



ISSN:3027-110X



NIGERIAN LIBRARY ASSOCIATION
NIGER STATE CHAPTER

CONFERENCE PROCEEDINGS

**7th ANNUAL
HYBRID CONFERENCE
/AGM 2025**

THEME:

**INNOVATIVE TECHNOLOGIES IN LIBRARY SERVICES:
EXPLORING THE AVENUES FOR BUILDING USERS'
CONFIDENCE IN LIBRARIES.**



28TH SEP., - 1ST OCT., 2025.



**CPES HALL, FEDERAL UNIVERSITY OF
TECHNOLOGY MINNA, BOSSO CAMPUS,
NIGER STATE**



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Published and Printed
@ Mainasara Publishing
& Printing Service Ventures,
Minna, Niger State
Tel: 07032844805, 07087783846
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ISSN: 3027-110X



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FROM THE EDITORIAL DESK

The Nigerian Library Association, (NLA), Niger State Chapter's is pleased to formally release her the 2nd Edition of her compiled Book of Proceedings. This is a compilation of Papers Presented at the Chapter's 7th Annual Hybrid Conference held at CPES Hall, Federal University of Technology Minna, Niger State. High quality research is leading to corresponding high-quality theories that are finding their place in the real world of application. Nigerian Library Association, Niger State Chapter brings forth an opportunity for researchers in Librarianship Profession to create knowledge for application in emerging issues that will result to massive development in the society. The Conference with a theme **“Innovative Technologies in Library Services: Exploring the Avenues for Building Users’ Confidence in Library”** was carefully carved out and was intended to provide forum for exchange of ideas among professional colleagues towards finding tenable solutions to current issues in the global information value chain.

I owe a heartfelt thanks to all the article contributors for a very fascinating research output which promised to constantly thrive upon high quality research. Cases published in this issue have gone through internal editorial committee's review and the comments received from experts have helped to improve upon the quality of work. In this pursuit, I extend my immense gratitude to a very dedicated team of editors for their relentless and untiring efforts in this regard. We are also indebted to our external reviewers who have spared their valuable time despite their tight schedules and contributed immensely towards the success of this publication.

We sincerely hope that the readers will find the research outputs interesting, relevant and intellectually stimulating leading to building up diverse outlook about contemporary issues.

Prof. A. O. Ahmed
Editor-in-Chief



Published and Printed
@ Mainasara Publishing
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Minna, Niger State
Tel: 07032844805, 07087783846
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ISSN: 3027-110X



WELCOME REMARK BY DR. MUSA BABA ADAMU - THE CHAIRMAN OF THE NIGER STATE CHAPTER OF THE NIGERIAN LIBRARY ASSOCIATION (NLA)

Distinguished guests, colleagues, and friends, it is my great pleasure to welcome you all to the Nigerian Library Association Niger State Chapter Annual Conference. It is an honor to serve as the Chairman of this chapter and I am delighted to see this huge turnout here today.

As we all know, libraries play a crucial role in our society by providing access to information, promoting literacy and education, and preserving our cultural heritage. This conference presents a unique opportunity for all of us to come together and discuss the current trends and challenges in the library profession.

The theme: "Innovative Technologies in Library Services: Exploring the Avenue for Building Users' Confidence in Libraries" is timely and relevant considering the rapid advancement of technology in our world today. It is essential for us as librarians to embrace these technological changes and incorporate them into our services to better serve our communities.

I am pleased to see that we have a diverse range of topics and speakers lined up for this conference. We have experts from different fields who will be sharing their knowledge and

experiences with us, and I am confident that we will all learn a lot from their presentations. I encourage everyone to actively participate in the discussions and take advantage of this opportunity to network with colleagues.

I also want to use this opportunity to appreciate the chairman and chief host for their support towards making this conference a success. We could not have done it without you, and we are grateful for your contribution.

