# Legal Challenges of ETDs Management at Engineering and Technology University Libraries in Bangladesh

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## ABSTRACT

**Purpose of the Study:** Electronic Theses and Dissertations (ETDs) are very significant for research because they increase the accessibility, visibility, and dissemination of scholarly knowledge. But Engineering and Technology University Libraries in Bangladesh have faced some Legal Challenges in managing ETDs. The main purpose of this study is to explore these Legal Challenges and propose actionable strategies for effective ETDs management.

**Methodology:** This study used a Descriptive Research design and a Quantitative Technique. Data were collected from five (05) Engineering and Technology University Libraries in Bangladesh using a Structured Questionnaire. SPSS version 26.0 was employed for data analysis. The Descriptive Statistics used to summarize and interpret the findings.

**Findings:** The study found that DSpace software is widely used in making ETDs repository but several Legal Challenges impede effective ETDs management. The main challenges include the absence of robust ETDs policies, the need for consent from both supervisor and students for publication, unclear ETDs selection criteria, insufficient copyright legislation, Electronic access simplifying plagiarism detection, and the essential need to safeguard copyright laws to build student trust.

**Originality/Value:** This study represents the first initiative to explore the Legal Challenges of ETDs management in Engineering and Technology University Libraries in Bangladesh. It provides a valuable baseline for future research and policymaking, contributing implicitly to the global research community.

**Keywords:** Electronic Theses and Dissertations, ETDs Management, Legal Challenges, Engineering and Technology University Libraries, Bangladesh.

## INTRODUCTION

Electronic Theses and Dissertations (ETDs) are the digital version of traditional printed theses and dissertations. The prevalence of ETDs is gradually expanding due to the acceptance by universities worldwide to enhance the accessibility of scholarly research. ETDs offer an efficient platform for disseminating scholarly work, supporting open access, and fostering global collaboration (Mckenna-Foster et al., 2023).

The ETDs initiative originated in the 1980s and progressed with the rapid advancement of electronic publishing on the internet (Saloi, 2021). But Bangladesh began the journey of ETDs preservation by the implementation of open-source institutional repository software in 2005 (Islam et al., 2017). As per the literature, when Bangladesh is compared to other developing nations, it remains in the initial phases of ETDs management.

As a rising nation, the Engineering and Technology University Libraries in Bangladesh play an important role in the research, innovation, and development of the country. However, these university libraries face different challenges for the implementation of ETDs management systems and ensuring long-term digital preservation (Cayabyab, 2015; Das, 2019 & Rahman, 2023). The advancement of digital technology and the internet offers

unprecedented opportunities for the acquisition, preservation, and dissemination of knowledge. It fosters transparency, global connectivity, and robust hosting solutions, while simultaneously eliminating many traditional barriers in access to information (Rahman & Mezbah-Ul-Isla,m 2014).

According to Al Salmi (2014), effective ETDs management requires a comprehensive analysis of the associated challenges and underscores the importance of formulating practical and actionable strategies to address them. So the aim of this study is to identify the Legal challenges of ETDs Management at Engineering and Technology University Libraries in Bangladesh.

The legal challenges of ETDs management are the problems that arise when laws and regulations interact with the production, submission, distribution, and preservation of ETDs. These laws and regulations mainly relate to copyright, intellectual property, data privacy, contracts, and accessibility. The information professionals have dissatisfaction to understand the Legal challenges (Hasan & Panda, 2025)

Author believes this study will be a resilient basis for understanding the Legal challenges and propose actionable strategies for the implementation of ETDs management at Engineering and Technology University Libraries in Bangladesh and in other developing countries where there is limited literature.

## LITERATURE REVIEW

Virginia Tech started mandating ETDs on January 1, 1997 (Fox & Chandrasekar, 2021). This is a versatile and distinct genre that enriches digital libraries and includes text, color photographs, and other multimedia, such as audio and video files. Virginia Tech was the first to support the creation of ETDs; since then, the movement has spread internationally and grown greatly, including NDLTD, OhioLINK, CyberTheses, DART-Europe, Google Scholar, UTOG, DiTeD, DiVA, TDX, Shodhganga, and DAATJ (NDLTD, 2021).

Schöpfel et al. (2014) conducted a study on the integration of ETDs within the current research information systems (CRIS). The objective of the study was to show the present ETD infrastructures using actual data from systems in Slovakia, Iran, and France. The study also focused on some important areas including complementary material, interoperability and metadata. It also provided some suggestions for effectively integrating ETDs into CRIS.

Salmi (2014) examined the variables that influence ETDs implementation in the Arab Gulf states. The study address some legal challenges such as plagiarism, copyright issues and future publication rights. Another study was conducted by Cayabyab (2015) on ETDs Initiatives, Challenges and future development. The objective of the study was to exhibit new global ideas as standards for ETDs programs in developing nations. This study examine several ETDs management challenges such as accessibility, standard file formats, storage platforms, visibility, interoperability, centralization, metadata, and sustainability. It also discussed legal issues such as copyright, plagiarism, intellectual property rights, skills in incorporating multimedia, and political implications, as well as access fees, absence of policy, and full access. In a study on the retrospective digitization of ETDs for an institutional repository, Jaffy (2025) highlighted some important legal challenges such as digital accessibility, copyright, licensing, and the creation of digitization agreements with researchers. Ramirez, M., & Martin, K. (2020) conducted a study on Bridging the Gaps in ETDs Administration. Another study was conducted by Gunjal & Gaitanou (2015) on issues and challenges of ETDs management and Open Access for research and development. This study focused on some Technological challenges for ETDs management, such as Adopting Dublin Core (DC) Element Set, Protocols such as OAI-PMH, MARC21, and controlled vocabularies, Semantic Web, Linked Data, and open access. System upgrade, Implementation of discovery tools, Proper indexing and harvesting, Social plug-ins, and Long-term preservation.

