

LIBRARY DYNAMICS IN NIGERIA: CHALLENGES AND EMERGING TRENDS IN LIBRARIANSHIP

Smart Eromosele Ambrose

Department of Library and Information Science
Faculty of Education
National Open University of Nigeria, Abuja
sambrose@noun.edu.ng

Vivian Ugonna Ailakhu

Department of Library and Information Science
Faculty of Education
National Open University of Nigeria, Abuja
vailakhu@noun.edu.ng

Rahila R. Hassan

Department of Library and Information Science
Faculty of Education
National Open University of Nigeria, Abuja
rtebe@noun.edu.ng

Abstract

This study examines the evolving trends in librarianship in Nigeria, focusing on socioeconomic factors influencing library development and the challenges they face. The research uses a qualitative design to analyze emerging trends and their impact on library services. The findings reveal a landscape with both significant challenges and encouraging trends. Collaborations and community involvement programs are crucial for the growth of libraries in Nigeria. The study also highlights challenges such as inadequate funding, limited infrastructure, and the digital divide that hinder 21st-century library services. However, emerging trends like digital technologies, Open Educational Resources, and sustainability present opportunities for enhancing library services. The study also highlights innovations in librarianship, such as e-libraries, Integrated Library Systems, and the integration of artificial intelligence. By leveraging these advancements and addressing socioeconomic and policy challenges, Nigerian libraries can continue to play a vital role in education, research, and community development.

Keywords: Emerging Trends, Socioeconomic Factors, Digital Technologies, Library Development

INTRODUCTION

Libraries promote education, research, and cultural preservation in Nigeria. Through information access, knowledge generation, and lifelong learning, libraries help society to develop. However, technology, societal requirements, and global trends influence librarianship in the country. Libraries must adapt to these changes to stay relevant in a fast-changing environment. The term "library dynamics" refers to the ongoing changes in library systems, services, and operations. Libraries in Nigeria struggle with finance, infrastructure, technology, and user information literacy. These difficulties make it impossible for libraries in Nigeria to meet the demands of the 21st century. Meanwhile, digital technology, Open Educational Resources (OER), sustainability, and equitable access provide libraries new options to improve their services. According to Ogunsola (2019), the development of institutions and the need for academic materials led to the proliferation of libraries in Nigeria. Libraries in Nigeria have struggled for a long time despite their importance.

Nigeria's first public library was modelled after the British. Library development in Nigeria began during colonial administration. From basic reading rooms to complex organizations that encourage learning and studying, these libraries have grown. (Ogunsola, 2019). After Nigeria's independence, Olayinka (2020) notes that early libraries served colonial rulers and experts. Post-independence initiatives included localizing library services and improving accessibility for indigenous people. Libraries have promoted information, community development, and knowledge exchange throughout Nigeria's history. According to Enamudu, Akannam, Odunsi, and Olatunji (2021), the growth of libraries in Nigeria is connected to the reform of educational institutions and the necessity for information literacy. Ogunsola (2019) asserts that colonialism led to the construction of Nigeria's first official libraries. Colonial administrators and expatriates established libraries. Early libraries served a tiny audience with Western-orientated literature and other items. However, once Nigeria got independence in 1960, there was a huge push to develop library services for educational institutions, the public, and national prosperity.

Following independence, public and academic libraries experienced significant expansion. These libraries enhanced educational initiatives and promoted literacy. Established in 1964, the National Library of Nigeria is a significant component of the nation's library system, reflecting its dedication to education (Olayinka, 2020). Tertiary academic libraries have significantly advanced research, scholarship, and higher education. Public libraries enhance the community by providing diverse services and resources that foster literacy and lifelong education. Libraries are becoming

increasingly significant and numerous; however, numerous obstacles hinder their ability to achieve full potential. Inadequate funding and resources constitute a significant problem. Financial limitations hinder numerous Nigerian libraries from acquiring new books, investing in essential equipment, or preserving their physical facilities. (Adekunle, 2018; Hotsonyame, 2023). The rapid advancement of the global digital revolution presents considerable challenges due to the limitations of technology. Urban libraries possess more advanced digital technology compared to rural libraries, which frequently lack even fundamental digital infrastructure. The digital divide has exacerbated the educational disparity between rural and urban regions by hindering rural communities' access to information and libraries. (Igbo & Imo, 2020)

Another problem is a lack of qualified staff. Many libraries struggle to hire staff, and those that do often lack digital literacy and modern library administration skills. Richard's (2022) study found that libraries' inability to adapt to changing user expectations, incorporate new technology, and deliver user-centered services was attributable to their lack of competence. Despite these challenges, positive trends and innovations are shaping Nigerian libraries. One trend is the use of digital technologies and automated procedures. E-library services and integrated library systems (ILS) are being introduced by more libraries as they realize the value of digital materials. (Ikenwe & Udem, 2022). This gives libraries more information to offer. Despite its slow pace, this transformation shows that library services are becoming more accessible and efficient.

