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Sustainable library services with open-source library automation and digitisation software: A literature review

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Abstract

The aim of this paper is to show the published research on library service sustainability using open-source software (OSS). This paper emphasises the highly cited literature, document type, author, year of publication, publishers, and the keywords used to discover the document from the different databases. In addition, this literature review examines the factors that contribute to the sustainability of open-source library automation and digitization software. The review analyzes various aspects of sustainability, including community support, user adoption, technical expertise, funding, software customization, integration with other systems, documentation and training, and governance and decision-making. The findings suggest that sustainability is influenced by multiple factors, and libraries must invest in resources such as funding, staff training, and community support to ensure the continued use and relevance of OSS. The review concludes by highlighting future research directions and recommendations for libraries to improve the sustainability of their OSS services.

Keywords

Open-source sustainability, sustainability, sustainable digital library, sustainable library, sustainable library automation software, sustainable library services, sustainable library software

Introduction

Libraries play a crucial role in providing access to knowledge and information, facilitating education and research, and promoting cultural and social development. However, in today's rapidly changing environment, libraries face numerous challenges, including budget constraints, technological advancements, and changing user needs. In response, libraries have increasingly turned to open-source library automation and digitization software to enhance their services and sustainability. This literature review examines the use of open-source library automation and digitisation software in promoting sustainable library services. The review focuses on the benefits and challenges of using open-source software (OSS), the features and functionalities of popular open-source library automation and digitization software, and case studies of successful implementation. Numerous studies have demonstrated the benefits of OSS for libraries, including cost-effectiveness, flexibility, and community-driven development. For example, (Angell, 2013) argue that OSS enables libraries to save costs on licensing fees, tailor their software to meet their specific needs and participate in collaborative development projects. Similarly, (Michael, 2020) note that OSS offers libraries greater control over their data and the ability to customize their software to meet changing user needs. However, OSS also presents challenges, such as the need for technical expertise and the potential for security vulnerabilities. For instance, Foss and Strobel (2021) suggest that libraries may struggle to find staff with the necessary technical skills to install and maintain OSS. Moreover, OSS may be more vulnerable to security breaches than proprietary software, although this can be

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mitigated through proper security measures (Angell, 2013). Muhammad Rafique and Kanwal Ameen said, "the philosophy behind the open-source model is the mutual sharing of knowledge, expertise, and skills (Rafiq and Ameen, 2009).

Several open-source library automation and digitization software packages are available, including Koha, Evergreen, and Greenstone. These software packages offer a range of features and functionalities, such as cataloging, circulation, and digital asset management. For example, Koha is a web-based integrated library system (ILS) that offers cataloguing, circulation, and patron management functionalities, while Greenstone is a digital library software that enables the creation and management of digital collections (Michael, 2020).

Case studies have demonstrated the successful implementation of open-source library automation and digitization software in various settings. For instance, the adoption of open-source software in libraries has increased due to its benefits and successful outcomes (Oyelude, 2016). Libraries have utilized open-source solutions like Koha, NewGenLib, Evergreen, PMB, and OpenBiblio to transition from Automated Library Systems (ALS) to Integrated Library Systems (ILS) (Moruf et al., 2020). The effectiveness of open-source software in library settings is further supported by its success in the robotics and automation community (Kehoe et al., 2015; Bangerth and Heister, 2013) reports on the implementation of Koha in a Polish library, which led to improved workflows, cost savings, and greater user satisfaction. Similarly, Boustany and Abu Ghaida (2019) describe the implementation of Greenstone in a Lebanese university library, which enabled the creation and management of a digital library collection.

Overall, this literature review highlights the potential of open-source library automation and digitisation software in promoting sustainable library services. While OSS presents challenges, such as the need for technical expertise, it also offers numerous benefits, such as cost-effectiveness and flexibility. Moreover, OSS packages such as Koha, Evergreen, and Greenstone offer a range of features and functionalities to meet the diverse needs of libraries. Case studies have demonstrated the successful implementation of OSS in various settings, highlighting the potential for libraries to enhance their services and sustainability through the use of OSS.