Patra (2017) examines e-resource management in libraries at Indian management institutes. This study examines procedures related to ERM elements such as licensing, acquisition, and selection. The study identified challenges due to the rapid growth of e-resources post-digitization.

The ETDs movement in Bangladesh started by implementing an institutional repository in 2005 at ICDDR'B Library using DSpace open-source software (Islam et al., 2017). The history of the adaptation of ETDs

management started by open access initiatives in Bangladesh, which have been described by many researchers (Islam & Akter, 2013; Elahi & Mezbah-Ul-Islam, 2018; Das, 2019; Islam et al., 2021). Das (2019) examined that 96.08% of journals in Bangladesh are published as open access through BanglaJOL. However, adoption of OAI-PMH protocols remains low, with only 27.29% of repositories following these standards. The study also focused on two administrative challenges, such as slow internet and a lack of ICT experts.

Needs of developing institutional repositories in the Bangladesh context are addressed in several articles (Shoeb, 2010; Chowdhury et al., 2011; Islam & Akter, 2013; Elahi & Mezbah-Ul-Islam, 2018; Chowdhury, 2020; Islam et al., 2021). Some authors have examined the growth and development of Institutional Repositories (IRs) in Bangladesh (Islam & Akter, 2013; Islam et al., 2017).  Research has been done on IR, an initiative of building a digital library program by Greenstone Digital Library Software at East-west University (Alam & Islam, 2011); barriers and recommendations for OA through IR (Uddin et al., 2014), and IR's role in hunching higher education (Mostofa et al., 2015), Factors influencing the use of a digital library (Tabassum et al., 2015), the development of an institutional repository using DSpace software (Chowdhury et al., 2011; Uddin, et al. 2014), aspects of open access in developing countries such as Bangladesh (Islam and Akter, 2013), challenges of digitization programs in Bangladesh (Alam, 2012; ), and the process of establishing IR at Independent University Bangladesh (IUB) using Dspace (Shoeb, 2010).

The preservation of electronic theses and dissertations (ETDs) began as part of institutional repositories, initially based on voluntary submissions by MPhil and PhD researchers (Rahman, 2015; Zhou, 2021). In some universities ETDs submission is mandatory, but it is optional in other universities (Perera & Rahman, 2017). This study  highlight various challenges and initiatives in ETDs management in Bangladesh and the surrounding regions. Rahman (2015) and Das et al. (2015) have identified some challenges in ETDs management both in Bangladesh and India, i.e., lack of standard metadata format, network sharing, and use of open-source software. In these contexts, KrishiKosh and DAATJ  are functioning as the primary ETDs repositories. Additionally, Perera and Rahman (2017) studied the role of ETDs to address information gaps and identify key influencing factors  for using ETDs among the scholars in Sri Lanka and Bangladesh. Additionally,  Shah et al. (2021) and Rahman and Perera (2022) examined challenges of ETD management and the importance of open access and digital preservation. Rahman (2023) highlighted ongoing ETDs initiatives in both public and private universities while identifying persistent gaps in compliance with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH).

**Inferences**

From the literature review, it is found that most of the universities rely on open-source software like DSpace to host their institutional repositories in Bangladesh (Shah et al., 2021), yet managing ETDs has presented several challenges, particularly in terms of legal issues (Rahman, 2015). The literature review found the following inferences:

1. The existing literature reveals a significant research gap related to ETDs management in Engineering and Technology university libraries in Bangladesh.

2. There is a lack of comprehensive studies to examine the Legal Challenges of ETDs management.

# RESEARCH METHODOLOGY

This study applied a descriptive research design and quantitative methods. The study data were collected through the '*Google Form.*' A structured questionnaire was used to collect data from five purposively selected engineering and technology university libraries in Bangladesh that have digital repositories of ETDs. The questionnaire used a five-point Likert scale to assess the perceived technological challenges. The respondents were the head of the library or a librarian of those university libraries.  Data were analyzed using Descriptive Statistics of SPSS version 26.0, and Cronbach's Coefficient Alpha was applied to test the reliability and validity of the questionnaire responses. This methodology enables the integration of numerical data with qualitative insights, thereby offering a holistic perspective on the issues under investigation.

**Research Objectives**

The objectives of the study are as follows:

a) To assess the present status of ETDs management at Engineering and Technology University Libraries in Bangladesh.

b) To identify the Legal Challenges for the implementation of ETDs management at Engineering and Technology University Libraries in Bangladesh.

c) To propose actionable strategies to overcome the Legal Challenges of ETDs management at Engineering and Technology University Libraries in Bangladesh.

