

# Digital Library Service Innovation to Support Academic Activities at Universitas Katolik Musi Charitas

Nurhidaya Agusti<sup>1✉</sup>, Shimdi Hesien Dini<sup>2</sup>, Misroni<sup>3</sup>, Edna Omare<sup>4</sup>

(1,2,3) UIN Raden Fatah Palembang, Palembang, Indonesia

(2) University of Nairobi (UoN), Nairobi, Kenya

✉ Corresponding author  
shindihesien@gmail.com

Received: 06-01-2026 | Revised: 16-04-2026 | Accepted: 22-04-2026

## ABSTRACT

The advancement of information technology has driven the transformation of academic library services toward more flexible and user-oriented digital systems. This study aims to analyze digital library service innovation in supporting academic activities at Universitas Katolik Musi Charitas. The research employs a qualitative approach with a case study design. The participants include librarians and library users (students and lecturers) selected through purposive sampling. Data were collected through in-depth interviews, observation, and documentation, and analyzed using an interactive model involving data reduction, data display, and conclusion drawing. The findings reveal that digital services such as OPAC, e-resources, and institutional repositories serve as primary tools for information retrieval and play a significant role in supporting learning and research activities. Additionally, online-based services enhance accessibility and improve service efficiency. However, challenges related to infrastructure limitations and users' digital literacy remain evident. This study concludes that digital library service innovation plays a strategic role in supporting academic activities and contributes to the development of more adaptive and user-centered library service.

*Perkembangan teknologi informasi telah mendorong transformasi layanan perpustakaan perguruan tinggi menuju sistem digital yang lebih fleksibel dan berorientasi pada pengguna. Penelitian ini bertujuan untuk menganalisis inovasi layanan perpustakaan digital dalam mendukung aktivitas akademik di Universitas Katolik Musi Charitas. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus. Subjek penelitian meliputi pustakawan dan pengguna perpustakaan (mahasiswa dan dosen) yang dipilih secara purposive. Data dikumpulkan melalui wawancara mendalam, observasi, dan dokumentasi, kemudian dianalisis secara interaktif melalui reduksi, penyajian, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa layanan digital seperti OPAC, e-resources, dan repositori institusi menjadi sarana utama dalam penelusuran informasi serta berperan dalam mendukung kegiatan pembelajaran dan penelitian. Selain itu, layanan berbasis daring memberikan kemudahan akses dan meningkatkan efisiensi penggunaan layanan perpustakaan. Namun demikian, masih terdapat kendala terkait infrastruktur dan literasi digital pengguna. Penelitian ini menyimpulkan bahwa inovasi layanan perpustakaan digital memiliki peran strategis dalam mendukung aktivitas akademik, serta memberikan kontribusi dalam pengembangan layanan perpustakaan yang lebih adaptif dan berorientasi pada kebutuhan pengguna.*

**Keywords:** digital service innovation, academic libraries, academic activities, information access

## Introduction

The rapid evolution of information and communication technologies has fundamentally reshaped the landscape of higher education, particularly in the way academic information is accessed, managed, and disseminated. Academic libraries, once primarily perceived as repositories of physical collections, are now undergoing a profound transformation into dynamic digital service hubs that prioritize accessibility, efficiency, and user-centered experiences. This transformation reflects not only technological advancement but also a broader paradigm shift in how users engage with information resources. In this context, digital



library service innovation emerges as a critical component in supporting academic activities, enabling institutions to respond to the increasing demand for flexible, efficient, and personalized information services. Recent trends indicate that the integration of advanced technologies such as artificial intelligence (AI), smart systems, and cloud-based infrastructures has significantly enhanced the quality of service delivery and user satisfaction, positioning academic libraries at the forefront of digital transformation in higher education (Ardywin et al., 2025; Daqal et al., 2025; Oyedokun, 2025; Katulić, 2025; Okwu et al., 2024).

From a conceptual perspective, digital library service innovation refers to the continuous development and implementation of technology-driven services designed to expand access to information, improve service efficiency, and foster deeper user engagement within academic environments. Emerging technologies such as artificial intelligence (AI), the Internet of Things (IoT), and cloud computing have enabled libraries to deliver more adaptive and intelligent services, including personalized information retrieval systems, automated recommendations, and data-driven user support mechanisms. These innovations not only streamline information access but also create more meaningful and customized user experiences, thereby enhancing the overall effectiveness of academic information services (Masenya & Chisita, 2022; Ardywin et al., 2025; Oyedokun, 2025). Furthermore, the integration of mobile technologies and virtual platforms has extended the reach of library services beyond physical boundaries, allowing users to access digital resources anytime and anywhere, thus reinforcing the concept of ubiquitous learning and user-centered service environments (Liu, 2025; Hamad et al., 2023).

