasing in Germany and France. However, digital repositories of PhD theses, developed in Pakistan and India at national level, provides full text access to all theses on World Wide Web without any restriction (Sengupta, 2014; Ullah & Rafiq, 2014).

Software Adopted for the Development of ETDs Repositories.

A list of four open source software along with any other option was presented to the respondents. The respondents were asked to tick the software being adopted in their libraries for the

development and management of ETDs repositories. The results are presented in Table 1 along with frequency and percentage.

Table 1: Software Used for the Development of ETDs Repositories (N=13).

S. No	Software	Public Sector	Private Sector	Total
1	DSpace	7 (53.8%)	1 (7.7%)	8 (69.2%)
2	EPrint	0	1 (7.7%)	1 (7.7%)
3	GreenStone	1 (7.7%)	0	1 (7.7%)
4	Calibre	0	1 (7.7%)	1 (7.7%)
5	Any Other	1 (7.7%)	1 (7.7%)	2 (15.4 %)

Table 1 indicates that out of 13, majority of university libraries (8) were using the open source DSpace software for the development of their ETDs repository. Whereas, the remaining three software such as EPrint, GreenStone and Calibre were being used by only one library each. It shows that DSpace is the most popular software being used for the development of digital repositories in Pakistan (Rafiq, 2008). Previous studies (Ahmed, et al., 2014; Bailey et al., 2006; Das, et al., 2007; Hemminger, et al., 2004; Lynch & Lippincott, 2005; Narayana, 2008; Sawant, 2010; Sengupta, 2014; Yiotis, 2008) also found that DSpace software is the most used software in world for the management of digital repositories.

Benefits of ETDs Repositories

A list of nine benefits of developing ETDs repositories was presented to respondents along with three close ended options of agree, don't know and disagree. The respondents were asked to select one of the option. The results are presented in Figure 5.

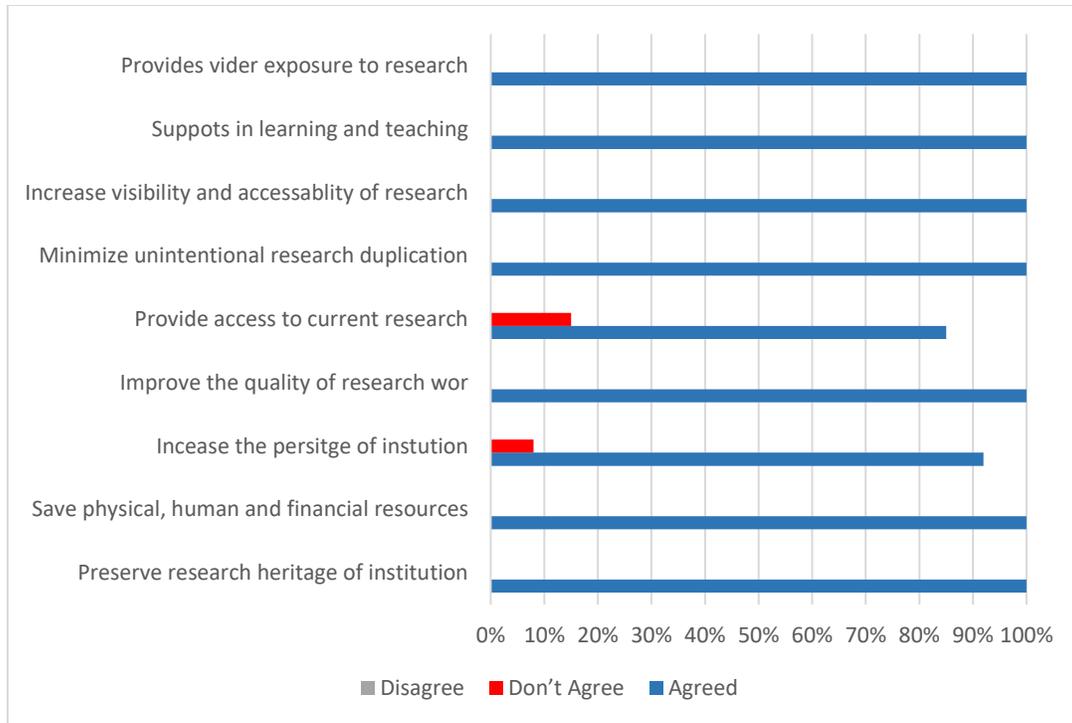


Figure 5: Benefits of ETDs Repositories (n=35)

The results show that none of the respondents had shown disagreement with the nine benefits of developing ETDs repository. All the respondents agree that ETDs repositories provides wider exposure to research, supports learning and teaching, increases visibility and accessibility, improve the quality of research, save physical, human and financial resources and preserves research heritage of the institution. A vast majority also agree that ETDs repositories minimize unintentional research duplication and increase the prestige of institution. It shows that our results are in agreement with the previous studies (Al Salmi, 2008; Copeland & Penman, 2004; Dhiman, 2013; Khaparde & Ambedkar, 2014; Vijayakumar & Murthy, 2001) which also reported that ETDs repositories offers incredible benefits including wider exposure, flexibility, visibility, worldwide access, and faster dissemination of research.