# FINDINGS

The study findings are divided into three sections: the current status of ETDs management, legal challenges, and proposed recommendations at engineering and technology university libraries in Bangladesh, which are discussed below:

**Present Status**

Table-1: Present Status of ETDs Management at Engineering and Technology University Libraries in Bangladesh

| SL | Name of Library | Access Type | | Download Facility | | Software Type | | Software Name | File Format | Collection Process | Types of ETDs | | Language | Server Security | Collections | | Manpower | | Repository Managed by | | | ETDs Management Policy | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Open Access | Restricted access | Yes | No | Open Source | Proprietary | Software Name | File Format | Collection Process | Born Digital | Digitize | Language | Server Security | Print TDs | ETDs | Professional | Non-Professional | Library Professionals | University IT Cell | Out Sourcing | Yes | No |
| 1. | BUET Library | ✔ | X | ✔ | X | ✔ | X | DSpace | PDF | CoE | ✔ | ✔ | English | Yes | 5950 | 5551 | 16 | 27 | ✔ | X | X | X | ✔ |
| 2. | DUET Library | X | ✔ | X | ✔ | X | ✔ | Proprietar | PDF | CoE | ✔ | ✔ | English | Yes | 800 | 750 | 6 | 12 | ✔ | X | X | X | ✔ |
| 3. | CUET Library | ✔ | X | ✔ | X | ✔ | X | DSpace | PDF | CoE | ✔ | ✔ | English | Yes | 2500 | 311 | 7 | 16 | ✔ | X | X | X | ✔ |
| 4. | KUET Library | ✔ | X | ✔ | X | ✔ | X | DSpace | PDF | CoE | ✔ | ✔ | English | Yes | 1200 | 1043 | 9 | 32 | ✔ | X | X | X | ✔ |

| 5. | RUET Library | X | ✔ | X | ✔ | ✔ | X | DSpace | PDF | CoE | ✔ | ✔ | English | Yes | 1760 | 1760 | 6 | 14 | X | ✔ | X | X | ✔ |

Source: Authors' own work

**Access Types:** 60% of repositories are open access, and the rest of the 40% of repositories have access restrictions.

**Download Facility:** 60% of repositories are provided. Download Faculty, and the rest of the 40% of repositories have download restrictions.

**Software Type:** 80% of repositories are managed by open-source software, and it is DSpace. On the other hand, 20% repositories are managed by in-house customized software.

**File format:** 100% of repositories use the Portable Document Format (PDF) file format to preserve their ETDs.

**Collection Process:** 100% of theses and dissertations are collected by university libraries through the university's controller of examinations section.

**Types of ETDs:** Both born-digital and digitized ETDs are preserved in the repositories of the respective university libraries.

**Language:** All libraries (100%) employ English as their sole language, exhibiting a commitment to accessibility for a broader academic readership.

**Server Security:** The study shows that all of the libraries (100%) are use server security system.

**Collections:** The study found that the BUET Library holds the highest number of both printed theses and dissertations (5,950) and electronic theses and dissertations (ETDs) (5,551). In contrast, the DUET Library has the lowest number of printed theses and dissertations (800), while the CUET Library holds the lowest number of ETDs (311).The DUET Library has 800 printed TDs and 750 ETDs. The CUET Library: 2,500 printed TDs and 311 ETDs. The KUET Library has 1,200 printed TDs and 1,043 ETDs, and the RUET Library has 1,760 printed TDs and 1,760 ETDs.

**Collections of Print TDs & ETDs**

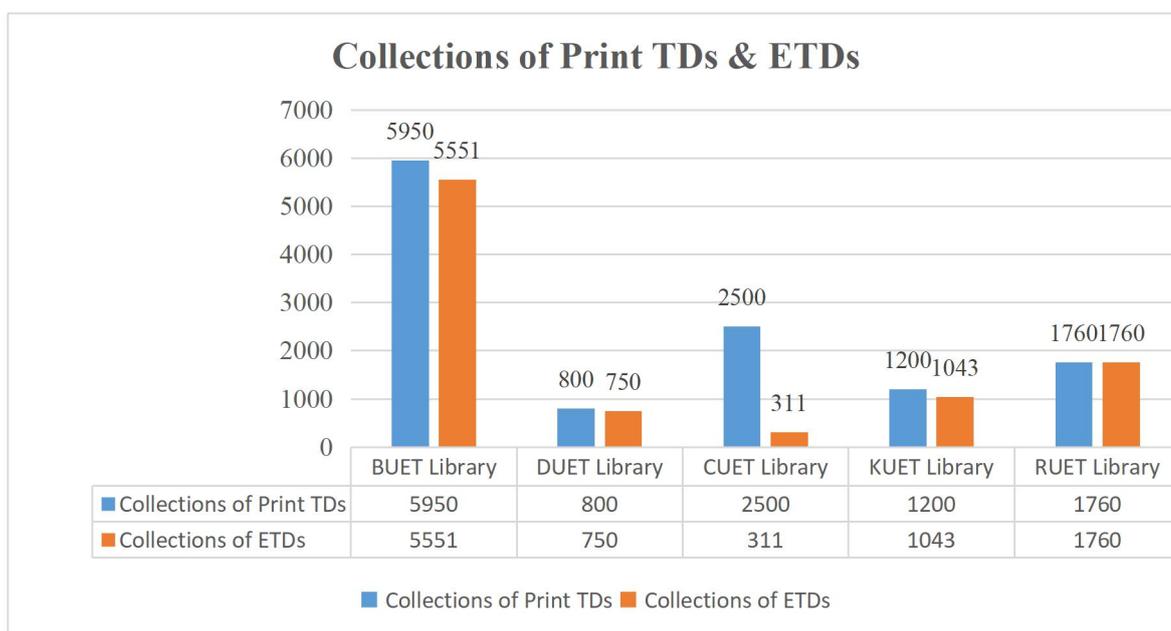| | BUET Library | DUET Library | CUET Library | KUET Library | RUET Library |
|---|---|---|---|---|---|
| Collections of Print TDs | 5950 | 800 | 2500 | 1200 | 1760 |
| Collections of ETDs | 5551 | 750 | 311 | 1043 | 1760 |