In addition to technological advancements, the proliferation of digital resources—including online databases, electronic journals, and multimedia collections—has significantly influenced information-seeking behaviors among students and researchers. Users increasingly demonstrate a preference for digital platforms due to their convenience, immediacy, and perceived value in supporting academic tasks. This shift in behavior is further shaped by users' technological readiness and their perceptions of the usefulness and ease of use of digital services, which ultimately influence their engagement and interaction with library systems (Zhao & Zhang, 2024; Kiran & Singh, 2008; Chan & Spodick, 2016; Salim et al., 2016; Sun & Meng, 2026). Moreover, digital library services are becoming more interactive and collaborative through the integration of knowledge-sharing platforms, social networking features, and user feedback mechanisms, all of which contribute to continuous service improvement and enhanced user participation (Oyedokun, 2025; Distanont et al., 2024).

Despite the remarkable advancements in digital technologies and their integration into academic library services, the process of implementing digital innovation remains far from seamless. In practice, many institutions continue to face complex and interrelated challenges that extend beyond mere technological adoption. Issues of unequal access to digital resources, particularly for users with disabilities, reveal persistent gaps in the inclusivity of digital library systems. Limitations such as inaccessible content formats, non-intuitive navigation interfaces, and insufficient adaptive technologies often hinder certain user groups from fully benefiting from digital services. At the same time, infrastructural disparities, especially in institutions with limited technological capacity, further complicate the delivery of equitable services. Financial constraints, institutional resistance to change, and concerns related to data privacy and security also contribute to the slow and uneven pace of digital transformation. These realities suggest that the success of digital library innovation is not solely determined by the availability of advanced technologies, but also by the extent to which institutions are able to design inclusive,

sustainable, and context-sensitive service models (Oswal, 2020; Abu Qaadani et al., 2024; Maina et al., 2026; Hamad et al., 2023; Acheampong & Dei, 2020).

Alongside these structural and technological challenges, the transformation of digital library services has also brought about a profound shift in the professional identity and responsibilities of librarians. Traditionally positioned as custodians of physical collections, librarians are now increasingly expected to navigate complex digital ecosystems and actively engage in supporting academic communities. Their roles have expanded to include facilitating digital scholarship, guiding users in information literacy, managing research data, and providing technological assistance in accessing and evaluating digital resources. This transition requires not only technical proficiency but also adaptive thinking and continuous learning, as librarians must keep pace with rapidly evolving technologies and user expectations. In this sense, the transformation of library services is inseparable from the transformation of human capital within the institution. The effectiveness of digital innovation ultimately depends on the ability of librarians to function as mediators between technology and users, ensuring that digital services remain accessible, meaningful, and responsive to diverse academic needs (Hussain & Abdullah, 2025; Sandhu, 2018).

Although the discourse on digital library innovation has grown substantially in recent years, a closer examination of the literature reveals that many studies still tend to emphasize technological development, system implementation, or user acceptance in isolation. Such approaches, while valuable, often overlook the broader question of how these innovations are experienced and utilized within the context of academic activities. There is still limited understanding of how digital library services concretely contribute to enhancing learning processes, supporting research productivity, and fostering academic collaboration. This gap highlights the need for a more integrative and analytical perspective that situates technological innovation within the lived realities of academic users. By addressing this gap, research can move beyond descriptive accounts of digital transformation and instead provide deeper insights into its functional significance and practical implications. Therefore, this study seeks to contribute to the existing body of knowledge by examining not only the forms of digital library innovation but also their relevance and impact in supporting academic activities within higher education institutions.

In light of this, the present study focuses on the Library of Universitas Katolik Misi Charitas as a case study representing institutional efforts toward digital service transformation. This context is selected based on its ongoing initiatives in developing digital library services, which require systematic analysis to assess their effectiveness and impact. The primary objective of this study is to analyze digital library service innovation in supporting academic activities at Universitas Katolik Misi Charitas and to identify its implications for improving academic information services. By doing so, this research aims to contribute both theoretically and practically to the advancement of digital library studies, offering insights that may inform policy development and service innovation in higher education institutions.

## Methods

This study employs a qualitative approach with a case study design to gain an in-depth understanding of digital library service innovation within the real-life context of the Library of Universitas Katolik Misi Charitas. The qualitative approach is chosen as it allows the researcher to explore meanings, processes, and contextual dynamics associated with the implementation of digital services in a holistic manner (Creswell, 2014; Sugiyono, 2019). A case study strategy

is applied to enable an intensive examination of a bounded system, namely the institutional library as the primary unit of analysis. In this study, the researcher acts as the main instrument (human instrument), directly engaging in data collection and interpretation processes to capture a comprehensive and nuanced understanding of the phenomenon under investigation.