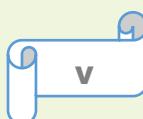
Finally, I wish to thank the organizing committee chaired by Dr. Muhammad Saba Adamu for their hard work and dedication in putting together this conference. It is not an easy task, but your commitment and passion for the library profession are evident in the planning and execution of this event.

Once again, I welcome you all and hope that you will have a fruitful and enjoyable conference. May we all work together to achieve our common goal of promoting the growth and development of libraries in Niger State and beyond.

Thank you.

Dr. Musa Baba Adamu, CLN

Chairman, NLA Niger State Chapter.





A KEYNOTE ADDRESS DELIVERED BY PROF. JIBRIL ATTAHIRU ALHASSAN, THE UNIVERSITY LIBRARIAN, FEDERAL UNIVERSITY KASHERE, GOMBE STATE. AT THE 7TH ANNUAL HYBRID CONFERENCE/AGM 2025, (NLA) NIGER STATE CHAPTER. HELD AT THE CPES HALL, FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, BOSSO CAMPUS, NIGER STATE FROM 28TH SEPTEMBER - 1ST OCTOBER, 2025.

USER CENTRIC LIBRARY SERVICES THROUGH INNOVATIVE TECHNOLOGIES

The information user is at the core of information provision, because without the user, libraries would not need to acquire, process, preserve and disseminate information. With changing user expectations, service provision is undergoing a significant transformation. Thus, to remain relevant and effective in this circumstance, libraries must leverage innovative technologies to enhance their services, improve accessibility, and foster engagement.

USER-CENTRIC LIBRARY SERVICES: Focuses on the needs and desires of library patrons when coming up with services. This approach ensures that services are ensuring solutions are efficient and enjoyable.

INNOVATIVE TECHNOLOGIES

Refers to the introduction of new or significantly improved products, processes, or services that leverage technology to solve problems, create value, or enhance efficiency.

1. Artificial Intelligence & Machine Learning

AI empowers libraries to deliver more personalised, efficient, and accessible services, fostering greater user trust and engagement.

2. Virtual & Augmented Reality

Wikipedia defines augmented reality (AR), also known as mixed reality (MR), as a technology that overlays real-time 3D-rendered computer graphics onto a portion of

the real world through a display, such as a handheld device or head-mounted display.

3. Internet of Things & Smart Libraries

Enhances library services by improving user experience, optimising operations, and increasing the efficiency of resource management.

4. Cloud Computing

Cloud computing simply refers to the delivery of computing services over the internet, including storage, databases, software, and analytics-*Microsoft Azure*

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AI & Machine Learning Application in Library Services

1. 24/7 Reference Assistance: AI chatbots handle common queries, freeing staff for complex tasks and providing constant support.

2. Automated Cataloguing: AI can extract metadata from new acquisitions, reducing manual effort and improving accuracy. AI tools can classify and tag resources efficiently, making discovery easier.

3. Digital Content Management: AI can curate and recommend digital collections such as e-books, audiobooks, and online courses based on user interests. Automated summarization tools provide quick overviews of lengthy materials.

4. Accessibility Improvements: - AI tools like text-to-speech, image recognition, and



language translation makes library resources more accessible to users with disabilities or language barriers.

5. **Personalised Recommendations:** AI algorithms analyse user history and preferences to suggest relevant resources

- **Internet of Things**

- 1. **Smart Inventory Management:**

RFID tags enable real-time tracking, automated check-in/out, and theft prevention.

- 2. **Space Utilisation:** Sensors detect available seats and provide indoor navigation, optimising library space.

- 3. **Environmental Monitoring:** Sensors preserve delicate materials by monitoring temperature, humidity, and light

- **Augmented Reality**

1. **Educational & Learning Tools:** Users can point devices at diagrams, maps, or models to see animations, labels, or interactive 3D representations. AR storytelling engages children and young adults through visual and interactive narratives linked to physical books.

2. **Virtual Exhibits and Cultural Collections:** Libraries can display rare manuscripts, historical artifacts, or digital artworks using AR overlays, enriching the physical space without needing the actual objects. Augmented heritage tours allow patrons scan codes or markers to learn more about the library's history, architecture, or special collections.

