

Overview of Integrated Library Systems in Somalia Academic Libraries: Challenges and Prospect

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Abstract

Background: Despite global advancements in library automation, Somalia libraries face significant infrastructural, financial, and institutional limitations. The study investigates the challenges and prospects of adopting Integrated Library Systems (ILS) in Somali academic libraries.

Methods: Using a mixed-method survey approach, the study gathered insights from 10 professionals working in various academic libraries.

Results and Discussion: The study identified a lack of technical support, limited administrative backing, inadequate training, and poor system integration as major challenges. However, opportunities exist in the form of growing higher education demand, open-source solutions, and expanding internet connectivity. Academic libraries in Somalia faced challenges and growth prospects while implementing integrated library systems (ILSs). The study also identified systemic problems that impede the efficient use of ILSs, including poor institutional investment, insufficient technical support, and lack of training. Nonetheless, it is evident that library professionals are eager to adopt automation and digital transformation. Somalia's academic libraries can effectively transform into more effective, easily accessible, and modernized establishments with the right funding, legislative backing, and international collaboration.

Keywords: Integrated library systems; Somalia academic libraries; Technology in library; Academic library management; Library services

Abstrak

Pendahuluan: Meskipun terjadi kemajuan global dalam otomasi perpustakaan, perpustakaan di Somalia masih menghadapi berbagai keterbatasan infrastruktur, finansial, dan institusional. Penelitian ini menyelidiki tantangan dan prospek penerapan Integrated Library Systems (ILS) di perpustakaan akademik Somalia.

Metode Penelitian: Dengan menggunakan pendekatan survei mixed-method, penelitian ini mengumpulkan wawasan dari 10 profesional yang bekerja di berbagai perpustakaan akademik.

Hasil dan Pembahasan: Studi ini mengidentifikasi kurangnya dukungan teknis, terbatasnya dukungan administratif, pelatihan yang tidak memadai, serta integrasi sistem yang lemah sebagai tantangan utama. Namun, terdapat peluang yang muncul dari meningkatnya permintaan pendidikan tinggi, ketersediaan solusi sumber terbuka, dan perluasan konektivitas internet. Perpustakaan akademik di Somalia menghadapi tantangan sekaligus peluang perkembangan dalam mengimplementasikan sistem perpustakaan terintegrasi (ILS). Penelitian ini juga menemukan berbagai permasalahan sistemik yang menghambat pemanfaatan ILS secara efisien, termasuk minimnya investasi institusional, kurangnya dukungan teknis, dan ketiadaan pelatihan yang memadai. Meskipun demikian, terlihat jelas bahwa para profesional perpustakaan memiliki antusiasme untuk mengadopsi otomasi dan transformasi digital. Dengan pendanaan yang tepat, dukungan legislasi, dan kolaborasi internasional, perpustakaan akademik di Somalia berpotensi bertransformasi menjadi lembaga yang lebih efektif, mudah diakses, dan termodernisasi.

Kata Kunci: Sistem terintegrasi perpustakaan; Perpustakaan akademik Somalia; Teknologi perpustakaan; Manajemen perpustakaan akademik; Pelayanan perpustakaan

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A. Introduction

Technology has fundamentally transformed the way libraries operate in the twenty-first century. The integration of digital tools and automated systems has enabled libraries worldwide to move beyond traditional print-based service models, offering more sufficient, accessible, and responsive services to their user communities (Aremu & Saka, 2014; Bello & Adepegba, 2023; Ikwuanusi, Onunka, Owode, & Uzoka, 2024; Mir, 2024). This technological shift has been particularly significant for developing information ecosystems, where integrated library systems (ILS) serve as the backbone of cataloging, circulation, resource sharing, and user access management. In any part of the world, libraries have implemented technological innovations to meet the users' needs (Candela, 2023; Prosmans & Renaville, 2023). They have adopted digital tools such as online catalogs, e-books, and e-learning platforms to expand their services beyond physical boundaries, catering to the evolving users' needs (Funmilayo Racheal, 2020; Sivankalai, 2021). While the global library landscape reflects rapid technological progress, this advancement is not evenly distributed across countries (Astuti & Ayinde, 2025; Cirera, Xavier; Comin, Diego; Cruz, 2022). Some countries are particularly fortunate, benefitting from stable economic, political, and social environments that create fertile ground for innovation and sustained investment in library technologies.

