

Assessing the Accessibility of Digital Platforms: A Case Study of the Noolaham Foundation in Sri Lanka

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Abstract

This study analyzes the accessibility, usefulness, and impact of the digital platforms of the Noolaham Foundation, a digital library in Sri Lanka that aims to document and preserve Tamil literary and cultural heritage. The purpose of the study is to determine the current status of the Foundation's platforms, the comprehensiveness of its digital collection, users' perceptions of accuracy and reliability, challenges faced in accessing the collection, and possible solutions for sustainable improvements. A mixed-methods approach was adopted, and quantitative and qualitative data were collected using questionnaires, interviews, and focus group discussions from 100 participants, including students, researchers, faculty members, librarians, and members of the wider community. Further triangulation was achieved through the analysis of repository metadata, content coverage, and use data. The analysis suggests that approximately 60% of users demonstrate a high level of digital literacy, and the majority perceive the digital collection as comprehensive and trustworthy. However, several challenges remain, including limited accessibility for users with disabilities, issues related to metadata quality, searchability, copyright restrictions, and inadequate materials. These findings indicate that while the Noolaham Foundation has made significant progress in digital preservation and access, improvements are still required in usability, accessibility compliance, and sustainability planning.

Keywords: Accessibility, Digital Libraries. Digital Preservation, Noolaham Foundation, Sri Lanka, Tamil Literature, Usability.

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Introduction

In Sri Lanka, the Noolaham Foundation is a pioneering digital archive that dates back to 2005 as a virtual library that has now grown to include print material, multimedia, oral history, and educational resources in its Aavanaham repository (Daniel, 2022). By 2014, the Foundation had digitized over 1200 rare and out-of-print documents, greatly enhancing accessibility (Noolaham Foundation, 2022). The Foundation's commitments to long-term preservation, metadata quality, volunteerism, and open access are well-documented in its annual reports and are ethically grounded (Noolaham Foundation, 2022).

Although these achievements demonstrate the potential of community-driven digital archives, digital libraries across South Asia continue to face persistent challenges, including limited financial resources for digitization, inadequate indexing and metadata practices, weak technological infrastructure, insufficient IT skills, and poor sustainability planning (Hindagolla, 2020). Similar issues are described in numerous comparative studies, where inconsistent metadata standards, limited search capabilities, and inadequate adherence to international guidelines reduce the effectiveness and accessibility of digital platforms (Mukherjee & Patra, 2023).

While these challenges are well documented at a regional level, there is limited empirical evidence on how such issues specifically affect the accessibility, usability, and sustainability of the Noolaham Foundation's digital platforms. In particular, user perspectives on access, reliability, and usability remain underexplored, creating a gap between the Foundation's preservation goals and actual user experience.

This paper, therefore, seeks to evaluate access to digital platforms in Noolaham; the usability and efficacy of the online platforms in Noolaham; the difficulties faced by the users; and strategies to improve access, usability, and sustainability of the digital platforms.

Main Objective:

To assess the ease of access, use, and viability of the online platforms that the Noolaham Foundation runs to record and maintain Tamil books in Sri Lanka.

Specific Objectives of the Study

This research analyses these factors using a user-based appraisal, which is informed by the following specific objectives:

1. To evaluate the situation with the digital platforms of Noolaham Foundation.
2. To determine the extent of digital collection.
3. To examine users' perceptions of the accuracy and reliability of digital resources.
4. To identify key issues and challenges faced by users when accessing the platforms.

Literature Review

Wijesundera (2020) studied the use of electronic resources by the undergraduate students of the National Library of Sri Lanka. Most students did not know the resources available, since access to digital collections, even those available, was via general search engines rather than the OPAC. The paper highlights the importance of awareness programs, training, updated infrastructure, and strong internet connectivity to enable its effective use.

Wadugedara and Marasinghe (2025) examined postgraduate users of the Postgraduate Institute of Management (PIM) Library at the University of Sri Jayewardenepura. The results showed a significant increase in the use of digital resources (86% of users use e-journals regularly), which was accompanied by the identification of barriers (lack of access to devices, lack of technical literacy, and lack of support) and recommendations to train and set up virtual helpdesks.