Figure 1: Collections of Print TDs & ETDs

**Manpower:** The Libraries are staffed by both professional and non-professional personnel. Figure 2 highlights that the BUET Library has the largest workforce, with a total 43 staff members, 38% professional and 62 % non-professional staff. The second largest workforce at KUET Library with 41 staff members, comprising 22% are professional and 78 % non-professional staff. The CUET Library have total 23 manpower, with 31% professional and 69 % non-professional staff. The RUET Library has 20 manpower with 31 % are professional staff and 69 % non-professional. Finally, the DUET Library has the smallest workforce total 18 staff members with 30% professional and 70% non-professional..

(FIGURE MODIFIED)



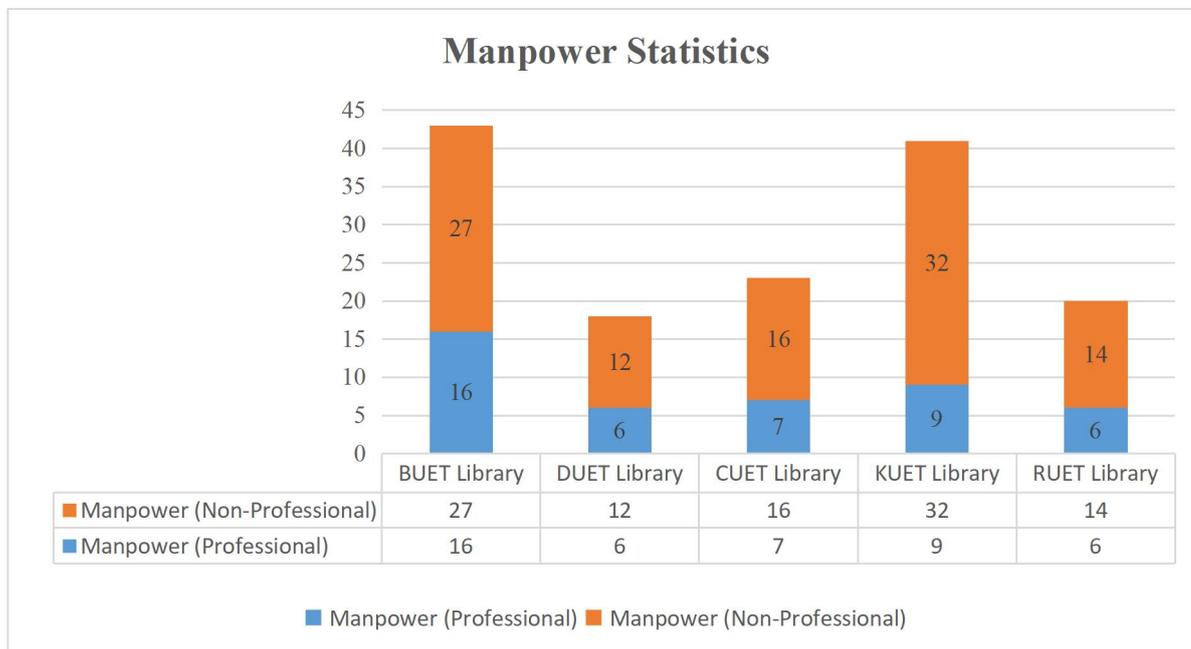| | BUET Library | DUET Library | CUET Library | KUET Library | RUET Library |
|---|---|---|---|---|---|
| Manpower (Non-Professional) | 27 | 12 | 16 | 32 | 14 |
| Manpower (Professional) | 16 | 6 | 7 | 9 | 6 |

Figure -2: Manpower Statistics

**Repository Management:** The 80% of ETDs repository is managed by the library's internal staff, and 20% is managed by the university IT cell.

**ETDs Management Policy:** The study found that none of the engineering and technology university libraries have a formal or standardized ETDs management policy in place.

**Key Insight of Present Status:**

The key insights into the present status of ETDs management are discussed below:

1. **Uniformity in Tools and Formats**: The study data shows that the selected university libraries consistently use **DSpace** software, which is open-source repository software. On the other hand, the **PDF** file format is used to ensure standardization across institutions.

2. **High Conversion Rates**: Most of the university libraries have successfully digitized a significant portion of their print theses. Some repositories were able to convert all of their print theses and dissertations.

3. **Professional Staffing Disparities**: There is a significant variation in the proportion of library employees between professional employees and non-professionals, which may affect the overall efficiency and quality of repository management.