3. **Training & Orientation:** New users can be guided through the library with AR prompts explaining facilities, services, and rules. Interactive help desk by pointing a device at a help sign or area brings up AR assistance options like FAQs.

Benefits of Augmented Reality in Libraries

- Enhances user engagement and interactivity
- Simplifies orientation and navigation

- Promotes digital literacy and immersive learning
- Modernises the library experience, especially for younger audiences

Challenges

- Electricity
- Internet connectivity
- Staff competencies
- Lack of confidence to start for fear of failure

Which way for Nigerian Libraries?

Several factors can push libraries in Nigeria to apply these technologies to service delivery. Some of which include:

- Determination from the librarians
- Capacity building other than paper presentations but hands on
- Vibrant library leadership
- Curricula dynamism
- Participatory leadership style
- Critical thinking
- Synergy between head of library and the directors of ICT

Conclusion

- As libraries continue to evolve, it is crucial to prioritise user needs, foster a culture of innovation, and invest in emerging technologies that support their mission to provide inclusive, equitable access to information and knowledge.
- By embracing AI, digital libraries, IoT, VR/AR, social media, and accessibility technologies, libraries can remain relevant, vibrant, and essential community hubs in the digital age.

Jibril Attahiru Alhassan (PhD)

Prof. of Library Information Technology

The University, Federal University

Kashere, Gombe State.



**LEAD PAPER PRESENTATION TITLED: DIGITAL
INNOVATION IN LIBRARY SERVICES: A CHALLENGE
TO THE RELEVANCE AND SUSTAINABILITY OF LIBRARIES
IN THE 21ST CENTURY BY DR OYEKALE ABEL ALADE,
DEPARTMENT OF ARTIFICIAL INTELLIGENCE,
THE FEDERAL POLYTECHNIC, BIDA**

Introduction

The 21st century library services have been highly influenced by digital technology innovations. The disruptive nature of Information and Communication Technology (ICT) has left no field out, as such, library activities. Library services are becoming virtual as they are been automated with advances in ICT. Libraries must embrace and proactively implement new technologies to attract and retain users, while also adapting their services to meet evolving information needs. The traditional library model, which centered solely on physical information resources and spaces, is no longer sustainable. By leveraging digital technologies, libraries can not only attract and retain patrons but also redefine their purpose, i.e. transforming from static repositories of knowledge into dynamic, accessible, and community-centric hubs. This paper outlines the challenges libraries face in this digital age and presents compelling cases for how a robust digital strategy can drive users' patronage and secure their future.

The Erosion of Traditional Patronage: Why Libraries need the Digital Shift

Libraries worldwide are experiencing a significant decline in physical foot traffic, a trend accelerated by the ubiquity of high-speed internet and mobile devices. This erosion of traditional patronage is driven by factors such as access to instant message/information online, shift in digital media consumption and generational expectation. ***Online and instant information tools*** such as search engines (e.g. google.com, yahoo.com, etc.) and recent AI assistants provide immediate answers to questions that once required a trip to the library. Users expect information to be a few clicks away; making physical visits for

research seem slow and inefficient. Today, the ***shift in digital media consumption*** on how people consume literature and entertainment gave birth to e-books, audio books, and streaming services. The convenience of downloading a book or watching a film from the comfort of home often outweighs the trip to a physical library. The ***younger generations/digital natives***, who have grown up with smart phones and social media, have different expectations for library services (Okwu, 2025). They value personalization, seamless user experience, and 24/7 accessibility, all of which are often more readily available in the digital world than in a physical library. For libraries to remain relevant, they must adapt their services to meet the modern user where they are—in the digital space. Hence, overlooking these shifts is a setback to sustainability of libraries.