The research participants consist of librarians, library administrators, and users (students and lecturers) at Universitas Katolik Musi Charitas, selected through purposive sampling based on their involvement and experience with digital library services. Data were collected through in-depth interviews, direct observations of library service activities, and documentation analysis, including digital archives, service systems, and institutional policies. The research instruments were developed in the form of semi-structured interview guides and observation checklists, designed based on indicators of digital service innovation and academic activities. The study was conducted within the setting of the Universitas Katolik Musi Charitas Library over a period aligned with the data collection needs.

Data analysis was carried out using an interactive model involving data reduction, data display, and conclusion drawing, as proposed by Miles and Huberman (2014). This process was iterative and continuously conducted throughout the stages of data collection and interpretation. To ensure the trustworthiness of the findings, this study applied source and method triangulation, as well as member checking with participants to validate the accuracy of the data. Additionally, the researcher maintained ongoing reflexivity to minimize subjective bias. Through this methodological approach, the study aims to produce valid, in-depth, and contextually relevant findings.

## Result

Based on data collected and analyzed through interviews, observations, and documentation, this study identifies several key findings related to digital library service innovation in supporting academic activities at Universitas Katolik Musi Charitas. These findings reflect the dynamics of digital service utilization, encompassing patterns of use, functional roles of services, user interaction, and challenges encountered in their implementation. To ensure clarity and systematic presentation, the findings are organized into four main themes: (1) patterns of digital library service utilization, (2) the role of digital services in supporting academic activities, (3) interaction and accessibility of digital services, and (4) challenges in the utilization of digital library services. These themes are developed based on the alignment between empirical findings and the focus of the study, providing a comprehensive representation of digital library service practices within the academic context.

### 1. Patterns of Digital Library Service Utilization

The findings reveal a significant shift in the way users engage with library services at Universitas Katolik Musi Charitas, moving from conventional practices toward digital-based interactions. In their daily academic activities, students no longer rely primarily on browsing physical collections but instead access information through the online public access catalog (OPAC) and various electronic resources. Observational data indicate that users independently interact with digital systems, utilizing personal devices such as laptops and smartphones to search for relevant information. This shift is reflected in users' experiences, which emphasize convenience and efficiency. One student stated, *"I now prefer searching for references online because it is faster and accessible from anywhere."* This statement illustrates how digital services have become the primary means of fulfilling academic information needs. Information-seeking

activities are no longer confined to the physical space of the library but occur in a more flexible and user-driven manner.

## **2. The Role of Digital Services in Supporting Academic Activities**

The findings demonstrate that digital library services extend beyond information access and have become integral to users' academic processes. Students and lecturers utilize these services in completing assignments, conducting research, and producing academic work. The institutional repository emerges as one of the most frequently accessed resources, particularly among final-year students seeking relevant and context-specific references. A librarian explained that *"students frequently use the institutional repository because it is easier to access and closely aligned with their academic needs."* In addition, information retrieval services and information literacy guidance are utilized by users who require assistance in identifying appropriate sources. In some cases, users engage directly with librarians to obtain guidance, indicating that digital services function not only as information providers but also as support systems within academic learning and research processes.

## **3. Interaction and Accessibility of Digital Library Services**

The findings also highlight that digital-based services provide a more flexible and user-friendly experience. Users are no longer required to physically visit the library for administrative tasks such as loan renewal or room reservations. These processes can now be completed online, allowing for greater efficiency in managing academic needs. One participant noted that *"online services make everything easier, as I don't need to visit the library for simple tasks."* This reflects that accessibility and convenience are key factors influencing the use of digital services. Additionally, the library organizes activities such as information literacy workshops and database training sessions, which are conducted both online and offline. Observations indicate that these activities support users in understanding how to navigate digital systems and utilize available resources more effectively.

## **4. Challenges in the Utilization of Digital Library Services**

Despite the benefits offered by digital services, the findings also reveal several challenges in their utilization. One of the most prominent issues is limited internet connectivity, which affects users' ability to access digital resources smoothly. Some users experience difficulties when accessing certain databases, particularly under unstable network conditions. Furthermore, variations in users' digital literacy levels present another challenge. Not all students possess the same level of competence in navigating digital systems, resulting in a continued need for assistance. A librarian stated that *"some students are still not familiar with searching for academic journals independently and require guidance."* This indicates that the availability of digital services is not always matched by users' readiness to utilize them effectively. In addition, some participants reported that digital systems require further improvement in terms of usability and interface design. Issues related to navigation, accessibility, and system responsiveness remain part of users' experiences. Nevertheless, digital library services continue to be actively utilized in supporting academic activities.