Navirathan and Jeyakananthan (2018) reported digitized rare Ceylon Collections at Eastern University. They have saved and increased access to more than 2,000 items using DSpace. The project was a success with little technical training because the comments in focus groups showed that open-source platforms might share the work of preservation, but only when they were used with the involvement of users.

De Silva et al. (2023) interviewed scholars in the Humanities and Social Sciences faculties of Sri Lanka. Email and LMS were rated highly; institutional support was poor (especially its infrastructure maintenance). The digital method was increasingly used during COVID-19, though gaps remain in long-term support.

Wedasinghe, Sirisoma, and Wickramarachchi (2023) suggested rules of design that can make the web more accessible to people with visual impairment in Sri Lanka. It is suggested to use keyboards, semantics in HTML, alt-text, logical headings, high contrast design, and audio support-wealthy tips that directly address the usability of differently abled users.

Siriwardana and Wickramasooriya (2025) discussed the role of the public libraries in Anuradhapura in response to the COVID-19 pandemic. Some lacked technical infrastructures

and personnel training, but improvisational strategies emerged, such as sharing scanned materials via WhatsApp and running social media awareness campaigns. This highlights the strength that is required during disruption.

Research Methodology

A mixed-methods research design was adopted in this study to embrace both quantitative and qualitative information regarding the availability of, usability of, and efficacy of the digital platforms of the Noolaham Foundation. Various data collection tools were used in the study, including structured questionnaires, semi-structured interviews, focus group discussions, and content analysis.

The study population comprised users of the Noolaham Foundation's digital platforms, including students, researchers, academics, librarians, and members of the wider community. A purposive sampling technique was employed to ensure the inclusion of active and informed users of the platforms. A total of 100 valid questionnaire responses were collected and analyzed. This sample size was considered adequate for an exploratory case study aimed at identifying user perceptions and key access-related issues rather than statistical generalization. The questionnaire instrument was developed based on relevant digital library and accessibility literature and was reviewed for clarity and content validity prior to distribution. The survey focused on digital literacy, accessibility, usability, and perceptions of accuracy and reliability. Interviews and focus group discussions were conducted using guiding questions to explore user experiences, operational challenges, and improvement strategies in greater depth. Ethical considerations were observed throughout the study. Participation was voluntary, informed consent was obtained from all respondents, and anonymity and confidentiality were ensured. No personal identifiers were collected, and data were used solely for academic purposes. Qualitative data from interviews and focus group discussions were thematically analyzed to identify recurring patterns and challenges, while quantitative survey data were analyzed using descriptive statistics. The integration of these methods enabled triangulation and enhanced the credibility of the findings.

Population and Sampling

Users of the Noolaham Foundation's digital platforms, including scholars, researchers, students, librarians, and members of the Tamil diaspora and Sri Lankan community, were included in the study population.

To reflect the users who are actively utilizing the platforms, the purposive sample technique was employed. One hundred valid survey responses from this population were used in this study. Additionally, fifteen semi-structured interviews were conducted with administrators, IT specialists, librarians, and digital archivists involved in platform management. It was decided to hold three focus group meetings, each with six participants, to better understand user experiences.

Data Collection Methods

Information was gathered using several complementary strategies:

1. Surveys: User familiarity, perceptions of comprehensiveness, accuracy, usability, and accessibility were measured by structured questionnaires.
2. Interviews: It was also found that the deeper responses to the information were in interviews with professionals who work with the digital archiving and handling systems.
3. Focus Groups: In the case of Focus Groups, group discussion was used in an attempt to obtain user opinions, problems, or even suggestions on how to improve the platform.
4. Content Analysis: The types of documents and coverage of the material accessed with respect to the Noolaham digital repository.

Analysis of Data

The quantitative survey data were analyzed using SPSS, focusing on percentage-based frequency distributions of users' familiarity, engagement, and platform effectiveness. Cross-tabulations were used selectively to observe patterns across user groups. The qualitative data obtained from interviews and focus group discussions were coded and thematically analyzed using NVivo to identify recurring themes, challenges, and suggested improvements. The integration of quantitative and qualitative findings enabled triangulation and strengthened the interpretation of user experiences and platform performance.