This study examines the dynamics of librarianship in Nigeria, focusing on the challenges that libraries face and the emerging trends shaping their evolution. It aims to provide a comprehensive analysis of these dynamics, exploring how Nigerian libraries can navigate obstacles and leverage new opportunities to improve service delivery and societal impact. By investigating these critical aspects, the study seeks to contribute to the discourse on the future of librarianship in Nigeria and offer practical insights for policymakers, library administrators, and other stakeholders.

Purpose of the Study

1. To investigate the new developments in librarianship in Nigeria and their influence on library services.
2. To assess how socioeconomic factors impact the growth and accessibility of libraries in Nigeria.
3. To identify the challenges Nigerian libraries face, particularly regarding resources and infrastructure,

4. To propose strategies for enhancing the role of libraries in Nigerian society, focusing specifically on education and community development.

Review of Related Literature

Historical context and the development of libraries in Nigeria

The development of libraries in Nigeria has been a significant part of the country's educational, cultural, and societal development. We can divide the history of libraries into three phases: precolonial, colonial, and post-independence periods. Before colonial powers arrived, Nigeria's information and knowledge systems were primarily oral, with oral traditions, storytelling, and custodianship of knowledge by elders and specialized groups. The introduction of libraries to Nigeria began during colonial rule in the late 19th and early 20th centuries, with early libraries often affiliated with mission schools and religious institutions. Bello, (2015). In 1932, the establishment of the Nigerian Library Services (NLS) marked a turning point in the development of libraries in Nigeria. The Carnegie Corporation of New York, seeking to promote literacy and information access across the British colonies, initiated the NLS. This initiative laid the foundation for modern public library services in Nigeria. After Nigeria's independence in 1960, there were renewed efforts to expand library services and integrate them into national development strategies.

During the 1960s and 1970s, there was significant growth in the establishment of public and academic libraries, with the University of Ibadan playing a pivotal role in their development. Public libraries also proliferated during this period, driven by government policies aimed at promoting adult education and lifelong learning. In 1964, Nigeria established the National Library of Nigeria, symbolizing its commitment to literacy, education, and cultural preservation. (Onwuka, 2016). The University of Ibadan, established in 1948, was a pioneer in Nigerian academic library development. After Nigeria gained independence, the government redoubled efforts to improve educational opportunities, including increasing library services. The 1964 opening of the National Library of Nigeria (NLN) marked a turning point, fostering a love of reading and education among Nigerians. The government recognized libraries' importance in attaining educational and national development goals, leading to an increase in the number of public and academic libraries during the 1960s and 1970s. (Aguolu & Aguolu, 2003).

Despite the progress made since independence, the development of libraries in Nigeria has faced persistent challenges. Inadequate funding remains a critical issue, limiting the acquisition of resources, maintenance of infrastructure, and adoption of modern technologies. Many libraries,

particularly in rural areas, lack basic facilities and are unable to meet the information needs of their communities. In recent years, libraries in Nigeria have begun to adopt modern technologies to enhance service delivery, such as digital libraries, e-resources, integrated library systems, social media, and mobile technologies. Community libraries have gained prominence as vehicles for literacy promotion and lifelong learning, providing tailored services to meet the specific needs of local populations, particularly in underserved areas. Partnerships with non-governmental organizations and international agencies have also played a crucial role in resource mobilization and capacity building for Nigerian libraries. (Ambrose & Okpala, 2015).

Emerging Trends in Librarianship in Nigeria and Their Impact on Library Services

The field of librarianship in Nigeria is undergoing significant transformations, driven by advancements in technology, evolving user expectations, and global trends. These emerging trends are reshaping library operations, resource management, and service delivery, necessitating a shift from traditional library practices to more innovative approaches. According to Ajiboye and Folorunsho (2022), the integration of digital tools and systems into library operations is at the forefront of these changes, enhancing access to information and improving user experiences. One of the most notable emerging trends in Nigerian librarianship is the adoption of digital technologies. Libraries are increasingly implementing e-resources, integrated library systems (ILS), and digital cataloging tools to streamline operations and expand access to information. This highlights the growing presence of e-libraries, which allow users to access digital books, journals, and databases from remote locations, thus bridging the gap between urban and rural communities. This shift has significantly improved library services, making them more accessible and efficient. (Ikenwe, & Udem, 2022).