Barriers Influencing the Development of ETDs Repositories

A list of pre-defined 10 expected barriers influencing the development of ETDs repositories in the university libraries was presented to the respondents. The respondents were asked to express their level of agreement or disagreement to the statements on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 2 presents the barriers in ranked order according to the mean scores from higher to lower. In case of same mean score the statement with lower standard deviation (SD) is ranked higher.

Table 2: Barriers influencing the development of ETDs Repositories (n=35)

Rank	Barriers	Mean	SD
1	Lack of incentives and motivation	2.54	.852
2	Shortage of staff	2.49	1.040
3	Lack of digital preservation policy	2.46	1.094
4	Lack of copyright and IPR policies	2.40	.946
5	Lack of LIS Professionals' training	2.31	.963
6	Lack of support from higher authorities	2.29	.926
7	Inadequate IT expertise	2.20	.868
8	Insufficient funds	2.20	.901
9	Lack of IT resource	2.14	1.061
10	Lack of interest among LIS Professionals	2.06	.998

Table 2 shows that all the barriers got mean score less than three and greater than two. It shows that respondents agreed to some extents to the 10 barriers hindering the development of ETDs repositories in university libraries. The results show a mix trend in the opinion of respondents. However, it was revealed that most of the respondents considered lack of incentives and motivations (mean 2.54); shortage of staff (mean 2.49); lack of digital preservation policy (mean 2.40) and lack of copyright and Intellectual Property Rights (IPR) policy (mean 2.40) as the top four barriers hampering the development of ETDs repositories in the university libraries.

Inadequate IT expertise, insufficient funds, lack of IT infrastructure and lack of interest among LIS professionals were ranked lower than others other barriers and got mean score between 2.31 and 2.06. The results of this study support the findings of previous studies conducted in India which also identified the copyright and IPR issues, shortage of staff, inadequate IT expertise, lack of trainings as major barriers hampering development of ETDs repositories (Baishya, 2016; Chakravarty, 2010; Khaparde & Ambedkar, 2014; Satyanarayana & Babu, 2008; Vijayakumar & Murthy, 2001).

Conclusion and Recommendations

Heads of the university libraries located in Islamabad Capital Territory (ICT) and Rawalpindi (twin cities) are well aware about the benefits of developing ETDs repositories. The first ETDs repositories have been developed in 2005 and a significant growth is also observed in 2018. However, most of them have not developed their ETDs repositories due to shortage of staff, lack of incentive for existing staff and lack of policy regarding digital repositories in the universities. It is crucial for the universities to develop ETDs repositories for long-term preservation of their research heritage and to enhance its visibility. Most of the universities have adopted the open source software DSpace for the development of their ETDs repositories and provided full text access within university campus only.

It is recommended that all the universities should make it mandatory for all students to submit electronic copy of their thesis and dissertation in the library. All the universities need to develop their ETDs repositories to extend full text access to their theses and dissertations. The universities should formulate a proper policy for the development of ETDs repositories after consultation with all stake holders. The university authorities should provide software, hardware

infrastructure, financial, and technical support to the libraries. Moreover, dedicated staff may be employed or incentives may be given to the existing staff for the development of ETDs repositories in the university libraries.

References

- Abrizah, A. (2017). The cautious faculty: Their awareness and attitudes towards institutional repositories. *Malaysian Journal of Library & Information Science*, 14 (2): 7-37.
- Abrizah, A., Noorhidawati, A., & Kiran, K. (2017). Global visibility of Asian universities' open access institutional repositories. *Malaysian Journal of Library & Information Science*, 15(3): 53-73.
- Ahmed, A., Alreyaee, S., & Rahman, A. (2014). Theses and dissertations in institutional repositories: an Asian perspective. *New Library World*, 115(9/10): 438-451.
- Al Salmi, J. (2008). Factors influencing the adoption and development of electronic theses and dissertations (ETD) programs, with particular reference to the Arab Gulf States. *Information Development*, 24(3): 226-236.
- Alemneh, D.G., & Hartsock, R. (2014). Theses and dissertations from print to ETD: the nuances of preserving and accessing those in music. In: Krueger, J. *Cases on Electronic Records and Resource Management Implementation in Diverse Environments*(p. 41-60). Pennsylvania: IGI Global.
- Ali, Y. (2010). Introduction to ETD Project at IIU. University of Pittsburgh. Pittsburgh, PA: University Library System. Available at: <http://conferences.library.pitt.edu/ocs/>.
- Ameen, K., & Rafiq, M. (2009). Development of digital libraries in Pakistan. In: Theng, Y.L., Foo, S., Goh, D., & Na, J.C., editors. *Handbook of Research on Digital Libraries: Design, Development, and Impact* (p. 482-491). Hershey, PA: IGI Global.