Solution Path: Leveraging Digital Innovation will Drive Patronage

Digital innovation for libraries isn't just about offering Wi-Fi or a handful of public computers. It's about a fundamental transformation of how they operate and serve their communities. The innovation is a comprehensive strategy that fundamentally re-imagining the library's role and services. The most direct way to attract digital users is to offer the content they desire in the format they prefer. This is means ***expanding and curating robust digital collection*** in extensive ***e-book & audio book collections*** and ***streaming media & online learning***. The prior entails partnering with platforms like OverDrive, Hoopla, and cloudLibrary allowing libraries to offer a vast selection of digital titles accessible via userfriendly apps. This ensures the library remains competitive with commercial services



like Kindle Books and Audible. While, the later entails providing free access to streaming services for films, documentaries, and music (e.g., Kanopy, Freegal) can attract a new demographic. Furthermore, offering online courses and a tutorial (e.g., LinkedIn Learning, Coursera) positions a library as a crucial resource for lifelong learning and professional development.

Modern users are accustomed to personalized experiences tailored to their interests. Libraries can replicate this by ***enhancing user experience through personalization and AI***. Data analytics on borrowing history and user preferences to suggest new titles, authors, or subjects can be utilized. This not only makes the user's experience more engaging but also highlights lesser-known resources they might enjoy. AI-driven Chatbots on the library's website or app to answer common questions (e.g., "What are your hours?", "How do I renew a book?") and provide basic research assistance can be deployed to offer instant, 24/7 support without the need for a staff member.

The library's role, as a learning or research hub, can and should extend its services online to ***fostering community engagement in the digital sphere through hybrid presentations and local information portal development***. The former is hinged on hosting online events such as virtual author talks, book club meetings, and skill-building workshops (e.g., coding classes, resume writing seminars) that are simultaneously live-streamed for online participants and held in-person (OCLC, 2025). This approach eliminates geographical barriers and allows library users with mobility issues or busy schedules to participate. The latter therefore, provide ground to creating dedicated online platforms that serve as trusted sources for local news, events, and resources. Hence, the two approaches reinforce libraries' position as central and reliable organization in the era of misinformation (Oladokun, 2023).

Digital tools can make libraries more accessible to a wider range of patrons thereby ***improving accessibility and inclusivity***. Technology can make library resources more inclusive for everyone. Digital tools like

screen readers, transcription services, and adjustable fonts ensure that people with disabilities can access information and services with greater ease (OCLC, 2025). User-friendly websites and apps with clear navigation, adjustable font sizes, and high-contrast colour schemes to accommodate users with visual impairments or cognitive disabilities could contribute to the relevance of the libraries and patronage underserved group.

Conclusion and a Call to Action

Libraries of the future are not just buildings. They are inextricably linked to their abilities to innovate. Continued reliance on a traditional model will lead to diminishing relevance and, eventually, a crisis of purpose. By strategically investing in digital infrastructure, training staff in new technologies and adopting a user-centric mindset, libraries can not only reverse the trend of declining patronage but also redefine their value.

Libraries in the 21st century must be ***hybrid institutions***, seamlessly blending physical spaces for community gathering and intellectual exploration with robust, accessible, and personalized digital presence. These dual-pronged approaches will ensure that libraries remain indispensable as engines of knowledge, creativity, and community connection, securing their vital role for generations to come. This is not a choice between the physical and the digital; it is about harmonizing both to create a stronger, more resilient, and more inclusive institution.

References

OCLC (2025). "Community Engagement: Build connections, grow relationships, and increase your impact."

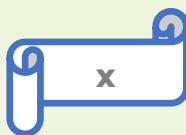
Okwu, E. C. (2025). "Patronage and Use of Library Resources among Gen Z Undergraduates in Nigerian Universities." *ResearchGate*.

Oladokun, O. O. (2023). "Community Engagement in the Digital Age: Libraries as Connectors." *Lead City University Scholarly Journals*.