Another emerging trend in Nigerian librarianship is the rise of mobile and community libraries. These initiatives aim to extend library services to under-served populations, particularly in remote and marginalized areas. Mobile libraries, equipped with books, digital devices, and educational resources, bring information directly to communities that lack traditional library infrastructure (Alabi & Ojo, 2020). Social media has emerged as a powerful tool for enhancing library visibility and engaging with users. Libraries in Nigeria are increasingly utilizing platforms such as Facebook, Twitter, and Instagram to share updates, promote events, and interact with patrons. According to Olayinka (2020), social media enables libraries to reach a broader audience, particularly younger users who are more digitally inclined. Social media platforms not only promote library services but also serve as virtual reference services and facilitate online

discussions on various topics. This has improved user engagement and created a more interactive library experience. However, the effective use of social media requires staff training and a well-defined digital strategy, which are often lacking in many libraries (Ajiboye & Folorunsho, 2022).

The combination of machine learning and artificial intelligence (AI) is transforming library operations generally, and Nigeria is not left out of this advancement. Artificial intelligence-powered tools automate cataloging operations while also providing data-driven insights for resource management. These technologies offer the ability to personalize user experiences, improve search results, and speed up service delivery. To handle complicated systems, however, the use of artificial intelligence demands significant financial investment as well as skilled staff. (Roh, Heo, & Whang 2019) An intriguing development is the introduction of artificial intelligence and machine learning into library management systems. This integration has the potential to automate cataloging, improve the user experience with personalised recommendations, and boost library operations efficiency. (Hines-Martin, Cox, & Cunningham 2020; Horsfall, 2023).

Big data analytic is gaining popularity as an innovative approach to library administration. It provides new insights into library user behaviour and enables opportunities to improve service. Libraries may make evidence-based decisions, monitor resource utilization, and adjust services to individual patron needs. Nonetheless, it is critical to employ trained personnel and implement appropriate data processing regulations to ensure ethical use and privacy (Ajayi & Thompson, 2023). Nigerian libraries are implementing literacy programs, skill development courses, and seminars to better serve their communities. Community-based initiatives aim to transform libraries into social change agents. Environmental concerns, such as solar power and electronic resources, are also being addressed (Alabi & Ojo, 2020; Adegoke, 2023).

The influence of socioeconomic factors on the development and accessibility of libraries in Nigeria

According to Nwagwu (2020), socioeconomic factors like wealth disparity, resource scarcity, literacy rates, and cultural norms significantly impact library expansion and accessibility in Nigeria. To overcome these challenges, government funding, targeted outreach programs, and digital solutions are needed. Libraries must remove financial and societal barriers to better meet

users' information, education, and personal growth needs. Rural and economically deprived areas face unique challenges, receiving less funding and resources than urban libraries.

According to Balogun and Adeyemi(2021),in Nigeria, libraries face challenges due to insufficient funding and contradictory national priorities. Rural libraries struggle with outdated content, limited space, and lack of critical services like power. This leads to deteriorating facilities, decreased procurement of goods, and insufficient personnel levels. The lack of political will to support library growth at national and state levels exacerbates these financial issues. Many libraries rely on non-profits and other outside sources, which is not always sustainable(Okoro & Madueke, 2023). Nigeria's literacy levels significantly impact library availability and usage, particularly in rural areas. Low literacy rates lead to underutilization of resources, causing some libraries to launch literacy programs and outreach initiatives. However, the effectiveness of these programs is often hindered by resource availability and socioeconomic status of the target communities (Baro & Zuokemefa, 2011).

Despite the global impact that digital technology has had on library services, socioeconomic considerations in Nigeria have hindered adoption. Libraries in heavily populated areas are more likely to offer patrons access to the internet, online catalogues, and e-resources. Ekpo (2020) discovered that libraries in less economically developed nations encounter difficulties in adopting these technologies due to a lack of funds, infrastructure, and experienced personnel. People living in rural places are less likely to be able to use digital library services due to a lack of devices and internet connectivity, contributing to the digital divide and existing gaps in information access. This discrepancy undermines libraries' ability to foster digital inclusion and knowledge dissemination for people from all socioeconomic levels.