4. **Security and Accessibility**: All surveyed university libraries have adapted server security and provide open access and download facilities. This open access contributes to improved accessibility of ETDs for academic users.

5.  **Exclusive Management by Libraries**: Every library manages its repository by the internal library professionals; none of them outsource the repository management team or involve IT cells. That indicates a possible gap in technical support and resource optimization.

## Legal Challenges

This study presents the findings on Legal challenges in two sub-sections: reliability statistics and descriptive statistics.

### Reliability Statistics of Legal Challenges

To examine the Legal Challenges, a 5-point Likert scale questionnaire was designed and rigorously validated using Cronbach's Coefficient Alpha, yielding a reliability score of 0.772 as per the following Table 2, which meets the standards set by Nunnally (1978) for social science research, where a value above 0.7 is considered acceptable. This suggests that the questionnaire items are consistently measuring the same underlying construct.

Table-2: Reliability Statistics

| Case Processing Summary | | | |
|---|---|---|---|
| | | N | % |
| **Cases** | Valid | 5 | 100.0 |
| | Excluded[a] | 0 | .0 |
| | Total | 5 | 100.0 |
| a. Listwise deletion based on all variables in the procedure. | | | |

| Reliability Statistics | |
|---|---|
| Cronbach's Alpha | N of Items |
| .772 | 8 |

### Descriptive Statistics of Legal Challenges

The following Table 3 presents the legal challenges of ETDs management at engineering and technology university libraries in Bangladesh.

Table 3: Descriptive Statistics of Legal Challenges (N=5)

| SL | Statements | (1) Strongly Disagree | (2) Disagree | (3) Neutral | (4) Agree | (5) Strongly Agree | Mode | Mean | SD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | The university does not have suitable policies and legislation in place to effectively manage its ETDs. | 0(0%) | 0(0%) | 0(0%) | 0(0%) | 5(100%) | 5(100%) | 5.0 | 0 |
| 2 | The university is required to obtain prior agreement from students before making their theses electronically available. | 0(0%) | 0(0%) | 1(20%) | 3(60%) | 1(20%) | 4(60%) | 4.0 | 0.71 |

| 3 | Journals may refuse to publish articles from a thesis if it has already been published electronically | 0(0%) | 0(0%) | 1(20%) | 3(60%) | 1(20%) | 4(60%) | 4.0 | 0.71 |
|---|---|---|---|---|---|---|---|---|---|
| 4 | The University should establish specific criteria for selecting theses to be electronically published in their ETDs programs. | 0(0%) | 0(0%) | 1(20%) | 4(80%) | 0(0%) | 4(80%) | 3.8 | 0.45 |
| 5 | Supervisors' agreement is essential before their students' theses can be electronically available. | 0(0%) | 0(0%) | 1(20%) | 3(60%) | 1(20%) | 4(60%) | 4.0 | 0.71 |
| 6 | Lack of appropriate policies and legislation to govern the copyright of these. | 0(0%) | 0(0%) | 0(0%) | 1(20%) | 4(80%) | 5(80%) | 4.8 | 0.45 |
| 7 | Discovering plagiarism is easier when these are electronically available. | 0(0%) | 0(0%) | 0(0%) | 2(40%) | 3(60%) | 5(60%) | 4.6 | 0.55 |
| 8 | Protecting copyright by the university will give students' more confidence to participate in this program. | 0.(0%) | 0(0%) | 0(0%) | 2(40%) | 3(60%) | 5(60%) | 4.6 | 0.55 |

**Absence of ETDs Management Suitable Policies and Legislation:** All the respondents (100%) strongly agreed that the university libraries have inadequate policies and legislation for effective ETDs management. This highlights the need for administrative measures to develop ETDs management policy. The Mean value 5.0 and standard deviation of 0.0 indicate the comprehensive consent among respondents.

**Receive Student Consent Before Publishing ETDs:** The data 80 % (Agree + Strongly Agree) with no disagreement and only one respondent remaining neutral indicates broad agreement among respondents that the university must obtain prior student consent for making theses electronically accessible. The Mean value of 4.0 and the standard deviation of 0.71 indicate a strong and consistent level of agreement among the respondents.

**Journals May Refuse to Publish Articles Derived From ETDs:** The study found that 80% of respondents (Agree + Strongly Agree) expressed concern that journals may refuse to publish articles from a thesis if it has already been published electronically, with no disagreement, but only (20%) respondent remaining neutral. The mean score of 4.0 and standard deviationof 0.71 indicate a strong and consistent agreement among respondents.

**Lack of Thesis Selection Criteria for ETDs Programs:** The study data has shown that 80% of respondents "strongly agree" and 20% are "neutral". The university library should set up standards for selecting theses for electronic publication. The mean 3.8 reflects a strong positive inclination among respondents, and the standard deviation (0.45) indicates a high level of consistency and minimal variability of the responses. A significant proportion of respondents emphasize that universities should establish standard guidelines for selecting ETDs, which should be made available through ETD repositories.

**Supervisor Consent Required for ETDs Release:** Overall, 60% of respondents agreed and 20% strongly agreed that supervisors' consent is required before submitting the ETDs to the institutional repository. But 20% of respondents were neutral, which means they have lack knowledge about this. The mean score of 4.0 indicates a high level of overall agreement, and the standard deviation (0.71) indicates minimal variation, so responses were consistent.