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EVALUATION OF SECURITY MEASURES FOR SUSTAINABLE INFORMATION SYSTEMS IN PUBLIC UNIVERSITY LIBRARIES IN NIGERIA

BY

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Abstract

The security of information systems in public university libraries remains a critical concern in the digital era, where both physical and electronic resources are increasingly vulnerable to misuse, theft

, and cyber threats. This opinion paper argues that effective security measures are not merely technical add-ons but core components of sustainable library management. While many libraries in developing contexts focus on acquiring ICT infrastructure, insufficient attention is paid to robust security protocols such as access control, authentication systems, data encryption, surveillance, and disaster recovery plans. The absence of these measures often results in breaches that compromise not only the integrity of library collections but also user trust and institutional credibility. This paper contends that libraries should move beyond reactive security practices toward proactive, policy-driven frameworks that integrate technological safeguards with user education. Furthermore, the sustainability of these measures depends on regular staff training and adequate funding support from university management. Strengthening security measures is, therefore, not an optional administrative function but a strategic imperative for ensuring the long-term viability and relevance of public university libraries in an increasingly digital knowledge environment.

Keywords: Security Measures, Information Systems, Public University Libraries, ICT Infrastructure, Library Management, Sustainability, Digital Resources.

Introduction

In the digital era, information systems serve as the backbone of academic libraries especially public university libraries by enabling streamlined access to digital collections, interlibrary loans, and institutional repositories. Yet as these systems grow more sophisticated, they also become targets for cyber threats and data breaches. Okike and Adetoro (2019) observed widespread malware attacks targeting OPAC and operating systems in university libraries in southwest Nigeria, highlighting that while some technical defenses like firewalls exist, effective access control systems are often lacking. Moreover, Owate (2022) underscored how poor information security management can undermine sustainable learning among library professionals, calling attention to the human and organizational dimensions of security.

These findings collectively emphasize that the sustainability of information systems hinges not just on technology, but on organizational readiness and human-centered measures.

Beyond technical safeguards, developing facilitating conditions like adequate ICT skills, awareness campaigns, and policy support proves vital. Esse and Haliso (2024), investigating institutional repository sustainability in Nigerian public universities, found that current awareness and ICT competency significantly influence the continuation of digital services. Additionally, Obim and Akpokurerie (2023) revealed low levels of cybersecurity awareness among librarians in southeastern Nigeria, paired with insufficient training and policy frameworks, which undermines effective information storage. Without attention to these enabling factors, libraries may struggle to build secure systems that endure over time.



Information systems in university libraries refer to the integrated set of technologies, people, and processes used to manage and deliver information resources to academic communities. They encompass both traditional library automation toolssuch as Online Public Access Catalogues (OPACs), databases, and integrated library management systemsas well as newer digital infrastructures like institutional repositories, RFID-based tracking systems, and electronic security devices. As Ismail and Zainab (2017) noted, information systems are central to library operations, but their effectiveness depends on both technological robustness and organizational readiness. In the context of public university libraries in Nigeria, these systems not only facilitate research and learning but also represent valuable institutional assets that must be safeguarded.Samson etal (2015) stated that the technology behind information systems in today's world has been embedded in nearly every aspect of our lives. Thus, the idea of securing our information systems and/or computer networks has become very paramount. Owing to the significance of computer networks in transporting the information and knowledge generated by the increased diversity and sophistication of computational machinery, it would be very imperative to engage the services of network security professionals to manage the resources that are passed through the various terminals (end points) of the these network, so as to achieve a maximum reliability of the information passed, making sure that this is achieved without creating a discrepancy between the security and usability of such network.