## **Pembahasan/Discussion**

The findings of this study indicate that the dominant use of digital services such as OPAC and e-resources reflects more than a technical shift in information access; rather, it signifies a deeper transformation in users' academic behavior. This shift suggests that information-seeking practices are no longer constrained by the physical space of the library but are increasingly

shaped by flexibility, autonomy, and immediacy. In this context, the library is no longer perceived merely as a physical place, but as an integrated service embedded within everyday academic activities. This transformation aligns with previous studies highlighting that technological advancements have significantly influenced users' preferences toward faster, more accessible, and digitally mediated information environments (Zhao & Zhang, 2024; Sun & Meng, 2026). Therefore, digital library service innovation can be understood as an institutional response to the evolving characteristics of users in contemporary academic ecosystems.

Furthermore, the findings reveal that digital library services extend beyond their traditional role as information providers and play a strategic role in supporting academic activities. The use of institutional repositories, information retrieval services, and information literacy support indicates that libraries actively contribute to learning processes, research development, and scholarly production. This suggests that digital services enhance users' academic capacity, particularly in accessing relevant resources and managing information effectively. These findings are consistent with prior research demonstrating that digital library services contribute to improved academic productivity through broader access to high-quality information resources (Daqal et al., 2025; Oyedokun, 2025). Thus, libraries should be viewed not only as providers of information but also as critical academic infrastructures that facilitate knowledge creation and dissemination.

From the perspective of user experience, the findings emphasize that accessibility and service flexibility are key drivers of digital service adoption. The availability of online-based services that allow users to access resources anytime and anywhere reflects a shift toward more user-oriented service models. This suggests that innovation in library services is not solely dependent on technological advancement, but also on how effectively these technologies respond to user needs in practical contexts. This observation aligns with broader trends indicating that digital library services are increasingly adopting user-centered approaches, supported by mobile integration and cloud-based systems that enable seamless and real-time access (Katulić, 2025; Okwu et al., 2024; Liu, 2025). Additionally, the incorporation of intelligent technologies such as artificial intelligence enhances personalization and improves the efficiency of information retrieval systems (Ardyawin et al., 2025; Masenya & Chisita, 2022). Consequently, the effectiveness of digital library services depends not only on technological availability but also on their usability and relevance to users' academic practices.

However, the findings also highlight that the process of digital transformation is not without challenges. Limitations in technological infrastructure, coupled with variations in users' digital literacy levels, indicate that access to digital services remains uneven. This suggests the presence of a digital divide that may hinder the optimal utilization of available services. These findings are in line with previous studies emphasizing the importance of inclusivity and equitable access in digital library environments (Oswal, 2020; Abu Qadan et al., 2024; Maina et al., 2026). In addition, technical constraints, such as restricted access to certain databases, further demonstrate that digital innovation requires sustained institutional support in both technological and policy dimensions. Therefore, digital transformation should be understood as an ongoing process that necessitates continuous adaptation and improvement.

In terms of human resources, the findings indicate that the transformation of digital library services is accompanied by a significant shift in the role of librarians. Librarians are no longer limited to managing collections but are increasingly expected to function as facilitators of information literacy and mediators between users and digital technologies. This evolving role requires the development of new competencies, including technological proficiency, data

management skills, and adaptability to changing user needs. These findings reinforce the view that the success of digital library innovation depends not only on technological infrastructure but also on the capabilities of human resources in managing and optimizing these systems (Hussain & Abdullah, 2025; Sandhu, 2018). Thus, the development of librarian competencies becomes a critical component of sustainable digital transformation.

Overall, this study demonstrates that digital library service innovation has significant implications for academic practices in higher education. Digital services are no longer supplementary but have become embedded within the core of academic activities. The primary contribution of this study lies in its ability to illustrate that digital library innovation influences not only service delivery but also user behavior, academic interaction patterns, and the institutional role of libraries in supporting knowledge ecosystems. In this regard, the study contributes both theoretically to the field of library and information science and practically to the development of academic library services.

Nevertheless, this study has several limitations. It is confined to a single institutional context, which may limit the generalizability of the findings. Additionally, the qualitative approach employed does not provide quantitative measures of service effectiveness. Future research is therefore recommended to adopt more comprehensive approaches, such as mixed methods, and to expand the scope of investigation across multiple institutions. Such efforts would provide a more comprehensive understanding of digital library service innovation and its impact on academic environments.