**Inadequate Copyright Law:** All respondents (100%) agreed about the absence of adequate ETDs copyright policies and laws. 80% respondents strongly agreed and 20% agreed. The mean score 4.8 and the standard deviation 0.45 indicate a strong and consistent perception of a significant policy gap, indicating an urgent need for the university to develop a comprehensive copyright governance framework for ETDs.

**Electronic Access Simplifies Plagiarism Detection**: the study found that 60% respondent strongly agreed and 40% agreed that ETDs facilitates easier to detect plagiarism. The high Mean score (4.6) and a low Standard Deviation (0.55) indicate strong and consistent support of this statement. These findings highlighted the importance of expanding ETDs programs to strengthen academic integrity.

**University Copyright Protection Boosts Students' Confidence**: All respondents agreed on university-led copyright protection. This will give students more confidence to participate in the ETD program, when 60% of the respondents strongly agreed and 40% agreed. The Mean score (4.60) and Standard Deviation (0.55) reflect consistency in responses. These results reinforce the view that copyright protection is widely perceived as a critical institutional responsibility in encouraging student participation in ETDs.

**Overall Observation of Legal Challenges:**

The study data show a high level of consensus among respondents about the Legal Challenges associated with ETDs management. Majority of the participants feel that, the university has lack of clear policies and legal frameworks for ETDs management effectively, especially in areas like copyright, prior permissions, and supervisor consent. The study also found some key issues included the need for proper institutional policies copyright protection, and concerns about publishing restrictions from journals. Respondents also emphasized the importance of obtaining agreement from students and supervisors before making theses available electronically. Additionally, there was broad consensus that electronic access aids in plagiarism detection and boosts student confidence when copyright is protected. The following figure-1: show the mean score of Legal Challenges.
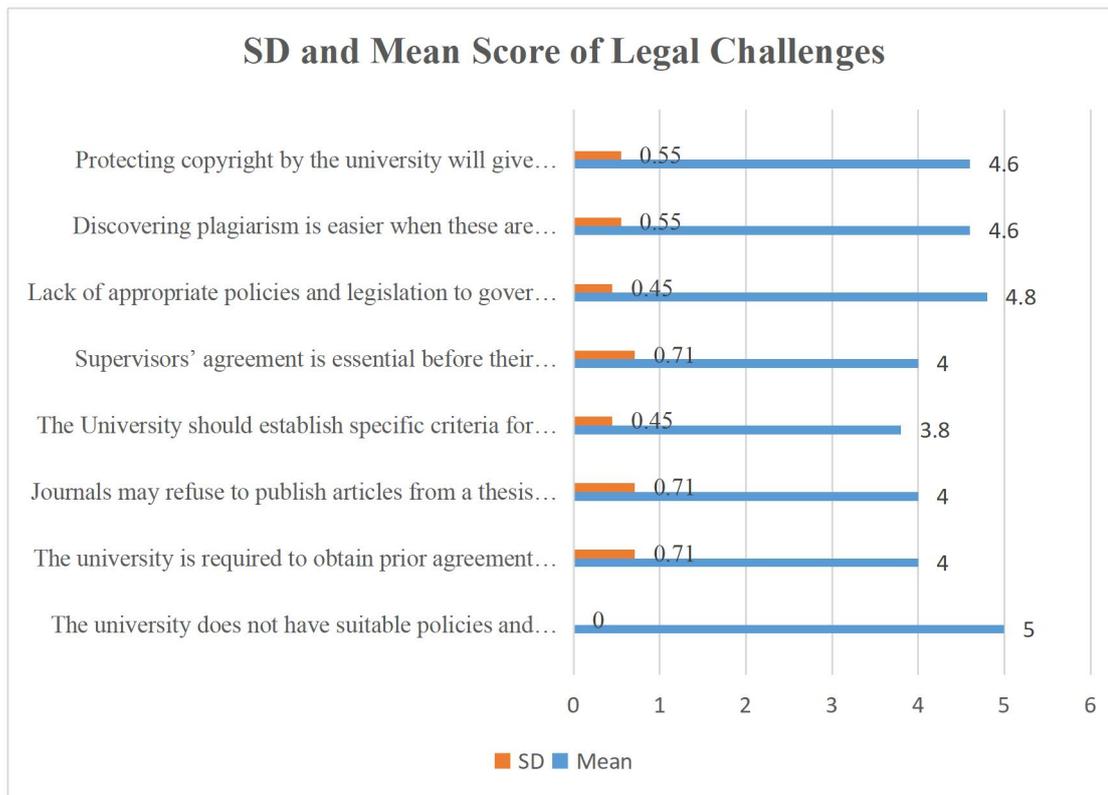


Figure 3: SD and Mean Score of Legal Challenges

**Key Insight – Legal Challenges in ETDs Management**

This study identified some Legal Challenges of ETDs management, such as absence of clear policies and rules, legislation, and copyright frameworks within university libraries. The 100% of respondents commonly agreed about the urgent need for formal policies and administrative regulations to guide ETDs management.

Additionally, strong consensus (mean scores 4.0–5.0) indicates that:

1. Supervisor and student consent are seen as essential for ETDs publication, often delaying access.

2. There is a risk of journal rejection for previously published ETDs, causing concern among stakeholders.

3. The lack of selection criteria for ETDs inclusion reflects a gap in procedural clarity.

4. Inadequate copyright legislation is a critical gap, and respondents strongly support university-led copyright protection to build student trust.