Librarians' employment and career opportunities are influenced by socioeconomic factors, as noted by Okoro and Madueke (2023). Low wages and limited advancement prospects deter talented individuals from joining the profession, leading to a shortage of qualified librarians. Existing staff struggle to keep pace with technological advancements due to inadequate training opportunities. Collaborative initiatives with international organizations, such as conferences and workshops, aim to address this issue, but their limited reach disproportionately affects rural and underfunded libraries.

Cultural perceptions also shape library use and development. Many Nigerians, especially in rural areas, undervalue libraries or see them as unnecessary due to widespread internet access, contributing to low community support and patronage (Ekpo, 2020). Efforts to counter these

misconceptions include community engagement programs, library advocacy campaigns, and integrating cultural events into library activities. These initiatives aim to position libraries as vital community centers for learning and recreation (Njoku, 2008).

The Challenges Faced by Libraries in Nigeria

Libraries play a critical role in expanding people's opportunity to learn, grow, and develop intellectually. On the other hand, libraries in Nigeria face a variety of significant challenges that make it difficult for them to serve the general public. Three major difficulties are insufficient resources, insufficient finance, and insufficient infrastructure. Because of these challenges, libraries are unable to meet their clients' ever-changing information needs, and as a result, their services are frequently limited in terms of accessibility.

Libraries in Nigeria are severely underfunded, which is a major issue. Because of limited financial resources, many public and university libraries are unable to provide the necessary materials on a constant basis. According to Nwokocha(2018), libraries are unable to acquire new resources, manage existing collections, or invest in new technologies due to a lack of funding. It can be difficult for libraries to keep up with the ever-changing digital world while still offering patrons with timely and relevant content.

Limited financing has an impact on library personnel levels as well. Many libraries are unable to find skilled staff members, resulting in inadequate staffing levels and excessive workload. Employees may lack the necessary time or supplies to properly assist consumers, resulting in a decline in service quality. Library collections are crucial for library services, but many Nigerian libraries struggle to maintain diverse collections due to lack of financing, access to timely information resources, and the increasing use of online sources. This lack of resources hinders the efficient delivery of services to patrons (Nwokocha, 2018).

Furthermore, the physical infrastructure of Nigerian libraries is a significant challenge that must be overcome. Many libraries lack adequate facilities and fail to meet their clients' needs. Adesina and Bello (2019) claims that a variety of variables, including poor lighting, air circulation, and space for patron activities and library resources, all have a detrimental impact on the overall library experience. Even the most basic library amenities, such as clean restrooms, comfortable seating places, and charging stations for electronic devices, are in little supply or unavailable. Libraries face the risk of losing 'clients' due to poor infrastructure, which prevents them from accessing library services.

As technology advances at a rapid pace, many Nigerian libraries are struggling to adapt to new methods of sharing and accessing information. A significant barrier is the lack of effective access to existing digital technology and technical resources. According to Tayo and Thompson (2016), libraries usually lack access to computers, high-speed internet, and digital databases, which is a significant barrier to meeting the information needs of today's clients. Nigeria's digital divide exacerbates the situation. It is likely that libraries in more urban regions have better access to computers and other digital resources, but libraries in more rural areas may not even have basic internet connectivity. Because of this disparity, clients in rural locations have a more difficult time accessing the same information and services as those in metropolitan areas. This is because rural areas are more remote than urban regions.

Nigerian librarians lack access to professional development programs, hindering their ability to use modern library management strategies and adapt to changing consumer needs. Financial allocation often overlooks opportunities for librarians to advance their careers, limiting service delivery and user engagement (Chukwu & Alabi, 2022). Addressing these challenges is crucial for improving library services and ensuring the well-being of communities in Nigeria, as libraries rely heavily on staff knowledge and skills.

Suggestion/way forward

Governments, NGOs, and private organizations should allocate more resources to library infrastructure, collections, and digital technology adoption to improve library services in Nigeria.

Librarians should undergo continuous professional development to enhance their technical skills and knowledge of emerging trends like AI and big data analytics, which will improve library services in Nigeria.

Efforts should focus on bridging the digital divide through the establishment of internet-connected community libraries in rural areas.

Libraries and external organization must implement clear and consistent policies to foster innovation and resource sharing. Libraries and other institutions (NGOs, government, etc.) need to collaborate more to improve services.