- Arif, M., & Mahmood, K. (2012). The changing role of librarians in the digital world: adoption of web 2.0 technologies by Pakistani librarians. *The Electronic Library*, 30(4): 469-479.
- Bailey Jr, C.W., Coombs, K., Emery, J., Mitchell, A., Morris, C., & Simons, S. (2006). *Institutional Repositories (ARL SPEC Kit 292)*. Washington DC. Association of Research Libraries.
- Baishya, K. (2016). *Management of Indian Institutional Repositories: An Evaluative Study* (Doctoral dissertations). Available at: <https://shodhganga.inflibnet.ac.in> (accessed 23 June 2018)
- Chakravarty, R. (2010). *Developing open access institutional repositories for scholarly communications: role of university libraries in India*, (Doctoral dissertations), Available at: shodhganga.inflibnet.ac.in.
- Chakravarty, R. (2018). Status of electronic theses and dissertations (ETDs) in India. In: Chisita, C.T., & Rusero, A.M. *Exploring the Relationship between Media, Libraries, and Archives* (p. 35-52). Hershey: IGI Global.
- Copeland, S., & Penman, A. (2004). The development and promotion of electronic theses and dissertations (ETDs) within the UK. *New Review of Information Networking*, 10(1): 19-32.
- Dale, P., Beard, J., & Holland, M. (2017). *University Libraries and Digital Learning Environments*. London: Routledge.
- Das, A.K., Sen, B.K., & Dutta, C. (2007). ETD policies, strategies and initiatives in India: a critical appraisal. In: *Proceedings of the 10th International Symposium on Electronic Theses and Dissertations (ETD 2007)*, Uppsala, Sweden, 13–16 June 2007.

- Dewey, B.I. (2010). *Transforming Research Libraries for the Global Knowledge Society*.
Oxford: Chandos Publications.
- Dhiman, A.K. (2013). *Need of collaborative approach for developing national ETD repository*.
Available at: shodhganga.inflibnet.ac.in.
- Dolan, D. (2018). *A research guide to Psychology: Print and electronic sources*. Lanham:
Rowman & Littlefield.
- Ferreras-Fernández, T., García-Peñalvo, F., Merlo-Vega, J. A., & Martín-Rodero, H. (2016).
Providing open access to PhD theses: visibility and citation benefits, *Program*, 50(4):
399-416.
- Fineman, Y. (2003). Electronic theses and dissertations. *Portal: Libraries and the
Academy*, 3(2): 219-227.
- Fox, E., & Moxley, J.M. (2001). *The guide for electronic theses and dissertations*. Available at:
scholarcommons.usf.edu.
- Ghosh, M. (2009). E-theses and Indian academia: a case study of nine ETD digital libraries and
formulation of policies for a national service. *The International Information & Library
Review*, 41(1): 21-33.
- Gupta, D.K., & Gupta, N. (2014). Dissertations and repositories. *Design/Methodology/Approach*,
35(4/5): 308-319.
- Haneefa M. K., & Divya. (2018). *Electronic Theses and Dissertations (ETDs) in India*. Available
at: <https://www.researchgate.net/publication/32259928>.
- Hemminger, B., Fox, J., and Ni, M., (2004). *Improving the ETD Submission Process Through
Automated Author Self Contribution Using DSpace*. Available at: semanticscholar.org.