Results and Discussion

The findings are presented according to the following thematic areas, which align with the study objectives: respondent background, digital platform knowledge, perceived comprehensiveness of the collection, accuracy and reliability, usability challenges, and suggested improvements.

Demographic features of the Respondents.

The population structure of the respondents displayed a percentage of 43 of 31-45 years (relatively low participation of younger users (<18) and older users (>60). This means that the primary consumers of the Noolaham platforms are working-age people and probably are involved in academic or professional activities. The limited representation of younger and older age groups suggests potential access, awareness, or usability gaps, particularly among digitally less confident users. Similar trends have been observed in Sri Lankan university-based digital library studies, where usage is highest among academically active populations, while other groups face awareness or connectivity limitations (Hindagolla, 2017). Comparable global studies also report age-related disparities in digital library usage, particularly in community-driven archives (Leventakou, 2024).

Digital Platforms Knowledge.

Most users (60 percent) were highly competent with digital platforms, and 15 percent reported low or very low competence. Although this reflects a generally positive level of digital literacy among users, the presence of a digitally less confident subgroup highlights the need for simplified interfaces and structured user training programmes. This digital divide is consistent with earlier findings that users often lack the skills required to fully utilize digital library services without targeted support (Hindagolla, 2017). Similar observations have been reported in international digital library studies, where usability improvements and training significantly increase engagement (Mukherjee & Patra, 2023).

Table 1: Familiarity with digital platforms (n = 100)

Level	Frequency	%
Very high	20	20
Good	40	40
Average	25	25
Basic	10	10
Very low	5	5

The repository was identified as the most frequently accessed platform (80%), followed by social media platforms (50%), while mobile applications recorded the lowest usage (15%). This repository-centric usage pattern mirrors global and South Asian digital library trends, where

web-based repositories remain dominant despite growing mobile access opportunities (Mukherjee & Patra, 2023).

1. Perceived Comprehensiveness of the Collection

Table 2: Comprehensiveness

Rating	Freq.	%
Very comprehensive	25	25
Comprehensive	60	60
Neutral	8	8
Incomplete	7	7

A large majority of respondents (85%) rated the digital collection as either “Comprehensive” or “Very Comprehensive.” However, users also identified noticeable gaps in subject areas such as science, modern education, and contemporary publications. This finding aligns with other Sri Lankan digitization initiatives, such as the Ceylon Collection project, where preservation success coexisted with uneven subject coverage (Navirathan & Jeyakananthan, 2018).

Accuracy and Reliability

Table 3: Accuracy perception

Rating	Freq.	%
Very accurate	30	30
Accurate	50	50
Neutral	15	15
Inaccurate	5	5

With 80% of respondents perceiving the content as accurate or very accurate, the Noolaham Foundation enjoys a high level of user trust. Nevertheless, concerns were raised regarding outdated materials and limited validation or review mechanisms. These findings reinforce global evidence that metadata quality, authority control, and periodic content review are critical to maintaining credibility in digital repositories (Mukherjee & Patra, 2023).

Challenges

Some of the problems that were considered serious by the respondents included:

- Copyright protection on downloadable books.
- Inadequacy of digitalization materials, slow development of the collection.
- Issues with reading online information about new technologies.
- Long-term sustainability concerns related to technical infrastructure and funding

These issues are not unique to Noolaham. Global and regional studies show that small and community-based digital archives are particularly vulnerable to sustainability risks in the absence of institutional and technical support (Leventakou, 2024).

2. Usability & Platform Efforts

Table 4: Perceived usability

Aspect	Positive (%)	Neutral (%)	Negative (%)
Homepage clarity	68	22	10
Search relevance	55	30	15
Facets/filters	50	32	18
Item page readability	62	25	13
Mobile experience	40	35	25

User perceptions of usability were generally positive for homepage clarity (68%) and item page readability (62%). However, lower ratings for search relevance (55%), filtering options (50%), and mobile experience (40%) indicate areas requiring improvement. Rather than merely reflecting interface preferences, these findings point to deeper usability and accessibility challenges. International usability studies emphasize that advanced search tools, mobile optimization, and assistive technologies are essential for inclusive digital library environments (Kumar, 2018).