Methodology

The primary objective of this literature review is to systematically examine the existing body of knowledge related to sustainable library services facilitated by open-source library automation and digitization software.

Search strategy

Conduct systematic searches in academic databases, including but not limited to, PubMed, Scopus, Web of Science, and Library and Information Science Abstracts (LISA). Utilize relevant keywords and phrases such as "open-source library software," "library automation," "digitization software," "library sustainability," and variations thereof. Include articles published within the past 10 years to capture recent developments and trends.

Inclusion and exclusion criteria

Include peer-reviewed journal articles, conference papers, books, and reports that directly address the topic of OSS in library settings and its impact on sustainability. Exclude sources that do not pertain to the specific focus of this review. English-language sources will be primarily considered due to language limitations.

Data extraction and synthesis

Extract relevant data from selected sources, including key findings, methodologies, benefits, challenges, and successful case studies. Organize extracted data into thematic categories, such as benefits, challenges, and case studies. However, synthesize the findings to identify recurring themes and patterns in the literature.

Quality assessment

Evaluate the quality and rigor of the selected sources, considering factors like methodology, sample size, and relevance. Give priority to studies with robust methodologies and empirical evidence.

Data presentation

Present the findings in a structured and coherent manner, organized around the identified themes. Use tables, charts, and narrative summaries to illustrate key points.

Discussion and implications

Analyze the findings and discuss their implications for libraries seeking to adopt OSS for sustainability. Highlight the practical lessons and recommendations derived from the literature.

Sustainability

Sustainability has emerged as a pivotal concept across diverse fields, reflecting the growing awareness of environmental, social, and economic interdependencies (Gladwin et al., 1995). Scholars have identified sustainability as a

multifaceted notion that encompasses a balance between present needs and future generations (WCED, 1987). This view aligns with the Brundtland Commission's classic definition, emphasizing development that meets present needs without compromising the ability of future generations to meet their needs (WCED, 1987). In business and management literature, the concept of sustainability has gained prominence due to the recognition of corporate responsibility towards environmental and social concerns (Elkington, 1994). The triple bottom line approach, integrating economic, environmental, and social dimensions, has become a fundamental framework for evaluating organizational sustainability (Elkington, 1994; Savitz and Weber, 2006). Furthermore, the value constellation model emphasizes the role of stakeholders in sustainable practices, stressing collaborative efforts among government, service providers, society, and clients (Normann and Ramirez, 1993). Despite these advancements, there is a call for deeper exploration of sustainability within specific contexts. For instance, in the realm of service sustainability, researchers emphasize the significance of evaluating the environmental impact of services through various touchpoints within the value constellation (Jankowska and Marcum, 2013). However, there's also recognition that streamlining customer interactions, akin to "one-stop shopping," can contribute to sustainability by reducing touchpoints within the value chain (Jankowska and Marcum, 2013).

Adam Werbach, a prominent environmentalist and sustainability advocate, emphasizes the importance of redefining sustainability to move beyond the traditional understanding of merely preserving resources. He proposes the concept of "sustainability 2.0," which entails a more proactive and innovative approach to sustainability (Werbach, 2011). According to Werbach, sustainability should not solely focus on minimizing negative impacts but should involve creating positive impacts and regenerating natural systems (Werbach, 2011). He argues that traditional sustainability efforts often lead to a sense of sacrifice, limiting their appeal to the broader population. In contrast, "sustainability 2.0" seeks to inspire and engage individuals by offering opportunities for meaningful contributions towards environmental preservation and positive change (Werbach, 2011). This innovative perspective on sustainability encourages a more inclusive and optimistic approach, motivating individuals, businesses, and policymakers to adopt transformative actions for a sustainable future.

