
Assessing The Impact Of Digitalized Repositories On User Experience In Southern Government Engineering College Libraries In Tamil Nadu: Awareness, Satisfaction, And Challenges

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ABSTRACT

Purpose: This study assesses the impact of digitalized repositories on user experience among students and faculty in government engineering college libraries across the southern districts of Tamil Nadu. It specifically measures levels of awareness, user satisfaction, and the primary challenges encountered.

Methodology: A descriptive survey research design was employed. Using stratified random sampling, 450 respondents (360 students and 90 faculty members) were drawn from six government engineering colleges in Madurai, Tirunelveli, and Kanyakumari districts. A structured questionnaire with a five-point Likert scale and open-ended responses was used for data collection. The response rate was 86.4% (n=389).

Findings: Results indicate moderate to high awareness (mean=3.8/5) of digital repositories (DRs), with faculty showing significantly higher awareness than students. Satisfaction levels are moderate (mean=3.4/5), driven mainly by 24/7 accessibility and quick retrieval. However, major challenges include slow internet bandwidth (58%), lack of advanced search training (47%), and inconsistent metadata (39%). A statistically significant positive correlation ($r=0.62$, $p<0.01$) was found between awareness and satisfaction.

Originality/Value: This is the first comprehensive study focusing on the user experience of digital repositories in the under-researched context of southern Tamil Nadu's government engineering college libraries, providing actionable insights for library administrators and policymakers

KEYWORDS: Digital repositories, user experience, awareness, satisfaction, engineering college libraries, Tamil Nadu, institutional repositories

INTRODUCTION

The paradigm shift from print to digital has fundamentally transformed academic libraries. Digitalized repositories institutional or departmental archives that collect, preserve, and disseminate the intellectual output of an institution are now critical infrastructure in engineering education (Lynch, 2003). In Tamil Nadu, a hub of technical education in India, government engineering colleges are under increasing pressure to adopt digital library services. However, the mere existence of digital repositories does not guarantee enhanced user experience (UX). UX encompasses not only accessibility but also awareness, ease of use, satisfaction, and the resolution of technical barriers. While several studies have examined digital libraries in urban Indian contexts, the southern districts of Tamil Nadu characterized by a mix of urban and semi-urban engineering colleges remain underexplored. This study addresses this gap by systematically evaluating the impact of digitalized repositories on end-users in these libraries.

2. LITERATURE REVIEW

2.1 Digital Repositories in Academic Libraries

Digital repositories (DRs) have evolved from simple e-print archives to comprehensive platforms hosting theses, dissertations, question banks, lab manuals, and faculty publications. Studies by Kumbar and Hadagali (2018) in Karnataka showed that DRs enhance the visibility of institutional research.

2.2 User Awareness and Satisfaction

Awareness is the primary predictor of DR usage. Rao and Babu (2020) found that only 35% of engineering students in tier-2 Indian cities were fully aware of their library’s digital repository features. Satisfaction is often linked to interface design, download speed, and relevance of content (Tella, 2019).

2.3 Challenges in the Indian Context

Key challenges identified include: insufficient bandwidth, lack of training, poor metadata quality, and low faculty contribution to repositories (Singh & Sanaman, 2021). In Tamil Nadu specifically, a study by Selvam and Murugan (2022) noted that power outages and inadequate IT support remain problematic in southern districts.

2.4 Research Gap

No prior study has holistically assessed awareness, satisfaction, and challenges together in the context of government engineering college libraries in southern Tamil Nadu. This study fills that gap.

3. Objectives

The specific objectives of this study are:

1. To measure the level of user awareness of digitalized repositories.
2. To assess user satisfaction with digital repository services.
3. To identify the major technical and non-technical challenges faced by users.
4. To examine the relationship between awareness and satisfaction levels.
5. To propose recommendations based on user feedback.

4. METHODOLOGY

4.1 Research Design and Sampling

A descriptive cross-sectional survey was conducted. The population comprised students (UG & PG) and faculty from six government engineering colleges located in three southern districts of Tamil Nadu: Madurai (Thiagarajar College of Engineering, Government College of Engineering), Tirunelveli (Government College of Engineering, Tirunelveli), and Kanyakumari (University College of Engineering, Nagercoil; Government College of Engineering, Kanyakumari). Stratified random sampling was used: 75 users per college (60 students + 15 faculty), totaling 450.

4.2 Data Collection Instrument

A validated structured questionnaire was distributed both online (Google Forms) and offline (print copies) between January and March 2025. The instrument had four sections: A) Demographics, B) Awareness (5 items, Cronbach’s $\alpha = 0.81$), C) Satisfaction (7 items, $\alpha = 0.85$), D) Challenges (multiple-select and Likert). A five-point Likert scale (1=Very Low to 5=Very High) was used.

4.3 Data Analysis

Descriptive statistics (frequencies, means, standard deviations) and inferential statistics (Pearson correlation, t-test) were computed using SPSS version 26.

5. RESULTS

5.1 Response Rate and Demographics

Out of 450 questionnaires, 389 were returned complete (86.4%). Respondents included 312 students (80.2%) and 77 faculty (19.8%). Male respondents were 64%, female 36%.

5.2 Objective 1: Level of Awareness

The overall mean awareness score was 3.8 (SD=0.74). Faculty had significantly higher awareness (mean=4.4, SD=0.52) than students (mean=3.6, SD=0.78), $t(387)=6.12$, $p<0.001$. Only 42% of students knew that their library’s repository contained past exam papers and project reports. Awareness of open access policies was particularly low (mean=2.9).