Security measures in libraries, on the other hand, are the strategies, technologies, and policies designed to protect information systems from threats such as theft, vandalism, unauthorized access, and cyberattacks. Scholars like Osayande (2013) and Okike and Adetoro (2019) have shown that while some libraries adopt electronic security systems such as CCTV, smart cards, and firewalls, gaps remain in access control, monitoring, and staff compliance. Security measures are generally

categorized into administrative controls (policies, regulations, audits), technical controls (firewalls, passwords, RFID, authentication protocols), physical controls (locks, alarms, surveillance), and human factors (training, awareness, compliance). The absence of a comprehensive mix of these dimensions leaves libraries vulnerable and undermines the reliability of their systems. Sustainability, in the context of information systems, refers to the capacity of libraries to ensure the continuity, resilience, and long-term reliability of digital and physical information services despite evolving threats. Esse and Haliso (2024) stressed that sustainability in library systems is tied not only to infrastructure but also to ongoing awareness creation, ICT skill development, and institutional support. Similarly, Owate (2022) argued that information security management is critical for sustaining professional learning and service delivery in libraries. This means that sustainability is not achieved once and for all but requires continuous investment in infrastructure, policies, and staff attitudes. In this paper, sustainability is understood as the ability of public university libraries to provide secure, reliable, and uninterrupted access to information resources through robust and holistic security measures.

The Centrality of Security Measures

Security measures are the backbone of sustainable information systems in public university libraries. Without well-defined security frameworks, even the most advanced systems remain fragile and prone to collapse. As Singh and Kumar (2021) observe, the growing reliance on digital library services has expanded the threat landscape, making security protocols indispensable. In Nigeria, public university libraries face unique risks such as inadequate surveillance systems, poor cybersecurity defenses, and theft of print and electronic resources. Strengthening these measures requires a layered approachphysical, digital, and administrativeso that no single failure exposes the entire system. This aligns with the argument of Adebayo and Omotayo (2020) that libraries must treat security as a strategic priority, not an afterthought.



The Role of Staff Attitude and Institutional Culture

Even the most sophisticated technologies can fail if library staff and users do not uphold security protocols. Human behavior is often the weakest link in any security system. Staff negligence, deliberate sabotage, or lack of training can render security technologies ineffective. As Fatoki (2022) emphasized, organizational culture and staff attitudes strongly influence how security measures are implemented and maintained. A sustainable approach therefore requires fostering a culture of compliance, accountability, and awareness. Training programs, periodic sensitization workshops, and clearly defined sanctions for breaches are essential for creating a proactive workforce. This is particularly important in Nigeria, where many libraries still struggle with low staff-to-technology alignment (Okike & Adetoro, 2019).

Integrating ICT Infrastructure for Long-term Sustainability

A sustainable information system cannot exist without reliable ICT infrastructure. Power supply, internet connectivity, digital storage, and system interoperability are critical enablers of library security. In their study, Ese and Haliso (2024) found that ICT skill development among staff directly correlates with the effectiveness of security systems. In many Nigerian public university libraries, however, ICT facilities are outdated or poorly maintained, making them ill-equipped to handle emerging security challenges. Investment in modern ICT infrastructures such as cloud-based storage, automated access systems, Radio Frequency Identification Technology (RFID) and AI-driven surveillance can significantly improve resilience. This requires not only financial resources but also strong partnerships with government, donors, and technology providers. Without this integration, sustainability will remain an elusive goal.

Challenges in Strengthening Security Measures

Despite the recognition of security as a core requirement, libraries still grapple with systemic challenges. Chief among them is

inadequate funding, which prevents the acquisition of modern technologies and recruitment of skilled personnel. In addition, irregular power supply in Nigeria hinders the use of ICT-based security systems. Another challenge lies in policy gaps; many libraries lack clear, documented security policies, making enforcement inconsistent. As observed by Nkiko (2020), without formal security policies, libraries are forced into reactive measures rather than proactive planning. These challenges, if unaddressed, undermine any effort to make information systems sustainable.

Challenges in Strengthening Security Measures in Public University Libraries

1. Inadequate Funding

Most public university libraries operate on limited budgets, making it difficult to invest in modern security technologies (RFID, CCTV, access control). Funds are often prioritized for collections and academic services rather than security.

2. Poor ICT Infrastructure

Weak internet connectivity, outdated systems, or lack of reliable power supply hinder the implementation of digital security measures. Without stable infrastructure, technologies like RFID and surveillance systems cannot function effectively.