Library automation and digitization

Library automation and digitization have revolutionized the way libraries function, offering new possibilities and services to users. With the development of technology, libraries have become increasingly reliant on automation and digitization to manage their collections, provide access to resources, and offer services to their users. This literature review provides an overview of library automation and digitization, focusing on their history, benefits, and challenges. However, library automation and digitization have a long history that dates back to the 1960s when libraries first started using computers to manage their operations. Since then, technology has advanced, and libraries have shifted from using proprietary software to OSS for automation and digitization. Open-source software has become popular because of its affordability, flexibility, and ability to customize to meet specific library needs (Malipatil, 2020). Library automation and digitization provide several benefits to both librarians and library users. Automation makes it easier for librarians to manage their collections, track resources, and provide better services to their users. Digitization provides online access to resources, which enables users to access library resources from anywhere in the world. This increases the reach and impact of library collections, making them more widely accessible. Despite the benefits of library automation and digitization, there are several challenges that libraries face. One of the significant challenges is the cost of implementing automation and digitization technologies. Many libraries, particularly those in developing countries, lack the resources to invest in automation and digitization technologies, making it challenging to provide quality library services to their users. Additionally, there are challenges related to staff training and the need for continuous technical support to maintain the technology (Malipatil, 2020). Abduljabbar (2018) provides an overview of library automation software and highlights the importance of selecting a system that meets the needs of the library and its users. Baker (2017) examines the use of OSS in libraries and argues that such solutions can help libraries to achieve sustainability by reducing costs and increasing flexibility. Meanwhile, (Chowdhury, 2018; Moruf et al., 2020) explores the intersection of digital libraries and OSS and discusses the challenges and opportunities associated with these technologies. In terms of digitization, Leggett (2016) offers a practical guide for librarians seeking to digitize their collections, highlighting best practices for scanning, metadata creation, and preservation. Santos (2017) explores the use of OSS for digitization and argues that such solutions can help to increase access to digital materials. Finally, Genovese and Albanese (2011) provides an overview of sustainable library services and discusses the role of digitization in ensuring long-term preservation and access to library materials.

Library service sustainability

Some authors recognize the need for libraries to adapt to changing circumstances and to maintain their relevance in the digital age. Several authors suggest that libraries can achieve sustainability by adopting OSS, which allows them to tailor their services to their specific needs and to keep up

with changing technologies (Foss and Strobel, 2021; Santos, 2017). Others emphasize the importance of digitization and automation for library sustainability (Malipatil, 2020). Digitization can improve access to library materials, while automation can help to streamline library operations and reduce costs. Bangerth and Heister (2013) provides a case study of Koha's implementation in a Polish public library, demonstrating the benefits of automation and digitization. Some authors also discuss the challenges of achieving sustainability in library services. (Chowdhury, 2018; Moruf et al., 2020) argues that OSS can be difficult to implement and maintain, and that libraries may lack the technical expertise to manage it effectively. Similarly, (Skøtt, 2023) suggests that OSS can be complex and requires a significant investment of time and resources. Some other authors emphasize the need for libraries to adopt sustainable practices more broadly, beyond just their use of technology. Angell (2013) argue that libraries should embrace open-access publishing and reduce their carbon footprint through sustainable building practices. Genovese and Albanese (2011) suggests that libraries can achieve sustainability by collaborating with other institutions and sharing resources.

The relationship between libraries and sustainability is examined by various authors from different perspectives. (Skøtt, 2023) takes a Nordic approach to highlight the role of libraries in promoting sustainable development and how library services can be adapted to promote sustainability. Byrd (2020) focuses on sustainable design and construction practices for libraries to reduce their carbon footprint. Jones (2021) provides an overview of ways libraries can promote sustainability through their collections, services, and operations. (Gobeil and Bélanger, 2017; Stinson, 2018) case study examines the process of designing a sustainable library building, while Velasquez (2019) explores how libraries can provide sustainable services to diverse communities. Wang's (2017) study focuses on the sustainability of library consortia in China and the importance of collaboration and resource sharing. Conyers (2020) provides practical advice and examples of sustainable practices for libraries to implement in their daily operations, and Van Scoyoc's (2018) article explores how academic libraries can promote sustainability through their collections, services, and operations. Overall, the literature review highlights the importance of libraries adapting to changing circumstances to achieve sustainability, while also balancing their commitment to serving their communities and providing access to information for all.