5. On the positive side, electronic access to theses is widely recognized for enhancing plagiarism detection and promoting academic integrity.

## DISCUSSION

This study concentrated on the present status of ETDs management at Engineering and Technology University Libraries in Bangladesh, to identify key Legal Challenges, and proposed recommendations and actionable strategies to address these challenges.

The study revealed that 60% of ETDs repositories are open access, while the remaining 40% are restricted; however, 60% of repositories offer download facilities, and 40% have download restrictions for their users. Open-source software provides cost-effective and flexible repository solutions (Elahi and Mezbah-Ul- Islam, 2018); 80% of repositories are managed by open-source software, and it is DSpace, and 20% of repositories are managed by in-house customized software. As public universities, ETDs are collected through the Controller of Examinations of each institution. Each ETDs repository manages both born-digital and digitized theses, all stored in PDF format. The language of all ETDs is English. Most libraries have successfully converted a substantial portion of their print theses to digital format, with some achieving 100% conversion. Significant differences were observed in the proportion of professional and non-professional staff involved in repository management, which may affect the overall efficiency and quality of services. While all libraries have implemented server security measures and provide download access to facilitate academic use, The 80% of ETDs repository are managed by the library's internal staff, and the 20% are managed by the university's IT cell.

To examine Technological Challenges, a 5-point Likert scale questionnaire was tested for reliability using Cronbach's Alpha, yielding a satisfactory value. The study revealed that 100% of respondents agreed that the university libraries have inadequate policies and legislation for effective ETDs management, inadequate copyright legislation, electronic access simplifies plagiarism detection, and university copyright protection boosts students' confidence. In contrast, 80% of respondents identified minor challenges, such as receiving student consent before publishing ETDs; journals may refuse to publish articles derived from ETDs; lack of thesis selection criteria for ETDs programs; on the other hand, some respondents expressed mixed perceptions regarding Supervisor Consent Required for ETDs Release, where 60% of respondents 'agreed,' 20% 'strongly agreed,' and 20% were neutral.The study also emphasized that robust legal and institutional frameworks are essential to address legal concerns. Finally, the study proposes recommendations and actionable strategies to address these issues.

## PROPOSE RECOMMENDATIONS

From the results of the study, some recommendations were proposed to resolve the Legal Challenges of ETDs management. The main focus of the study is to ensure the entire development of EDTs management system.

**1. Develop Clear Policies for ETDs Management**

**Challenge Identified:** All of the respondents agreed that the university libraries have a lack of EDTs management policy and rules.

**Strategies:**

**Committee Formation:** According to Sheble & Hill (1994), a committee may be formed with the combination of a librarian, a legal professional, an IT professional, and a faculty member for making ETDs management policy and rules. This committee will evaluate the current ETDs management challenges, comparing the international best practices and implementing them in the local context.

**Specify Law and Policy:** To make a legal framework for ETDs management. This formal policy and rules

will ensure copyright, intellectual property rights, plagiarism detection, and embargo periods.

**Assessing Policies from Established ETDs Institutions:** Assessing the ETDs management policy and rules of the leading universities of the developing countries can identify the best practices. Those practices may help solve the common problem  (Cayabyab, 2015). This comparative analysis makes the newly developed ETDs management policy legally sound and ensures global alignment.

## 2. Obtain Student Consent Before Online Publication

**Challenges Identified:** According to the study, 80% of respondents agreed that both the supervisor and student consent are essential before releasing the ETDs. But 20% of respondents were neutral, and no disagreement was found.

**Strategy:**

**Integrate Consent in Thesis Submission:** To added concent letter is very important at the time of thesis submission because it ensures the student's explicit permission and reduces legal risk (Mauch & Park, 2003). This process ensures instant open access and reduces embargo or controlled access to ETDs.

**Provide Orientation Sessions on e-Publishing:** Conduct an orientation programs regarding the e-publication for both students and faculty members so that they can be aware (Björklund, et al., 2024). This process increases the awareness of the online publication and is helpful for decision-making.

## 3. Clarify Journal Policies on ETD-Based Publications

**Challenges Identified:** 80% of respondents assume that a journal publication authority may reject the article that has been taken from the ETDs.

**Strategy:**

**Compile a Guide of Publisher Policies on ETDs:** A guideline may be produced regarding the publisher policy for student, teacher and librarians (Veve, 2021). This guideline may help them to know the requirements for journal publishing.

**Train Students and Supervisors on Prior Publication Concerns:** Before publishing an article written from the ETDs, a workshop and orientation on prior publication may help the author for decision making. This knowledge can help to reduce the percentage of rejection.

**Allow Embargo Option for ETDs:** Sensitive data protection, Patent application, or providing the opportunity for publication, the embargo period of ETDs should be allowed (Veve, 2021). This approach balances open access with legal and academic considerations.

## 4. Set Clear Criteria for Digital Thesis Publication.

**Challenges Identified:** 80% of respondents believe that to publish a thesis electronically, a library should establish standard thesis selection criteria. When 20% of respondents were neutral.