In developed countries, well-established infrastructure, robust funding for education, and political commitment to information access have enabled libraries to adopt cutting-edge technologies such as AI-powered cataloging systems (Breeding, 2023; D-Tech International, 2024; Das & Islam, 2021), RFID-enabled to automate book location (Yaman, Tuncer, & Ertam, 2021), maker spaces, and fully integrated digital services. In contrast, developing countries (Akinola, 2019; Echezona & Ugwuany, 2015; Okocha, 2022; Shahzad & Iqbal, 2020), such as Somalia – the location where this study was conducted – continue to encounter major obstacles that prevent libraries from fully embracing and using technology (Gammayani, Nabawi, & Alfatih, 2016; Nowrin & Mostofa, 2024).

However, in the current sophisticated information, many developing nations are showing notable progress in the usage of technology inside their libraries systems, although remaining many challenges (Barsha & Munshi, 2023; Chigwada, 2018; Ruhode, 2024). Libraries in these countries progressively adopt automation, digitalization, and online service delivery as a result of growing awareness of the benefits of digital access information. The growing use of integrated library systems (ILS) in developing countries is one of the most important indicators of technical advancement (Chigwada, 2018). Libraries might now automate many their daily activities, including cataloging, circulation, acquisitions, serial control, and online public access catalogs (OPAC), either its open source or proprietary ones (Dione & Savard, 2008).

There are many technology tools available for ILS. Some are open source, which are gaining popularity in developing countries (Breeding, 2008, 2023), while others are commercially available. Each offers equal potential for implementation in various library types, including its challenges. ILS is software used to manage library operations. This includes cataloging, circulation, acquisitions, and serials management (Upasani, 2016; Uzomba, Oyebola, & Izuchukwu, 2015). Popular open-source options include Koha, Evergreen, and OPALS, which offer robust features suitable for different types of libraries.

In the context of Somalia, despite the challenges they have faced, are on a path of recovery and growth. Efforts are being made to restore and enhance library services, and the potential for growth is significant. After the collapse of the government and subsequent communal conflict, there has been renewed attention to the role of libraries and information services in the country's reconstruction and development. Libraries are recognized as vital for creating stable institutions and supporting dynamic social and economic progress (Abdulla, 1998).

Access to reliable technology infrastructure plays a pivotal role in the successful implementation of ILS. In Somalia, however, academic libraries continue to face systemic barriers that inhibit the adoption of Integrated Library Systems (ILS), including unreliable infrastructure, limited training, and inconsistent institutional support. Inadequate internet connectivity represents a foundational barrier, reported to be insufficient for research purposes by 78% of faculty members (Hussein, 2025). In the current era, if libraries lack robust internet connectivity, it will directly impact various research activities, particularly those involving digital information resources within the library. For example, if a researcher wishes to access certain digital information sources at a library but internet connectivity is poor, it can create a negative impression. This local challenge is supported by regional studies, which identify networking problems as a major impediment to ILS migration, with one study documenting a 60.9% prevalence of this issue among reported difficulties (Mohamed, Abubakar, Karie, & Khalif, 2022). The frequency of these infrastructure failures implies that any implemented ILS is inherently vulnerable to systemic fragility, demanding a strategic focus on network resilience and power supply stabilization (Diyaolu & Oso, 2019).

Compounding the technological barriers is a severe resource crisis. A significant 64.29% of institutions report limited or outdated e-library resources, and an alarming 95% of faculty members report lack of access to international research databases (SomaliREN, 2024). This extreme deficit fundamentally undermines research outputs and academic quality (Hussein, 2025). Consequently, for Somalia, the implementation of an ILS must prioritize Electronic Resources Management Systems (ERMS) functionality and integration with shared external database above all other modules to address the core mission of enabling access to global scholarly knowledge.

To address these concerns, this research will investigate the present status of ILS implementation in Somalia with two main objectives. First, it will identify the challenges ILS implementation across Somalia academic libraries. Secondly, it will discuss in depth the challenges faced by libraries in utilizing the system, while also uncovering the prospects and opportunities for future ILS development within the country’s unique infrastructural and educational landscape.