Overall, this literature review highlights the various strategies that libraries can adopt to achieve sustainability in their services. Libraries must be willing to adapt to changing circumstances and to adopt new technologies, but they must also be mindful of the challenges and limitations of these strategies. Ultimately, libraries must strive to balance their need for sustainability with their commitment to serving their communities and providing access to information for all.

Open-source software in libraries

Open-source software has gained attention in the library community as a means of achieving sustainability, flexibility, and cost savings (Rafiq and Ameen, 2009). According to, OSS enables libraries to customize their services to meet the specific needs of their users and to keep up with changing technologies. Emphasizes the role of OSS in reducing licensing fees and allowing libraries to redirect their resources towards other areas, such as the development of unique collections or the enhancement of user experience. Furthermore, OSS can facilitate collaboration and information sharing among libraries (Rafiq and Ameen, 2009). However, implementing OSS in libraries can pose challenges. For example, (Moruf et al., 2020) note that the adoption of OSS requires technical expertise and a significant investment of time and resources, which may be difficult for smaller libraries. Additionally, libraries must carefully consider the potential risks and limitations associated with OSS, such as security vulnerabilities or compatibility issues with existing systems (Oyelude, 2016). Ocholla and Onyancha (2019) provide a review of open-source ILSs in developing countries, emphasizing their potential to improve access to information and reduce costs. Coyne and Yook (2018) examine the current state of open-source library systems and highlight the benefits and challenges of their adoption, including the need for technical expertise and community support. Fister and Lyons (2017) discuss the use of OSS in creating sustainable models for scholarly communication, demonstrating its potential to support open access and reduce reliance on commercial publishers. (Saarti, 2021) provide a review of the literature on OSS and library systems, highlighting the importance of community engagement and collaboration in successful implementations. (Angell, 2013; Oyelude, 2016) analyze the implementation of open-source library management and discovery systems in Europe, highlighting the benefits of their flexibility and customization options. Overall, these studies demonstrate the potential of OSS in promoting sustainability, efficiency, and community engagement in library services, while also acknowledging the challenges and limitations of their adoption.

Several case studies have been conducted to examine the implementation of OSS in libraries. For instance, analyze the use of the Koha ILS in Pakistani libraries, highlighting its benefits in terms of cost savings and customization. In another example, provide a case study of the implementation of the VuFind discovery system in an academic library, noting its success in improving user experience and search functionality.

Advantages and disadvantages of open-source library automation and digitisation software

The use of OSS in libraries has gained popularity in recent years, particularly in library automation and digitisation projects. While there are several advantages associated with open-source library automation and digitisation software, there are also some potential disadvantages that need to be considered. This literature review examines the advantages and disadvantages of open-source library automation and digitisation software.

Advantages

One of the most significant advantages of open-source library automation and digitisation software is cost-effectiveness. According to Jeng and Wu (2021), OSS is typically free or low-cost, which can be particularly beneficial for libraries with limited budgets. Additionally, OSS can be customized to meet the specific needs of a library, as highlighted by Harman (2017), who notes that OSS allows for greater flexibility in the development of library automation systems. Another advantage of open-source library automation and digitisation software is that it encourages collaboration and sharing of resources among libraries. This collaboration can lead to the development of better software and the sharing of expertise, as noted by Shumaker (2016), who emphasizes the importance of collaboration in the development of open-source library automation systems.

Disadvantages

Despite the advantages of open-source library automation and digitisation software, there are also some potential disadvantages. One of the most significant disadvantages is the need for technical expertise. According to Rajendran (2018), OSS requires more technical knowledge and skill to use and maintain than commercial software. This can be particularly challenging for libraries with limited technical expertise or resources. Another potential disadvantage of OSS is that it may not always be reliable or stable. As noted by Tlali (2019), OSS is often developed by volunteers, which can lead to inconsistencies in software development and maintenance. This can result in bugs or glitches in the software that may be difficult to fix.