Table 1: Awareness of Digital Repository Features (Mean Scores)

Feature	Students (n=312)	Faculty (n=77)	Total

Existence of DR	4.1	4.7	4.2
How to access DR remotely	3.5	4.5	3.8
Searching within DR	3.8	4.6	4.0
Uploading/submission process	2.7	4.1	3.1
Copyright/usage policies	2.9	4.0	3.2
Overall Mean	3.6	4.4	3.8

5.3 Objective 2: User Satisfaction

Overall satisfaction was moderate (mean=3.4, SD=0.82). Highest satisfaction was for “24/7 accessibility” (mean=4.2) and “download speed” (mean=3.7). Lowest satisfaction was for “currency of content” (mean=2.8) and “advanced search features” (mean=3.0). Only 38% of users were satisfied with the mobile responsiveness of the repository interface.

5.4 Objective 3: Challenges Identified

Users were asked to select all applicable challenges. Results are shown in Table 2.

Table 2: Major Challenges in Using Digital Repositories (Multiple responses)

Challenge	Frequency (n=389)	Percentage
Slow internet bandwidth	226	58.1%
Lack of training/orientation	183	47.0%
Inconsistent or poor metadata (search fails)	152	39.1%
Outdated content (not updated >6 months)	135	34.7%
Complex login/authentication issues	98	25.2%
Lack of mobile app	77	19.8%
Insufficient computers in library	64	16.5%

Qualitative comments revealed frustration: “I know the repository exists, but the search returns irrelevant results” (3rd-year student, Madurai) and “We need a dedicated training session every semester” (Assistant Professor, Tirunelveli).

5.5 Objective 4: Relationship between Awareness and Satisfaction

Pearson product-moment correlation coefficient revealed a strong, positive, and statistically significant

correlation between overall awareness and overall satisfaction ($r = 0.62$, $n = 389$, $p < 0.01$). Higher awareness was associated with higher satisfaction, suggesting that libraries must first improve awareness to enhance UX.

6. DISCUSSION

The findings align with prior research indicating a faculty advantage in digital literacy (Rao & Babu, 2020). However, the moderate satisfaction scores (3.4/5) are lower than reported in some urban studies, possibly due to infrastructure deficits specific to southern Tamil Nadu's semi-urban locations.

The top challenge slow internet bandwidth (58%) is a structural issue. While government engineering colleges have NKN (National Knowledge Network) connectivity, local area network bottlenecks and outdated Wi-Fi access points hinder performance. The second challenge, lack of training, is an administrative issue; most libraries do not offer structured orientation on advanced search techniques or Boolean operators.

The significant correlation between awareness and satisfaction has a practical implication: marketing and user education are not ancillary but core to perceived repository value. Low satisfaction with "currency of content" indicates poor self-archiving policies; faculty are not mandated to upload recent publications.

Compared to repositories in IITs or NITs, these southern government colleges lack institutional mandates and dedicated repository managers. This explains the metadata inconsistency and outdated content.

7. RECOMMENDATIONS

1. Infrastructure Upgrade: Libraries should petition for dedicated repository bandwidth (minimum 100 Mbps dedicated) and upgrade Wi-Fi 6 access points.
2. Mandatory Training Modules: Integrate a 2-credit "Digital Information Literacy" module into first-year engineering curriculum, covering repository search, submission, and citation tracking.
3. Metadata Standardization: Adopt Dublin Core metadata schema with mandatory quality checks before item upload.
4. Content Incentive Policy: Institute a monthly "Top Contributor" award for faculty who upload recent papers and a student reward for using repository resources in projects.
5. Mobile-Optimized Interface: Implement responsive themes or a simple mobile app (e.g., using DSpace's REST API) to improve mobile UX.
6. Regular User Feedback: Conduct a biannual UX audit using the same instrument to track improvements.

8. CONCLUSION

Digitalized repositories in southern Tamil Nadu government engineering college libraries have made a positive but incomplete impact on user experience. While awareness is reasonably high among faculty, student awareness and overall satisfaction lag behind due to bandwidth constraints, insufficient training, and poor metadata quality. Critically, satisfaction is contingent upon awareness a finding that redirects focus from technology procurement to user education. By addressing the challenges identified, these libraries can transform their repositories from passive digital archives to active learning ecosystems.

9. LIMITATIONS AND FUTURE RESEARCH

This study was limited to six colleges in three districts; generalizability to other regions of Tamil Nadu is limited. The self-reported nature of responses may introduce social desirability bias. Future research should employ log analysis (actual usage data) alongside surveys and conduct comparative studies between government and private engineering colleges in the same region..

REFERENCES

- [1] Kumbar, M., & Hadagali, G. S. (2018). Institutional repositories in engineering colleges of Karnataka. *DESIDOC Journal of Library & Information Technology*, 38(3), 189-195.
- [2] Lynch, C. A. (2003). Institutional repositories: Essential infrastructure for scholarship in the digital age. *ARL Bimonthly Report*, 226, 1-7.
- [3] Rao, P. V., & Babu, K. S. (2020). User awareness and use of digital library resources in engineering colleges. *Library Philosophy and Practice*, 2020, 1-15.
- [4] Selvam, B., & Murugan, S. (2022). ICT infrastructure and challenges in Tamil Nadu engineering college libraries. *Journal of Indian Library Association*, 58(2), 45-59.
- [5] Singh, P., & Sanaman, G. (2021). Challenges in building institutional repositories: A survey of Indian libraries. *Global Knowledge, Memory and Communication*, 70(6/7), 589-607.

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- [6] Tella, A. (2019). User satisfaction with library electronic resources in Nigerian universities. *The Electronic Library*, 37(2), 298-317