This research addresses a significant gap in the global literature on digital education in fragile and under-resourced contexts. By offering empirical insights from Somalia, the study contributes to the broader international discourse on technology adaptation in developing regions. The findings are expected to inform not only national educational strategies but also global efforts aimed at supporting inclusive and sustainable digital learning environments.

B. Research Methodology

This study employs a survey research design to explore the application of library automation systems or integrated library systems (ILS) in Somalia. A structured questionnaire was used to collect data from several respondents to assess their experiences, challenges, and perceptions regarding library automation. The survey conducted in January to March 2025. The study targeted library professionals, IT specialists, and librarians involved in library management in Somalia. A total of 10 respondents participated in the survey. Participants were selected using a convenience sampling technique due to the limited number of professionals working with library automation in the region. The questionnaire was designed to collect quantitative and qualitative data. The survey included both closed-ended and open-ended questions. The survey was administered through a Google Form. Participants were given a brief overview of the study’s purpose before completing the questionnaire. Responses were collected from January to March 2025. The analysis applied descriptive statistics to interpret quantitative responses, including frequencies and percentages. Thematic analysis examined qualitative responses to uncover recurring patterns and themes. The results appeared in tables and narrative summaries, highlighting key insights into the implementation of library automation systems in Somalia. The limited data available to describe the research object within academic libraries in Somalia means that the survey findings cannot be generalized to all academic libraries in Somalia. However, they can still serve as important findings for further development.

Table 1. Respondents filled the survey

Category	Subgroup	n	% (of 10)
Library type	University Library	9	90
	Research Library	1	10
Role	Library Manager	5	50
	IT Specialist	3	30

ILS use status	Librarian	2	20
	Uses ILS	5	50
	Does not use ILS	5	50

C. Research Findings

ILS Adoption Status

Of the ten libraries surveyed, exactly half of (5 of 10) reported currently using an Integrated Library System, while remaining half reported not using one. This even split indicates that ILS adoption in Somalia academic libraries remaining far from universal, with a substantial share of institutions still relying on manual or non-integrated methods of library management (Figure 2).

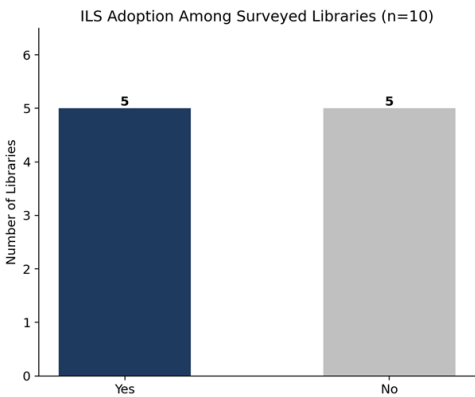


Figure 1. ILS adoption among surveyed Somali academic libraries (n = 10)

Challenges with Current ILS Use

Among the five libraries currently using an ILS, lack of technical support was the most frequently cited challenge, mentioned in 4 of 5 responses. This was followed by poor integration with other library services (3 mentions), difficulty training staff to use the system (2 mentions), and high costs of maintenance or upgrades (2 mentions). Limited administrative support and outdated or limited features were each mentioned once (Figure 2) Other respondents elaborated in open-ended responses that technical issues stemmed from a shortage of experienced technicians and insufficient managerial backing for ILS operations.

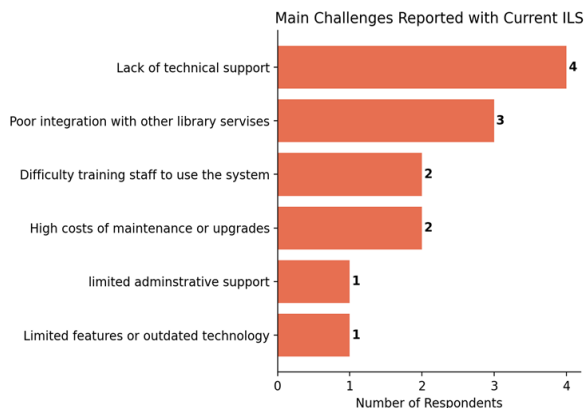


Figure 2. Main challenges reported with current ILS use

These challenges span technical support, system interoperability, human resources, and financial constraints. The most frequently reported impediment was the lack of adequate technical support, stated by four respondents. This prominent finding suggests that system maintenance and prompt troubleshooting represent frequent operational pain points for library staff, likely leading to significant inefficiencies in daily workflows.