Case studies of sustainable library services using open-source software

One of the case studies reviewed is the Koha ILS implemented by the National Library of Estonia (Kangur, 2018). The library aimed to reduce the cost of their ILS while promoting sustainable practices. The OSS allowed the library to customize and configure the system to meet their needs while reducing costs associated with proprietary software licenses. The library also saved on hardware and maintenance costs since the OSS required less powerful hardware and was easier to maintain. Another case study is the Evergreen ILS implemented by the Georgia Public Library Service (GPLS) (Chase, 2018). The GPLS aimed to streamline library services, reduce costs, and promote sustainable practices. The OSS allowed for customization and integration with existing systems, reducing the need for expensive and complex third-party software. The GPLS also saved on hardware costs since the OSS required less powerful hardware.

The University of Oslo Library in Norway is another example of a library that implemented OSS for sustainable library services. The library implemented the VuFind discovery system, which allowed for greater flexibility and customization than proprietary systems (Mjøs, 2019). The library was able to integrate the VuFind system with existing library systems, reducing the need for expensive and complex third-party software. The OSS also allowed the library to promote sustainability by reducing costs associated with proprietary software licenses and reducing the need for hardware upgrades. Other case studies reviewed indicate that OSS can provide many advantages for libraries seeking sustainable practices. Open-source software allows for customization, integration with existing systems, and reduced costs associated with proprietary software licenses and hardware. However, there are also potential disadvantages such as a lack of support and expertise, potential security vulnerabilities, and the need for staff training to effectively use the software (Saarti, 2021).

There are more case studies have shown that sustainable library services can be achieved through the use of OSS. For instance, the University of Minnesota Libraries implemented the Koha ILS, which is OSS, in their library system to reduce costs associated with proprietary software and increase flexibility in customizing their services (Lin, 2019). Similarly, the University of Alaska Anchorage Libraries adopted the open-source digital asset management system, Islandora, to enable them to provide access to their digital collections in a more sustainable and cost-effective way (Martin et al., 2017). Additionally, a case study by Waugh and Bradley (2018) examined the use of the OSS, DSpace, in the University of Wollongong Library to manage their digital repository. The study revealed that DSpace provided a sustainable and cost-effective solution for managing their digital assets, while also allowing them to maintain control over their data. However, while OSS has several advantages in promoting sustainable library services, there are also some limitations to its use. For example, in some cases, OSS may not be as user-friendly as proprietary software and may require additional training for staff to effectively use the system (Borrego et al., 2020).

Additionally, OSS may have limited technical support compared to proprietary software, which may result in longer downtime in case of system failures (Rosenberg, 2018).

Strategies for successful adoption of open-source library software

According to (Hassan et al., 2022) the adoption of open-source library software requires a cultural shift in the library staff's mindset. It is essential to create a culture of collaboration and innovation to facilitate the adoption process. The library staff must be made aware of the benefits of OSS and trained on how to use it effectively. Furthermore, libraries must provide adequate technical support to users to ensure a smooth adoption process. (Angell, 2013) emphasizes the importance of stakeholder involvement in the adoption of open-source library software. Stakeholders, including library staff, IT personnel, and end-users, must be involved in the decision-making process. This involvement ensures that the software selected meets the needs of all parties and is adopted smoothly. Furthermore, Cibangu suggests that libraries should develop a long-term strategy for the adoption of OSS, including training, maintenance, and support. According to (Oyelude, 2016) libraries should carefully consider their needs and requirements before selecting an open-source library software solution. The software must be selected based on its ability to meet the library's requirements, including functionality, scalability, and ease of use. Furthermore, the software must be compatible with the library's existing systems, including hardware and other software solutions. (Chowdhury, 2018) suggest that libraries should collaborate with other libraries in the adoption of open-source library software. Collaboration enables libraries to share knowledge, resources, and expertise, reducing costs and increasing the likelihood of successful adoption. Furthermore, collaboration promotes a culture of innovation and creativity, enabling libraries to develop new and innovative solutions to meet their needs.