3. Insufficient Staff Training

Many librarians and staff members lack the technical skills to manage and operate advanced security systems. This leads to underutilization of tools, weak enforcement of policies, and loopholes in security management.

4. User Misconduct and Non-compliance

Students and even some staff may engage in theft, mutilation of books, or misuse of digital resources. Enforcing compliance is challenging due to high user populations and limited monitoring personnel.

5. Resistance to Change and Policy Gaps

Libraries may lack clear, updated security policies, and staff/users may resist new rules or technologies. Institutional bureaucracy also slows down adoption of stronger security measures.



Best Practices for Enhancing Security

Several libraries globally and within Africa have successfully implemented sustainable security models that can inspire Nigerian institutions. For example, the use of RFID technology in South African university libraries has significantly reduced book theft and enhanced resource tracking (Mabunda & Fourie, 2021). Similarly, some Nigerian universities have started adopting biometric authentication for user access, improving accountability. Other best practices include constant staff retraining, collaborations with ICT experts, adoption of open-source security software, and community policing approaches where students and staff share responsibility for safeguarding resources. These practices show that innovation, adaptability, and inclusivity are key to long-term sustainability.

Best Practices for Enhancing Security

1. Adoption of RFID and Digital Tracking Systems

RFID improves efficiency in tracking, circulation, and theft prevention. Research shows that libraries using RFID experience reduced resource losses and better inventory control.

2. Regular Staff Training and Capacity Building

Continuous training ensures staff can operate, monitor, and troubleshoot security systems. Well-trained staff are also better at detecting suspicious behavior and enforcing policies.

3. Integration of ICT Infrastructure with Security Systems

Linking library systems (OPAC, digital repositories) with security tools (firewalls, authentication, surveillance) creates a holistic protection framework. Research indicates ICT-backed security yields better results than isolated measures.

4. User Awareness and Orientation Programs

Educating users about security policies, responsible use of resources, and consequences of misconduct reduces theft, vandalism, and digital misuse. Studies show compliance improves when users are sensitized.

5. Regular Security Audits and Policy Updates

Periodic checks on both physical and digital systems help identify vulnerabilities. Updating policies in line with technological and institutional changes ensures security remains effective.

The Way Forward

To ensure sustainable information systems in public university libraries, a multi-stakeholder strategy is necessary. Government agencies must prioritize funding for library security infrastructure as part of national educational development. University management should develop enforceable security policies and establish dedicated security committees for libraries. Librarians must embrace continuous professional development, while users should be sensitized to view security as a shared responsibility. Furthermore, collaboration with international organizations can bring in expertise, funding, and technology transfer. Ultimately, sustainability depends on viewing security not just as a technical challenge, but as an institutional culture and collective commitment.

Conclusion

The sustainability of information systems in public university libraries depends heavily on the strength of their security measures and the attitudes of staff who manage them. A secure library environment is not achieved through technology alone but through the synergy of policies, infrastructure, and human commitment. As the discussion has shown, robust ICT infrastructure, continuous staff training, and positive organizational culture are critical in overcoming security challenges. Without these, public university libraries remain vulnerable to theft, data breaches, and operational inefficiencies that compromise their mission of supporting teaching, learning, and research.

Recommendations

1. Policy Development and Enforcement: University libraries should establish clear, comprehensive security policies that define staff and user responsibilities, sanctions for violations, and protocols for managing risks.



2. Investment in ICT Infrastructure: Governments, donor agencies, and university management should prioritize the provision of reliable ICT infrastructure such as RFID, biometric access, CCTV, and cloud storage systems.
3. Staff Training and Awareness: Regular workshops and capacity-building programs should be conducted to improve staff competence and foster a security-conscious organizational culture.
4. Collaborative Security Models: Libraries should adopt participatory approaches that involve staff, students, and community stakeholders in safeguarding resources.
5. Sustainable Funding Mechanisms: University management should allocate dedicated funds for security and explore external funding opportunities through partnerships with NGOs and international agencies.
6. Monitoring and Evaluation: Security measures should be continuously assessed and improved through audits, feedback systems, and benchmarking against best practices in other universities.