A closely related challenge was the poor integration with other essential library services, identified by three respondents. This issue underscores difficulties in achieving seamless interoperability between the core ILS and ancillary digital tools vital for library management. Such systemic fragmentation inevitably hampers workflow efficiency and negatively impacts the end-user experience.

Effective staff utilization of the system is compromised by difficulties in training personnel, as noted by two respondents. This points to potential deficiencies stemming from inadequate training resources, the inherent complexity of the system interface, or both. These factors collectively pose a significant barrier to achieving effective and consistent system utilization across the library staff. Meanwhile, financial concerns emerged as a significant structural hurdle, with two respondents identifying the high costs associated with maintenance or necessary system upgrades. This suggests that financial constraints actively limit the institution’s capacity to modernize or enhance the existing ILS, potentially locking the library into reliance on suboptimal technology. Furthermore, ancillary challenges included limited administrative support and the use of outdated technology with restricted features. These issues highlight a critical need for stronger institutional advocacy and the timely adoption of more feature-rich, modernized systems.

Systems Reliability

Reported downtime frequency varied considerably across institutions. Two libraries experienced frequent failure (6 or more times per year), two experienced rare failures (1-2 times per year), one reported occasional failure (3-5 times per year), and one reported never experiencing downtime. This spread suggests that system reliability is inconsistent across institutions rather than being a uniform, system-wide problem (Figure 3).

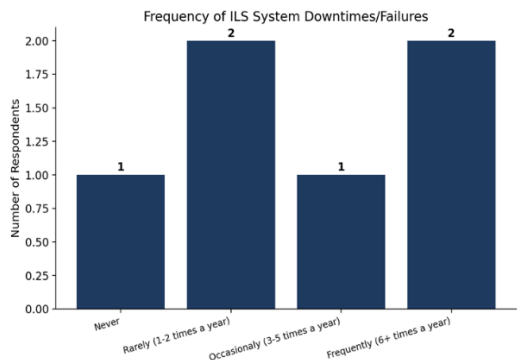


Figure 3. Frequency of ILS system downtimes or failures among ILS-using libraries

Valued Features of Existing Systems

When asked which features of their ILS they valued most, respondents most frequently selected integration with digital resources (7 mentions), followed by circulation management (6), cataloging (5), and user account management and reporting/statistics (4 mentions each). The pattern suggests that, despite the challenge noted above, libraries place the highest value on features that connect their catalog to broader digital resources ecosystems (Figure 4).

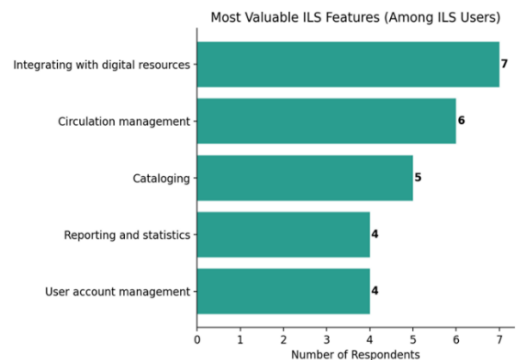


Figure 4. Most valuable ILS features reported by ILS-using libraries (multiple responses permitted)

Staff Training and Technical Support

Of the eight respondents who answered the training question, exactly half (4 of 8) reported that their staff had received formal training on ILS use, while the rest reported no formal training. Ratings of technical support quality (1-5 scale) were polarized rather than centered: three respondents rated support a 5 (very good), two rated a 1 (very poor), and two others rated 3 (Figure 5).