Table 5: Suggestions for Improvement

Improvement area	Mentions	% of respondents
Stronger search (synonyms, filters), richer metadata	50	50
Expand collection (diaspora, theses, children's lit.)	40	40
Better accessibility (screen reader, captions, contrast)	35	35
Regular QA updates (OCR fixes, deduplication)	30	30
Multilingual interface/metadata (Ta/En/Si)	20	20
Lighter files/alternative formats (EPUB/HTML)	18	18
Community reviews/critical notes	12	12

The respondents suggested improving metadata, accessibility features, and interfaces in multiple languages as some of their recommendations. The results can be related to the existing sustainability and access literature dealing with user-centered design, metadata standardization, and compliance with inclusive technologies (Leventakou, 2024; Wedasinghe et al., 2023).

A result of the above, Noolaham is showing significant improvement in preservation and access, with the long-term effect on metadata quality, user training, mobile usability, and sustainability, which are not only local issues but also global digital library issues.

Discussion

The findings of the present research reflect the accomplishments and difficulties of Noolaham Foundation's digital preservation efforts. The Foundation has established a serviceable collection of Tamil literature and periodicals, oral histories, and other cultural resources (including multilingual materials). This comment aligns with de Silva et al. (2023), who argue that inclusivity and multilingual support rank among the considerations when developing an equal digital experience in an academic setting based in Sri Lanka.

Nevertheless, the use of these platforms differs among user groups. Researchers with academic needs that necessitate their use are the most active users; students and community members are slowed by a lack of digital literacy, poor connectivity, and difficulties with interface navigation. Similar findings were also documented by Wadugedara and Marasinghe (2025). The authors noted that, despite the high adoption rate of e-resources by postgraduate users, other groups and categories were hampered by a lack of digital skills and usability challenges.

One common theme is technological and operational challenges. Ignoring loopholes in the differences between catalogue and metadata also reduces the discoverability, which should likewise be expected, as the metadata organization process of digitization of the Ceylon Collection of Sri Lanka was additionally obstructed by the absence of technical skills (Navirathan and Jeyakanathan, 2018). Further, this volunteer model employed by the Foundation can help to build community ownership yet generates issues of sustainability. These issues are part of broader South Asian tendencies that Mukherjee and Patra (2023) found to be prevalent in digital library projects across the region: resource dependence and insufficient institutionalization of supportive measures.

There is also an accessibility concern. Though the Noolaham repository is open worldwide via the internet, access locally is limited by limits on rural internet access and mobile optimization.

The results can be reasonably explained by Wedasinghe et al. (2023), who noted that successful online libraries should offer an inclusive design, i.e., the use of a screen reader, alternative text, and the ability to be viewed on a phone, to meet the needs of the most diverse population. Similarly, Kumar (2018) has stressed the roles of simple search and metadata tools in increasing both finding and interaction in OPAC and online library environments.

Overall, despite the commendable progress in the field of Tamil cultural heritage documentation and retention made by the Noolaham Foundation, the long-term sustainability of the project requires improvements in metadata standards, infrastructure, and access. Noolaham is not the only one to face these challenges; there is a system-wide problem of digital preservation in South Asia, and these lessons learned in this case can be generalized across Sri Lanka.

Conclusion

This paper has discussed the access, functionality, and utility of online resources hosted by the Noolaham Foundation, a Sri Lankan project dedicated to the preservation and dissemination of Tamil literary and cultural heritage. Based on survey data from 100 participants, including students, researchers, academics, and librarians, as well as community members, the study examined demographic distribution, familiarity with digital platforms, perceptions of comprehensiveness, accuracy, and reliability of collections, problems encountered by users, and recommendations.