**Strategy:**

**Define Quality Benchmarks:** According to Ghosh & Roy (2023), the originality of research, the relevant field, and the approval of the supervisor are essential to ensure quality benchmarks of ETDs.

**Develop an Internal Review and Approval Workflow:** From submission to publication of the thesis online, a workshop should be organized regarding supervisor review, similarity test, and uploading. This workflow ensures consistency, accountability, and timely processing, reducing errors and legal risks (Panek et al., 2024).

## 5. Ensure Supervisor's Consent for Electronic Availability

**Challenges Identified:** 80% of respondents agreed that, for prior publication, supervisor agreement is essential before submitting the thesis electronically.

**Strategy:**

**Include Supervisor Consent in Submission Forms:** Supervisor consent is important before digital submission to ensure quality control and prevent future disputes (Mauch & Park, 2003).

**Legal Awareness for Faculty:** A workshop and training session should be conducted regarding the information literacy of legal considerations for ETDs' publication (Flora et al., 2025). This session may help the faculty members.

## 6. Create Policies to Address Copyright Protection

**Challenge Identified:** All of the respondents agree regarding the policy formulation of protecting ETDs' copyright.

**Challenge Identified:** The study shows that 100% of respondents agreed, with 80% strongly agreed and 20% agreed, about policy creation to protect ETD copyright.

**Strategy:**

**Define Copyright Ownership:** To develop a copyright policy, an expert team from the university may be formulated (Gaffar & Albarashdi, 2024). This committee will ensure legal confidence.

**Creative Commons Licensing:** Allow the author to use the Creative Commons License for ETDs. This may help authors to reuse, share, or adapt them (Rahman, 2023).

## 7. Utilize Electronic Availability to Detect and Prevent Plagiarism

**Challenge Identified:** All the respondents agreed that plagiarism detection is easier when the ETDs are available in online.

**Strategy:**

**Integrate ETDs with Plagiarism Checkers:** According to Dawson & Langrell (2023), the ETDs repository should be integrated with the plagiarism checking tools. This may help to detect similarity automatically and may help academic integrity and prevent unauthorized copying.

**Highlight ETDs Plagiarism Checks:** The repository needs to highlight ETDs plagiarism checks. Because when a university repository detects plagiarism in an ETD before publication, it proves the effectiveness of the repository, alerts researchers regarding ethical standards, and supports academic and legal research practices.

## 8. Establish a Strong Copyright Protection Framework

Challenge Identified: When the university protects copyright, then students feel more confident in ETDs program. The study found that 100% of the respondents agreed about it. They think that university-led copyright protection increases the studnet confidence.

**Strategy:**

**Clarify Copyright Policies to Students:** The university authority should explain the copyright rules and regulations to the students so that the students can be aware of their rights to the ETDs creation, online submission, and publication (Smart & Clarke, 2021). This communication may help with proper licensing, unexpected copyright rule violations, and responsive ETDs use and expunction.

**Legal Support for IP Misuse:** Incase of intellectual property like ETDs miss use, the university authority will ensure legal support for the student and faculty members (Mary, 2024). This legal support will incorporate the unauthorized reproduction, violation of copyright law, and effective implementation of university policy and rules.

### Implications

The results of this study are highly significant to librarians, researchers, and policymakers to improve ETDs management. This study may serve as a roadmap for the implementation of ETDs management system and ensure positive changes in institutional legal frameworks. Future studies may also examine the effectiveness of the legal processes, enforcement strategies, and policy compliance in relation to the identification and resolution of plagiarism.

### Limitations

This study has several limitations, such as not exploring the preservation process of printed theses and dissertations. The study was conducted among the heads of libraries only, and there were some other limitations, such as time, manpower, and resources.

### Originality

The proposed recommendations and actionable strategies will contribute to the field of ETDs management. This empirical study is grounded in a reliable questionnaire (Cronbach's Alpha = 0.772) and identified various key issues, including a lack of institutional policy, copyright protection, a lack of student and supervisor consent, and unclear ETDs selection criteria. To resolve these challenges, the study recommended some policies for ETDs management, which include student and supervisor consent before online publication, clarifying journal policies on ETD-based publications, setting criteria for digital thesis publications, and implementing strong copyright protection, etc.

This study will fill the gap in ETD-related literature and offer practical guidance for library administrators to improve ETDs management practices and ensure their long-term sustainability. It will help policymakers not only in Bangladesh but also in the other developing countries that have a shortage of ETD-related literature

## CONCLUSION

This study examines the Legal Challenges of ETDs managing in Engineering and Technolgy University Libraries in Bangladesh. Despite advancements through digitization and the implementation of platforms like DSpace, significant barriers persist—such as the lack of comprehensive ETD policies, inadequate consent mechanisms, unclear selection criteria, and insufficient copyright protections. To address these issues, the study recommends revising ETD policies with stakeholder input, introducing embargo options to prevent journal rejection, ensuring supervisor approval for ETD release, clarifying selection standards, and strengthening copyright frameworks to build student trust. Effectively tackling these challenges will enhance research accessibility, reinforce academic integrity, and ensure the sustainability of digital repositories. Ultimately, addressing these legal and policy gaps is vital for optimizing ETDs management in Engineering and Technology universities and fostering innovation in digital collection development research across Bangladesh and other developing countries in Asia and Africa.

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