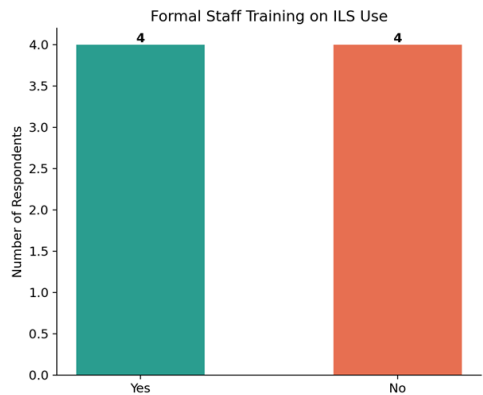


Figure 5. Formal staff training on ILS use among ILS-using libraries (multiple responses permitted)

Perceived System Adequacy and Future Plans

Respondents were asked to rate the ease-of-use ILS currently implemented in their institutions on 1-5 scale. As illustrated in Figure 6, the majority of participants (n = 3) rated the systems at a moderate level of usability (rating 3). Although the technologies are operational, based on the respondents’ feedbacks, they could be moderately challenging to use, especially for employees with less technological expertise (Figure 6).

Regarding future plans, most respondents showed initiative. Among those who answered, four selected “Maybe” when asked whether their library plans to upgrade or change its ILS within the next five years, compared to two who said “Yes” and two who said “No.” This suggests latent, unconfirmed demand for system upgrades rather than firm commitment or outright resistance (Figure 7).

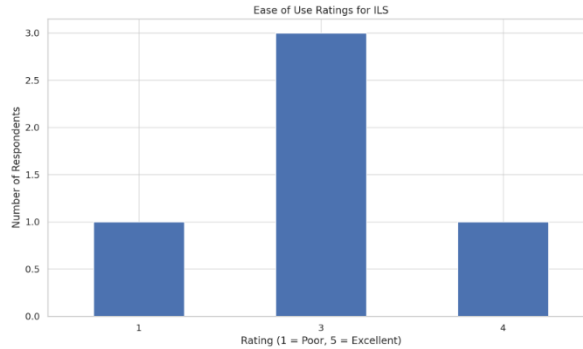


Figure 6. Ease of Use Ratings for Integrated Library Systems (ILS)

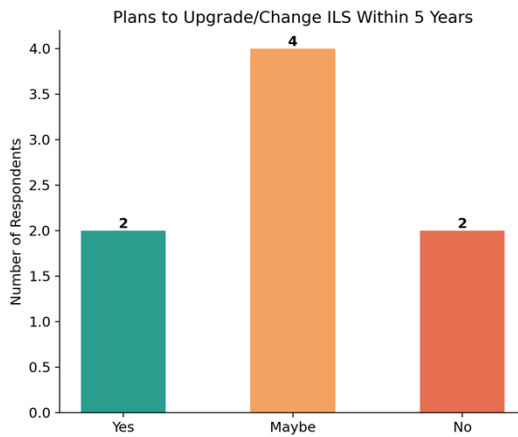


Figure 7. Library plans to upgrade or change the ILS within the next five years

The findings reveal a polarized yet limited perception of the ILS' usability. While only one respondent found the system difficult to use, another considered it relatively user-friendly. The absence of top ratings (5) suggests that none of the users found the system to be excellent, pointing to a general consensus that the interface and overall usability still fall short of optimal standards. These findings collectively suggest a usability deficit, a gap between current system functionality and anticipated user experience. To mitigate the identified barriers to adoption and enhance the perceived ease of use, a multifaceted intervention is recommended. This includes implementing improved user training protocols, establishing robust, localized support mechanisms, or undertaking system customization tailored to specific user workflows.

D. Discussion

Prospects for Integrated Library System Implementation in Somali Academic Libraries

The findings portray Somali academic libraries as operating at an early and uneven stage of ILS adoption, where investments in technological infrastructure have not yet been matched by the institutional capacity required to sustain effective implementation. The nearly equal proportion of libraries that have adopted ILS and those that have not suggests that the sector remains in a transitional phase rather than having reached widespread technological maturity. This pattern aligns with previous studies of library automation in developing countries, which consistently identify inadequate infrastructure, financial constraints, and limited human resource capacity as major barriers to the successful implementation of library technologies.