Advocacy campaigns should educate the public about the relevance of libraries in the digital era, emphasizing their role in literacy, education, and community engagement. Expanding mobile library services can help bridge the gap in access to information in rural areas.

Libraries should prioritize sustainability and inclusivity by implementing sustainable practices and ensuring equal access for all, including marginalized and disabled communities.

Establishing more community-based literacy programs can enhance the role of libraries in education. Nigeria should better integrate public libraries into the education system to support lifelong learning.

Conclusion

The Nigerian library sector faces both challenges and opportunities. To build a robust library system, it is crucial to address funding gaps, develop technology infrastructure, and enhance human resource capabilities. Policies promoting open access, digitization, and artificial intelligence can modernize services. Collaborative initiatives and community engagement activities are vital for the development of Nigerian libraries.

Despite challenges like insufficient funding, inadequate infrastructure, and low digital literacy, Nigerian libraries have shown resilience and adaptability. The integration of digital technologies and community-based programs can improve accessibility and relevance. Strategic interventions, such as increased funding, capacity building for librarians, and stakeholder collaboration, are essential to overcoming these obstacles. By embracing these measures, Nigerian libraries can sustain their relevance and enhance their societal impact in the digital age.

References

- Adegoke, S. (2023). Community-based literacy programs: The evolving role of libraries in Nigeria. *Nigerian Library Review*, 12(4), 77-89.
- Adekunle, L. (2018). Traditional library services in Nigeria: Challenges and opportunities. *African Library Journal*, 14(1), 18-30.

- Adesina, T., & Bello, J. (2019). Physical and digital security challenges in Nigerian libraries. *Journal of Library and Information Science*, 34(2), 145-162.
- Agbo, A. D., & Onyekweodiri, N. E. (2017). Libraries are dynamic tools for national development. *Chinese Librarianship: An International Electronic Journal*, 38, 29-35. <http://www.white-clouds.com/iclc/cliej/cl38AO>
- Aguolu, C. C., & Aguolu, L. E. (2003). A force in library development in Nigeria. *World Libraries*, 7(2), 9-18.
- Aina, L. O. (2004). *Library and information science text for Africa*. Ibadan, Nigeria: Third World Information Services Limited.
- Ajayi, J., & Thompson, L. (2022). Collaborative initiatives in libraries: Fostering innovation through partnerships. *International Journal of Library Cooperation*, 19(3), 58-74.
- Ajiboye, F., & Folorunsho, D. (2022). Virtual classrooms and the evolving role of libraries in online education. *Library and Educational Technology Journal*, 16(2), 120-135.
- Alabi, O., & Ojo, E. (2020). Mobile library services and their impact on rural populations in Nigeria. *Journal of Library and Information Science*, 28(3), 120-134.
- Ambrose, S. E., & Okpala, H. N. (2015). Use of e-library resources by postgraduate students: A case study of National Open University of Nigeria, Benin Study Centre. *Review of Information Science and Technology*, 1, 38-44.
- Balogun, T., & Adeyemi, J. (2021). Educational development and library expansion in post-independence Nigeria. *International Journal of Educational Development*, 29(4), 223-236.
- Baro, E. E., & Zuokemefa, T. (2011). Information literacy programmes in Nigeria: A survey of 36 university libraries. *New Library World*, 112(11/12), 549-565. <https://doi.org/10.1108/03074801111190428>
- Bello, N. (2015). Nigerian libraries in pre-colonial era. *Postprint Journal Articles*. Retrieved from <http://hdl.handle.net/123456789/6047>
- Chukwu, E., & Alabi, O. (2022). Artificial intelligence in library operations: Investment and skilled personnel. *Journal of Library Technology and Development*, 21(2), 105-118.
- Dar, S. A. (2019). Mobile library initiatives: A new way to revitalize the academic library settings. *Library Hi Tech News*, 36(5), 15-21. <https://doi.org/10.1108/lhtn-05-2019-0032>