References

Akor, P. U., Nongo, S. I., & Idachaba, I. A. (2023). Emerging technologies and the future of library security in Nigeria. *South African Journal of Science*, 119(11/12), 16671. <https://unisapressjournals.co.za/index.php/sajs/article/view/16671>

Akpan, A. G., Udofot, C. O., Onyeneho, B. U., & Nwagidi, U. F. (2023, October). Harnessing cybersecurity paradigms for library services. In Proceedings of the 4th National Conference of the Nigerian Library Association, Nasarawa State Chapter (pp. 133–145). Nigerian Library Association. https://www.researchgate.net/publication/374808030_Harnessing_Cybersecurity_Paradigms_for_Library_Services

Badamasi, S., & Utulu, S. C. A. (2021). A framework for managing cybersecurity in Nigerian universities. *arXiv Preprint arXiv:2108.09754*. <https://arxiv.org/abs/2108.09754>

Choobineh, J., Kaya, B., & Yildiz, S. (2024). Impact of information security awareness on information security compliance of academic library staff in Türkiye. *Journal of Academic Librarianship*, 50(4), 102794. <https://doi.org/10.1016/j.acalib.2024.102794>

Echem, M. E., & Okwu, E. (2023). Library security and sustainable service delivery in Donald Ekong Library, University of Port Harcourt. *Communicate: Journal of Library and Information Science*, 25(1), 89–101. <https://www.cjolis.org/index.php/cjoli/s/article/view/26>

Esse, U. C., & Haliso, Y. (2024). Institutional repository sustainability in Nigerian public universities: The roles of current awareness and ICT skills. *Digital Library Perspectives*, 40(2), 137–152. <https://doi.org/10.1108/DLP-05-2023-0035>

Ismail, R., & Zainab, A. N. (2017). Information systems security in special and public libraries: An assessment of status. *Malaysian Journal of Library and Information Science*, 16(2), 45–62. <https://mjlis.um.edu.my/article/view/6697>

Obim, E., & Akpokurerie, R. (2023). Awareness of cybersecurity and its impact on information storage in the university libraries in South East Nigeria. *Nigerian Libraries*, 56(1), 23–38. https://www.researchgate.net/publication/377308149_AWARENESS_OF_CYBERSECURITY_AND_ITS_IMPACT



CT_ON_INFORMATION_STORAG E_IN_THE_UNIVERSITY_LIBRAR IES_IN_SOUTH_EAST_NIGERIA

Okike, B. O. I., & Adetoro, N. (2019). Are there threats to information system security? A focus on university libraries in South-West, Nigeria. *Gateway Information Journal*, 20(1), 1–15.
<https://www.gatewayinfojournal.org/index.php/gij/article/view/26>

Osayande, O. (2013). Electronic security systems in academic libraries: A case study of three university libraries in South-West Nigeria. *Chinese Librarianship: An International Electronic Journal*, 32, 1–14.
<https://researchspace.ukzn.ac.za/items/b34a4504-ce82-4312-912a-db8b68e0f9e4>

Owate, C. (2022). Information security management for sustainable learning among library and information science professionals in Nigeria. *Library*

Philosophy and Practice (e-journal), Article 8522.
<https://acspublisher.com/journals/index.php/lp/article/view/8522>

Samson, Grace and Usman, Mistura M. (2015) Securing an Information Systems from Threats: A Critical Review. *International Journal of Computer Applications Technology and Research*, 4 (6). pp. 425-434. ISSN 2319-8656

Umar, L. (2024). Electronic security management in libraries and information centres: Issues and challenges. In *Proceedings of the 5th International Library and Information Science Conference (LISACON)* (pp. 212–224). ResearchGate.
https://www.researchgate.net/publication/385954205_Electronic_Security_Management_in_Libraries_and_Information_Centres_Issues_and_Challenges