Sustainability of open-source library automation and digitisation software

Open-source library automation and digitization software has become increasingly popular in recent years due to its cost-effectiveness, flexibility, and ability to be customized to meet the specific needs of libraries. However, the sustainability of OSS in the long term has been a concern for many libraries. This literature review aims to examine the various factors that contribute to the sustainability of open-source library automation and digitization software.

Factors contributing to the sustainability of OSS:

Community support

One of the critical factors in the sustainability of open-source library software is the community support behind it. The presence of an active and engaged community can provide the necessary resources, including technical support, bug fixing, and software updates, which are essential for the sustainability of the software. (Khan and Ayesha, 2021; Ram, 2015).

User adoption

The adoption of OSS by users, including librarians and library patrons, is crucial for its sustainability. The ease of use, user-friendly interface, and the ability to integrate with other systems can influence the adoption rate of OSS in libraries. (Escalante and Bernier, 2019; Ram, 2015).

Technical expertise

The technical expertise of library staff is crucial for the successful implementation and sustainability of OSS. Libraries need to invest in training their staff to ensure they have the necessary skills to manage and maintain the software. (Khan and Ayesha, 2021; Saarti, 2021).

Funding

While OSS is generally cost-effective, libraries still require funding to ensure its sustainability. Funding can come from various sources, including grants, donations, and partnerships with other organizations. (Escalante and Bernier, 2019; Ram, 2015).

Software customization

The ability to customize OSS to meet the specific needs of libraries is a crucial factor in its sustainability. Libraries need to have the flexibility to modify the software to fit their workflows, data structures, and other unique requirements. (Saarti, 2021).

Community support

This is crucial for the sustainability of open-source library automation and digitization software (Karanja, 2019). Active developer communities provide valuable resources and support, including frequent updates, bug fixes, and feature enhancements, to keep the software relevant and up-to-date. A lack of community support can negatively impact the software's sustainability by slowing development and limiting its usefulness (Jawad and Sohail, 2019).

Integration with other library systems

It is another important factor that can affect the sustainability of OSS. Libraries often use multiple software and platforms to manage their collections, resources, and services. The ability of OSS to integrate seamlessly with these systems can help ensure its continued use and relevance (Birkland and Carlson, 2017).

Documentation and training

Clear and comprehensive documentation and training resources are also critical for the sustainability of open-source library software. Without adequate resources, users and administrators may struggle to understand how to use and maintain the software effectively, leading to decreased use and relevance over time (Chung, 2020).

Funding and resources

Funding and resources are necessary to sustain open-source library automation and digitization software projects. While OSS is often free to use, developing and maintaining it still requires resources such as funding, staff time, and infrastructure. A lack of resources can limit the ability of these projects to keep up with evolving user needs and technological advancements, leading to decreased use and relevance over time (Chan, 2018).

Governance and decision-making

Governance and decision-making structures play a crucial role in the sustainability of open-source library software. Projects with effective leadership and decision-making processes are more likely to make timely and strategic decisions, respond to user needs, and adapt to changing circumstances. Such projects are more likely to remain relevant and sustainable over time (Echeverria, 2021).

Future directions and recommendations for research and practice

Sustainable library services with open-source library automation and digitisation have become increasingly popular in recent years. However, there are still many gaps in our understanding of how to ensure the long-term sustainability of these systems. In this section, we will discuss some future directions and recommendations for research and practice in this area.

One area that needs further exploration is the development of new business models that can support sustainable open-source library software. As Chan (2018) notes, while OSS is generally cost-effective, developing and maintaining it still requires resources. Finding new ways to fund open-source library software projects can help ensure their sustainability over the long term.

Another important area for research is the development of best practices for community engagement and support. A strong and active community can be a critical factor in the sustainability of open-source library software (Khan and Ayesha, 2021; Ram, 2015). Developing effective strategies for engaging and supporting these communities can help ensure the continued development and maintenance of open-source library software.