The results showed that most users are between the ages of 31 and 45, which suggests that working-aged people are the primary users of Noolaham online resources. Although allowing for the fact that two-thirds of the respondents were determined to be very digitally literate, a significant proportion of the interviewees admitted that they face challenges that are resolved through plain interfaces and specific training. The collection was widely viewed as extensive, with 70 percent of those who used it confirming it as covering Tamil literary and cultural material; though some subject areas were noted to have been omitted, and some aspects of the collection were thought to lack sufficient cataloging. In the same light, when 65 percent of respondents found the material to be true and reliable, other respondents were indifferent or doubtful, then the quality control systems and fact-checking processes must have been routine.

Another notable barrier identified throughout the research process was copyright restrictions, which inhibit access to downloadable books, the lack of digitalization of resources, and

technical restrictions placed on resources. Sustainability and inclusivity have been mentioned as the most important issues in other South Asian digital library programs (Mukherjee and Patra, 2023; Hindagolla, 2020). Digitization of the Ceylon Collections in Sri Lanka demonstrated that the quality of metadata and the lack of technical infrastructure are the two obstacles to access, and also the discovery of the resources by users (Navirathan and Jeyakananthan, 2018). Notably, users in the current study have also provided constructive feedback, noting that further development of collection, augmentation of metadata and search capabilities, critical review processes, and greater engagement of Tamil scholars and researchers in content quality and cultural assurance are needed.

Overall, this paper shows that even though the Noolaham Foundation has done much to ensure that Tamil culture is not lost, there are still issues regarding coverage, accuracy, accessibility, and sustainability. Such results not only confirmed the earlier research on the limitations of digital libraries but also offer contextualized information on the South Asian digital heritage space.

Recommendations

To make the most out of the efficiency, inclusivity, and sustainability of the Noolaham Foundation digital resources, some recommendations are given in consideration of the findings.

Increasing Accessibility and Usability: The Foundation must focus on making its interfaces mobile-friendly and providing multilingual access facilities to accommodate younger and older people, as well as non-native speakers of Tamil. Moreover, providing digital literacy training opportunities, tutorials, and webinars would enable users with less advanced technical expertise to gain greater confidence in using the platform, thus increasing its use.

Developing more collections: To fill the gaps in coverage, Noolaham needs to focus on digitizing less-covered areas of scholarship, like Tamil scientific work, women's and diaspora writing. Academic publications, oral histories, and present-day cultural products would also add depth to the repository. Cooperation with universities, archives, and other cultural institutions would be important, with access to rare or unpublished materials, and would also add academic and cultural value to the collection.

In the name of Accuracy and Reliability, to enhance the validity of the digital archive, A system of Tamil scholarship, librarians, and subject experts, with a Peer Review Plan, is suggested. A system like that would certify the material and make the possibility of a high standard possible.

Also, the timeliness, suitability, and usefulness of the resources to the users would be guaranteed, along with the version control system and the quality of the metadata.

Overcoming Technical and Copyright Problems: The Foundation must overcome technical and legal issues. Open access can be optimized and intellectual property maintained through the negotiation of those who hold copyright and through the Creative Commons models of licensing. To ensure that the platform is flawless in terms of functionality and accessibility, I can invest in better servers, OCR software, and other options like compatibility with screen readers.

Sharing the burden and incorporating community involvement: The Noolaham Foundation is a place that thrives on involvement. The crowd-sourced translation, transcription, and metadata generation would be more easily shared by the use of a volunteer system to distribute the workload. ownership among the users. It also needs to strengthen its relationship with the institutions of diasporas and investors in order to help it become able to sustain itself financially.

Lastly, the interaction of communities in workshops, forums, and participatory digitization projects would have a positive effect on rapport building among the users, which would help the users survive in the long term. Planning and strategic environment: At the institutional level, the Foundation would need to come up with a long-term digital preservation plan that is relevant to the international standards, like the Open Archival Information System (OAIS). Open metadata management policies, enforcement of copyright, and compatibility with other international digital heritage programs would also help Noolaham to be viewed as a viable and sustainable repository.

Future Research Directions

The research article points out that future studies should be conducted in three areas:

1. Comparative analysis with other South Asia projects on digital heritage to compare the performance of Noolaham.
2. Longitudinal study on how user behavior, digital literacy, and sustainability will change with time.
3. Research that revolves around accessibility, especially studying how various users with special needs engage in Noolaham platforms.

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