- Ekpo, E. (2020). Advancing global educational goals through accessible and affordable library services. *International Journal of Educational Development*, 9(3), 200-215.
- Enamudu, J. O., Akannam, S. A., Odunsi, C. O., & Olatunji, S. O. (2021). Impact of public library services on educational transformation in Nigeria: Case study of Oyo State Library Board. *Library Philosophy and Practice*. Retrieved from <https://digitalcommons.unl.edu/libphilprac/6064>
- Eno, C., & Ibekwe, N. (2022). Collaborative approaches in Nigerian librarianship: Partnerships for sustainable growth. *Journal of Library Partnerships*, 6(4), 30-50.
- Hines-Martin, V., Cox, F. M., & Cunningham, H. R. (2020). Library collaborations and community partnerships. In *Routledge eBooks*. Informa. <https://doi.org/10.4324/9780429439261>
- Horsfall, M. N. (2023). Librarians as change agents for sustainable library and information service delivery in a digital society. *Information Impact: Journal of Information and Knowledge Management*, 14(1), 113-125. <https://doi.org/10.4314/ijikm.v14i1.7>
- Hotsonyame, G. N. (2023). Significance of academic libraries in recent times: A review of articles. *Library Philosophy and Practice (e-journal)*. University of Nebraska - Lincoln. Retrieved from <https://digitalcommons.unl.edu/libphilprac/>
- Igbo, H. U., & Imo, N. T. (2020). Digital libraries and access to information in Nigerian federal universities: The impact of technology variables. *Journal of Information & Knowledge Management*, 19(02), 2050013. <https://doi.org/10.1142/s0219649220500136>
- Ikenwe, I. J., & Udem, O. K. (2022). Innovative digital transformation for dynamic information service sustainability in university libraries in Nigeria. *Folia Toruniensia*, 22, 67–86. <https://doi.org/10.12775/ft.2022.004>
- Iwe, J. I. (2003). Libraries and information in sustainable rural development in Nigeria. *Information Development*, 19(3), 169–177.
- Njoku, I. F. (2008). Information professionals in a globalized world: Information professionals in Nigeria: Optimism and innovation in the face of staggering inadequacies. *Bulletin of the American Society for Information Science and Technology*, 34(3), 40–42. <https://doi.org/10.1002/bult.2008.1720340313>
- Nwokocha, C. (2018). Funding challenges in Nigerian public libraries. *Library Finance Review*, 6(2), 98-112.

- Nworie, J. C., Ubochi, E. U., Iwuchukwu, C., & Njoku, C. C. (2023). Challenges and prospects of library and information services in academic libraries in Nigeria. *Library Philosophy and Practice (e-journal)*, 7630. Retrieved from <https://digitalcommons.unl.edu/libphilprac/7630>
- Ogunsola, B. (2019). The growth of academic libraries in post-colonial Nigeria. *Journal of African Studies*, 15(2), 45-59.
- Okoro, B., & Madueke, P. (2023). The skills gap: Challenges in Nigerian library staff training and capacity building. *Journal of Modern Library Management*, 11(3), 40-56.
- Olayinka, F. (2020). The National Library and the growth of library services in Nigeria post-independence. *African Educational Journal*, 8(2), 22-30.
- Omeluzor, S. U., & Ogo, E. P. (2018). Role of Nigerian libraries for sustainable educational system, information literacy and national development. *Annals of Library and Information Studies*, 65(2), 122-127. Retrieved from <https://www.researchgate.net/publication/326839854>
- Omotoso, H., & Adekunle, F. (2018). The state of library infrastructure in Nigeria. *Nigerian Infrastructure Review*, 12(1), 57-74.
- Onwuka, E. O. (2016). History and types of libraries. In M. I. Anyaegbu (Ed.), *Use of library and information literacy for higher education*. Awka: Potential Books.
- Opele, J. K., & Adigun, T. A. (2023). The role of library education in Nigeria: Empowering information professionals for national development. *Review of Information Science and Technology (RIST)*, 9(1), 11-26.
- Oyegbami, T. (2019). Libraries and educational evolution in Nigeria: Historical and contemporary perspectives. *Nigerian Library Review*, 15(4), 100–118.
- Richard Heeks, R. (2022). Digital inequality beyond the digital divide: Conceptualizing adverse digital incorporation in the global South. *Information Technology for Development*, 28(4), 688-704. <https://doi.org/10.1080/02681102.2022.2068492>
- Roh, Y., Heo, G., & Whang, S. E. (2019). A survey on data collection for machine learning: A big data - AI integration perspective. *IEEE Transactions on Knowledge and Data Engineering*, 33(4), 1–1.

Sobalaje, A. J., & Ogunmodede, T. A. (2015). Roles of academic library in the national and economic development of Nigeria. *Greener Journal of Social Sciences*, 5(2), 036–041.
<https://doi.org/10.15580/gjss.2015.2.281114401>

Tayo, O., Thompson, R., & Thompson, E. (2016). Impact of the digital divide on computer use and internet access on the poor in Nigeria. *Journal of Education and Learning*, 5((1) 1-6.