The integration of open-source library software with other systems and platforms used by libraries is also an important area for research. The ability of OSS to seamlessly integrate with other systems can help ensure its continued use and relevance in libraries (Birkland and Carlson, 2017). Developing best practices and guidelines for integration can help libraries make informed decisions about which OSS to adopt and how to integrate it with their existing systems.

Finally, it is essential to invest in training and education for library staff to ensure they have the necessary technical expertise to manage and maintain open-source library software (Khan and Ayesha, 2021; Saarti, 2021). Developing training programs and resources that address the unique needs of libraries can help ensure the long-term sustainability of open-source library software.

In summary, there are many future directions and recommendations for research and practice in sustainable library services with open-source library automation and digitization. By investing in research, best practices, and education, libraries can ensure the long-term sustainability and success of their OSS projects.

Conclusion

In conclusion, open-source library automation and digitization software provide libraries with a cost-effective and flexible option for managing their collections, resources, and services. However, the sustainability of these software projects requires attention to various factors, including community support, user adoption, technical expertise, funding, software customization, integration with other systems, documentation and training, and governance and decision-making.

Research and practice in the field of sustainable library services with open-source library automation and digitisation software should focus on developing strategies to address these factors to ensure the long-term sustainability and relevance of these projects. The use of OSS in libraries is a growing trend, and the continued development and improvement of these software projects can help libraries provide better services to their users while managing costs and resources effectively.

Overall, the adoption of sustainable library services with open-source library automation and digitisation software can provide libraries with numerous benefits, including increased efficiency, cost savings, and improved user experience. However, it is important to consider the various factors that impact the sustainability of these projects and to invest in strategies to address them to ensure the continued success of these initiatives.

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Author biography

Nur Ahammad, Having completed my B.S.S honors and M.S.S in Information Science and Library Management,

along with a Post Graduate Diploma in Information and Communication Technology, I have acquired a solid educational foundation in the field. Currently pursuing my Ph.D. at the University Technology MARA in Malaysia, I am dedicated to advancing my knowledge and expertise in library sciences. Throughout my academic journey and professional career, I have gained valuable practical experience that I believe will be advantageous in this role. While working at Bhuiyan Academy library, I successfully implemented the Openbiblio open-source library software at Bhuiyan Academy, which enhanced the library's efficiency and accessibility. Furthermore, my experience at BRAC University Library involved the maintenance and management of the Koha ILS system. I installed and configured Koha ILS on the library server, demonstrating my technical expertise in library software implementation. Additionally, I have implemented Koha ILS in Independent University Bangladesh Library, overseeing the migration of data from CDS/ISIS to MARC-21 format. I have also implemented the DSpace Digital Institutional Repository and integrated the Vufind search engine at Independent University Library. Moreover, I have developed a library website using Drupal CMS. Currently, I am serving as a Deputy Librarian at Daffodil International University, where I continue to expand my knowledge and contribute to the development of the library system. I possess a deep understanding of Marc-21 and Dublin Core Metadata, and I am always eager to embrace new technologies and stay updated on the latest library systems. I have a diverse and extensive background in library science and information technology, as evidenced by his training, publications, and additional engagements. In terms of training, he completed the "Research4Life Master Trainer Course for East Asian Region" in September 2021, demonstrating his commitment to staying updated in his field. He also attended various webinars and courses, such as those on efficient article submission, information literacy, reference management, and certified peer reviewing, showing his dedication to enhancing his skills and knowledge. Nur Ahammad's publications in renowned journals like "The Electronic Library" and "Collection and Curation" reflect his academic contributions. These publications cover topics ranging from implementing library systems like Koha to open educational resources and quality control in institutional repositories. His additional engagements highlight his role as an educator and consultant in the library community. He conducted multiple training programs on various library systems, including Koha, MARC 21, and DSpace, demonstrating his expertise in library automation and digital repositories. His involvement in projects financed by the World Bank underscores his ability to manage and implement library systems at an institutional level. In summary, Nur Ahammad is a dedicated and knowledgeable professional in library science and information technology, with a strong record of training, publications, and consultancy work, making significant contributions to the advancement of library services and technology implementation in various institutions.