- Howard, R.I., & Goldberg, T. (2011). Facilitating greater access to ETDs through CONTENTdm. *OCLC Systems & Services: International Digital Library Perspectives*, 27(2): 113-123.
- Inefuku, H.W. (2011). The digital preservation of electronic theses and dissertations (ETDs). *Open Excess*, 1(3): 1-17.
- Jones, R., & Andrew, T. (2005). Open access, open source and e-theses: the development of the Edinburgh Research Archive. *Program*, 39(3): 198-212.
- Khaparde, V., & Ambedkar, B. (2014). Growth and development of electronic theses and dissertation (ETDs) in India. *Journal of Library and Information Sciences*, 2(1): 99-116.
- Lippincott, J. K. (2006). Institutional strategies and policies for electronic theses and dissertations. *ECAR Research Bulletin*, 2006(3): 1-12.
- Lynch, C.A., & Lippincott, J.K. (2005). Institutional repository deployment in the United States as of early 2005. *D-lib Magazine*, 11(9): 1-11.
- McCutcheon, S., Kreyche, M., Beecher Maurer, M., & Nickerson, J. (2008). Morphing metadata: maximizing access to electronic theses and dissertations. *Library Hi Tech*, 26(1): 41-57.
- Morrison, H. (2009). *Scholarly Communication for Librarians*. Oxford: Chandos Publications.
- Nanthini, R., & Varghese, R. R. (2018). Growth of ETDs in India: an analytical study of top contributing Universities of Shodhganga. *Library Herald*, 56 (1): 152-163.
- Narayana, P. R. (2008). *Problems and perspectives in design and development of institutional repositories* (Doctoral dissertations). Available at: <http://shodhganga.inflibnet.ac.in>.
- Park, E. G., Nam, Y. J., & Oh, S. (2007). Integrated framework for electronic theses and dissertations in Korean contexts. *The Journal of Academic Librarianship*, 33(3): 338-346.

- Patra, S.K., Sarkhel, J.K., & Das, M. (2018). National level ETD initiatives by South Asian countries contributed to NDLTD repository. In: *Proceedings of ETD 2018 Taiwan*, Available at: <https://etd2018.ncl.edu.tw/ocs/index.php/etd/etd2018/paper/view/81>.
- Prociou, A. W. (2014). WorldCat, the other ETD database: an exploratory study. *The Reference Librarian*, 55(2): 144-150.
- Rafiq, M. (2008). Issues affecting ETD initiatives in Pakistan: A developing country perspective. Available at: <http://ddms.usim.edu.my/bitstream/123456789/1925/1>.
- Rafiq, M., & Ameen, K. (2012). Use of digital media and demand for digitized contents in higher education sector of Pakistan. *The International Information & Library Review*, 44(3): 116-122.
- Rahman, M.Z., (2015). *Current Practices and Emerging Trends in Preservation of Electronic Theses and Dissertations (ETDs) in University Libraries of Bangladesh*. Available at: <https://www.researchgate.net/>.
- Richardson, W. R., Srinivasan, V., & Fox, E.A. (2008). Knowledge discovery in digital libraries of electronic theses and dissertations: An NDLTD case study. *International Journal on Digital Libraries*, 9(2): 163-171.
- Rimkus, K., Padilla, T., Popp, T., & Martin, G. (2014). Digital preservation file format policies of ARL member libraries: An analysis. *D-Lib Magazine*, 20(3/4).
- 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): 183-194.
- Satyanarayana, K. V., & Babu, B. R. (2008). *Trends in the development of E-Theses in India: issues, constraints and solutions*. Available at: epc.ub.uu.se.

- Sawant, S. (2010). *Institutional repository initiatives in India: A status report*. (Doctoral dissertations). Available at: <http://shodhganga.inflibnet.ac.in>.
- Schopfel, J., Chaudiron, S., Jacquemin, B., Prost, H., Severo, M., & Thiault, F. (2014). Open access to research data in electronic theses and dissertations: an overview. *Library Hi Tech*, 32(4): 612-627.
- Seamans, N. H. (2003). Electronic theses and dissertations as prior publications: what the editors say. *Library Hi Tech*, 21(1): 56-61.
- Sengupta, S. S. (2014). E-Thesis Repositories in the World: a Critical Analysis [Doctoral dissertations]. Available at: shodhganga.inflibnet.ac.in/jspui/bitstream/10603/149126.
- Shaheen, M.A., & Ali, Y. (2008). An overview of ETD initiatives in Pakistan: Proposed model for International Islamic University, Islamabad. Available at: <https://docs.ndltd.org/dspace/handle/2340/1033>.
- Steele, T., & Sump-craithar, N. (2016). Metadata for electronic theses and dissertations: A survey of institutional repositories. *Journal of Library Metadata*, 16 (1): 53-68.
- Swan, A. (2016). Institutional repositories – now and next. In: *University Libraries and Digital Learning Environments*, Routledge: Taylor and Francis Group. pp. 145-160.
- 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.
- Vijayakumar, J. K., & Murthy, T. A. V. (2001). Need of a digital library for Indian theses and dissertations: A model on par with the ETD initiatives at international level, Available at: <https://eprints.rclis.org>.

Yiotis, K. (2008). Electronic theses and dissertation (ETD) repositories: What are they? Where do they come from? How do they work? *OCLC Systems & Services: International Digital Library Perspectives*, 24 (2), 101-115.