## Conclusion

This study demonstrates that digital library service innovation at Universitas Katolik Musi Charitas plays a significant role in supporting academic activities by providing more flexible, efficient, and user-oriented access to information. The dominant use of services such as OPAC, e-resources, and institutional repositories indicates a shift in information-seeking behavior from conventional to digital approaches, while also reflecting the integration of library services into everyday academic practices. These findings address the research objective by confirming that digital service innovation not only enhances information accessibility but also contributes directly to learning processes, research activities, and scholarly production.

From both conceptual and practical perspectives, this study highlights that the success of digital library innovation depends not only on technological availability but also on users' readiness and librarians' capacity to manage and facilitate these services effectively. Therefore, continuous efforts are required to strengthen digital literacy, improve technological infrastructure, and enhance human resource competencies. Future research is recommended to expand the scope of investigation and adopt more diverse methodological approaches to gain a more comprehensive understanding of the effectiveness of digital library services in broader contexts.

## References

- Abu Qaadon, A., Hamad, F., & Fakhouri, H. (2024). Facilitating digital accessibility for students with disabilities into information services at Jordanian academic libraries. *Library Management*.
- Acheampong, E., & Dei, D.-G. J. (2020). Investigation into the challenges associated with the delivery of library services on mobile technology platform. *IAFOR Journal of Literature and Librarianship*.

- Ardyawin, I., Sugihartati, R., & Danugroho, A. (2025). The role of digital technology in transforming academic library services: A systematic literature review. *New Review of Academic Librarianship*.
- Chan, D. L. H., & Spodick, E. F. (2016). Transforming libraries from physical to virtual. In *Digital Information Strategies: From Applications and Content to Libraries and People*.
- Daqal, H. A., Sani, M. K. J. A., Mohamad, A. N., & Alahdal, A. H. (2025). A bibliometric analysis of perceived innovativeness and value of digital library services in enhancing academic research productivity. *Information Services and Use*.
- Distanont, A., Khongmalai, O., Distanont, S., & Treenuchagron, C. (2024). Library trends and developments in a technologically driven era. In *Proceedings of the European Conference on Innovation and Entrepreneurship (ECIE)*.
- Hamad, F., Al-Fadel, M., & Fakhouri, H. (2023). The provision of smart service at academic libraries and associated challenges. *Journal of Librarianship and Information Science*.
- Hussain, S. M., & Abdullah, K. B. (2025). Developing library staff for the digital era through skills, competencies, and institutional support. In *Role of Library Resources for Higher Education in the Digital Era*.
- Katulić, A. (2025). Segments of the digital transformation of academic and research libraries: User experience at the centre. *Bosniaca*.
- Kiran, K., & Singh, D. (2008). Exploring user experiences with digital library services: A focus group approach. *Lecture Notes in Computer Science*.
- Liu, Y. Q. (2025). Advancing library services for mobile users. *Advancing Library Services for Mobile Users*.
- Maina, S., Svard, P., & Mwai, N. (2026). Accessibility of digital resources for students with disabilities in Kenyan public universities. *Universal Access in the Information Society*.
- Masenya, T. M., & Chisita, C. T. (2022). Futurizing library services in a technology-driven dispensation: Reflections on selected academic libraries in Zimbabwe and South Africa. In *Innovative Technologies for Enhancing Knowledge Access in Academic Libraries*.
- Okwu, E., Okwu, N. E., & Oladokun, B. D. (2024). New technological trends and application in libraries: An overview. *Seminars in Medical Writing and Education*.
- Oswal, S. K. (2020). Institutional, legal, and attitudinal barriers to the accessibility of university digital libraries: Implications for retention of disabled students. In *Digital Libraries and Institutional Repositories: Breakthroughs in Research and Practice*.
- Oyedokun, T. T. (2025). Navigating the dynamics of present-day academic libraries: An in-depth analysis of strategies, challenges, and emerging trends. *IFLA Journal*.
- Salim, F., Saigar, B., Armoham, P. K., et al. (2016). Students' information-seeking intention in academic digital libraries. In *Handbook of Research on Leveraging Consumer Psychology for Effective Customer Engagement*.
- Sandhu, G. (2018). The role of academic libraries in the digital transformation of the universities. In *IEEE 5th International Symposium on Emerging Trends and Technologies in Libraries and Information Services (ETTLIS)*.

Sun, S., & Meng, Z. (2026). What contributes to humanities scholars' digital academic information-seeking behaviors: A study based on PLS-SEM and fsQCA. *Journal of Documentation*.

Zhao, C., & Zhang, L. (2024). Information management practices in Chinese academic libraries: A qualitative study of digital transformation and user engagement. *Profesional de la Informacion*.