Another important opportunity arises from the growing availability of open-source ILS platforms. Unlike proprietary systems that require substantial licensing and maintenance costs, open-source solutions provide affordable, customizable, and scalable alternatives that are particularly suitable for resource-constrained institutions. The experience of SIMAD University Library, which has successfully implemented an open-source ILS platform ([Perpustakaan Tengku Anit UiTM Cawangan Kelantan, 2022](#)), illustrates the practical feasibility of such systems within comparable institutional contexts. Furthermore, the increasing availability of open-access (OA) resources and open educational resources (OER) provides academic libraries with unprecedented opportunities to expand access to scholarly information while minimizing collection development costs. By integrating these resources into ILS platforms, libraries can improve information accessibility, strengthen research support, and enhance the overall quality of library services.

The findings also suggest that improvements in Somalia's digital infrastructure create favorable conditions for future technological development. The gradual expansion of broadband and mobile internet connectivity enables libraries to deploy web-based services such as online public access catalogues (OPACs), remote access to digital collections, and cloud-based library management systems. Enhanced connectivity further facilitates interoperability with national and international repositories, improves resource sharing, and enables libraries to participate more actively in global knowledge networks. Consequently, technological improvements have the potential to extend library services beyond physical facilities and increase their accessibility to broader academic communities.

Equally important is the positive attitude demonstrated by library professionals toward technological innovation. Although several respondents acknowledged limited familiarity with ILS functionalities, the findings indicate a clear willingness to adopt new technologies and modernize library operations. This positive disposition represents an important institutional asset because successful

digital transformation depends not only on technological infrastructure but also on organizational readiness and human capacity. Targeted professional development initiatives, including structured training programmes, technical workshops, and continuous capacity-building activities, could therefore transform this latent motivation into practical competencies, enabling librarians to lead and sustain automation initiatives more effectively.

Collaboration also emerged as a significant opportunity for advancing ILS implementation. Partnerships with African and international academic libraries can facilitate knowledge exchange, technical assistance, staff training, and access to shared resources. Participation in regional library networks and international consortia would further expose Somali libraries to global best practices, promote interoperability, and strengthen institutional capacity through collaborative learning and resource-sharing initiatives. Such partnerships may also reduce implementation costs by allowing institutions to benefit from shared technical expertise and collective problem-solving.

Finally, the findings highlight the need for a coordinated national approach to library automation. Although Somalia currently lacks a centralized authority responsible for standardizing academic library systems, the establishment of national guidelines or collaborative institutional frameworks could promote interoperability, improve long-term sustainability, and encourage more strategic investment in library technologies. Policy coordination would help ensure that future ILS implementation follows consistent standards while supporting equitable technological development across higher education institutions.

Overall, the findings indicate that although Somali academic libraries continue to encounter considerable financial, technological, and organizational constraints, they also possess substantial opportunities for future development. The convergence of expanding higher education, improving digital infrastructure, increasing availability of open-source technologies, growing access to open scholarly resources, and strong institutional interest in modernization provides a favorable foundation for the wider adoption of integrated library systems. With sustained investment in professional capacity, technological infrastructure, collaborative partnerships, and supportive policy frameworks, Somali academic libraries are well positioned to evolve into digitally enabled knowledge centres capable of supporting research, education, and national development.

E. Conclusion

This study shows that Somali academic libraries are still in the early stages of adopting ILS. Out of 10 survey respondents, only 5 had used an ILS before, so this is a small sample and the results should be seen as an early snapshot rather than a full picture of the sector. Even so, the findings point to real and practical opportunities. Many of the challenges such as limited budgets, weak infrastructure,

and a shortage of trained staff are common problems in developing countries, not unique to Somalia. On the positive side, open-source ILS software offers an affordable option for libraries with limited funding, as shown by SIMAD University Library's successful use of such a system. Better internet access across the country is also making it easier for libraries to offer online services and connect with global library networks. Most encouragingly, library staff showed a strong willingness to learn and adopt new technology, even when their current knowledge is limited. This positive attitude, combined with support from regional partnerships and clear national policies, could help libraries move forward more quickly. While more research with larger groups of participants is needed, this study offers a useful starting point for understanding how Somali academic libraries can grow into modern, well-connected centers of learning and research.

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