International Journal of Knowledge Dissemination (IJKD)
April 2024, Volume 5, No 1, PP 55-65
Journal home page: https://ijkd.uniabuja.edu.ng/
https://doi.org/10.70118/ijkd.0202405010.6

Exploring the Integration of Artificial Intelligence in Nigeria Library Services

Hassana Ibrahim[1] and Angela Ebele Okpala[2]

[1]National Open University of Nigeria (NOUN). hibrahim@noun.edu.ng
[2]National Open University of Nigeria (NOUN). aokpala@noun.edu.ng

Citation
Ibrahim, H. & Okpala, A. E. (2024). Exploring the Integration of Artificial Intelligence in Nigeria Library Services. *International Journal of Knowledge Dissemination*, 5(1), 55-65. https://doi.org/10.70118/ijkd.0202405010.6

Abstract

Artificial intelligence is increasingly being integrated into library services. This paper explores the integration of Artificial Intelligence (AI) in Nigeria's library services. It highlights the use of AI for enhancing information retrieval, automating routine tasks, and personalizing user experiences. The paper was based on chronological review of some literatures, current initiatives and provides insights into the evolving landscape of AI in Library Services. while emphasizing the potential for improved efficiency, accessibility and user satisfactions. Sufficient focus is on how AI technologies including machine learning and natural language processing are reshaping the organisation and accessibility of Library resources. It further discusses the potential benefits of AI in cataloguing, recommendation systems, and user engagement. The findings contribute to understanding how libraries can strategically leverage AI to meet the evolving needs of patrons in the digital age. Additionally, it addresses challenges that hinge on data quality and the need for digital literacy. The paper concluded that the integration of artificial intelligence (AI) in libraries represents a significant opportunity to modernize and enhance library services in Nigeria and beyond. The paper recommended library management should invest in training their staff to understand and utilize AI technologies effectively. This includes providing workshops, seminars, and online courses on AI fundamentals and specific AI applications relevant to library services.

Keywords: Artificial intelligence, Digital Literacy, Digital services, Library services

ISSN: Print 2714-4356 / Online 2714-4364
Published by Samuel Ogbemudia Library, University of Abuja, Nigeria

Introduction

Artificial Intelligence (AI) has emerged as a transformative force across various sectors worldwide, revolutionizing processes, enhancing efficiency, and unlocking new possibilities. AI already influences many of our daily computing activities, with most modern computer systems and mobile phones incorporating AI features—often used unknowingly by users as part of intelligent machines.

The development of societies in recent times has been greatly facilitated by the growing demand for access to information, with libraries serving as prime sources in fulfilling this need. However, the rapid advancements in computer technology and software applications, particularly in AI, have triggered a paradigm shift in the format and dynamics of information and knowledge. This shift has also increased the demand for libraries to adopt and integrate these technologies.

As Subaveerapandiyan (2023) points out, libraries, as custodians of knowledge and information, are not exempt from this wave of innovation in Nigeria. Libraries play a crucial role in supporting education, research, and community development, and must therefore adapt to the evolving technological landscape to continue fulfilling these roles effectively.

The integration of AI has the potential to significantly modernize library services and empower users in unprecedented ways. Hussain (2023) explores the incorporation of Artificial Intelligence in library services, highlighting the opportunities, challenges, and implications of adopting AI-driven solutions. By leveraging AI, libraries can enhance traditional practices, automate routine tasks, and deliver personalized experiences tailored to the specific needs of their patrons. Additionally, AI enables libraries to process vast amounts of data, derive valuable insights, optimize resource allocation, and improve decision-making processes. Harry (2022) describes AI as the simulation of human intelligence by machines, especially computer systems, which involves learning (acquiring information and the rules for using it), reasoning (applying rules to reach conclusions), and self-correction. According to Jamila and Nour (2022), AI encompasses a broad spectrum of technologies and approaches, from basic rule-based systems to advanced machine learning algorithms capable of mimicking complex cognitive functions such as problem-solving, pattern recognition, natural language understanding, and decision-making. The goal of AI is to develop systems that can perform tasks typically requiring human intelligence, thereby enabling automation, improving efficiency, and offering solutions to previously unsolvable problems

Nigeria can boast of a rich tapestry of libraries, ranging from academic institutions to public and special libraries, serving diverse needs across urban and rural areas. Integrating AI technologies presents a compelling opportunity for Nigerian libraries to enhance their offerings, improve accessibility, and streamline operations. According to Gujral et al. (2020), AI has apparently taken over several businesses. The use of artificial intelligence in virtual reference services is thought to offer libraries a new online service paradigm. Some of the legitimate innovations that librarians are continually utilising to engage and improve services for their consumers include virtual realities, which help users become more information literate

Isaiah and Juliet (2020) asserted that AI already touches many of our daily computing activities, most of the computer systems and mobile phones being developed today have artificial intelligence features and we have probably used them not knowing that they are

intelligent machines. Examples of Artificial intelligence in computers are speech recognition, natural language processing, self-driving or autonomous cars, machine learning, deep learning and robotics. Artificial intelligence works based on perceptual recognition unlike human beings that operate on deep cognition. The power and advantage of AI lies in the fact that computers can recognise patterns efficiently at a scale and speed that human beings cannot

Application of artificial intelligence in library system encompasses descriptive cataloguing, subject indexing, reference services, technical services, shelf reading, collection development, information retrieval system etc. The integration of artificial intelligence in Nigeria's library services represents a transformative opportunity to advance information access, foster innovation, and empower communities. By embracing AI technologies responsibly and proactively addressing associated challenges, Nigerian libraries can continue to evolve as vibrant hubs of knowledge and learning in the digital age.

Key areas of focus in this exploration include:

- **AI- powered information Retrieval:** AI algorithms can enhance search capabilities within library catalogues, enabling users to discover relevant resources more efficiently. Natural Language Processing (NLP) techniques facilitate semantic search, allowing users to pose queries in everyday language and receive accurate results
- **Personalized Recommendations:** By analysing user behaviour and preferences, AI can generate personalized recommendations for books, articles, or other resources, thereby enhancing the user experience and promoting exploration of diverse content.
- **Virtual assistants and Chatbot**: AI-driven virtual assistants and chatbots can provide real-time support to library patrons, answering queries, assisting with research, and offering guidance on library services, operating hours, and resources.
- **Digitization and digital preservation:** AI technologies facilitate the digitization of library collections, enabling broader access to historical documents, manuscripts, and rare materials. Additionally, AI-powered tools aid in the preservation and restoration of digital assets, ensuring long-term accessibility and usability.
- **Data Analytics for Decision making:** AI enables libraries to analyse usage patterns, user demographics, and resource popularity, empowering administrators to make data-driven decisions regarding collection development, resource allocation, and service enhancements.
- **Addressing Language and Literacy Barriers:** AI-driven language translation tools can bridge language barriers, facilitating access to resources in multiple languages and promoting literacy and inclusivity within diverse communities

Like in many other fields as mentioned above, artificial intelligence (AI) may assist libraries in updating and expanding their services and in promoting their relevance in the contemporary digital environment. According to Ex LIBRIS (nd), libraries can utilise the practical benefits of artificial intelligence for their own goals, including streamlining workflows, enhancing operational efficiency, and creating new services.

Concept of Artificial Intelligence in Nigeria Library Services

The concept of artificial intelligence in Nigeria's library services encompasses a range of applications aimed at enhancing information access, user experiences, and operational efficiency. By embracing AI technologies responsibly and strategically, Nigerian libraries can evolve into dynamic hubs of knowledge and innovation, serving the diverse needs of their communities effectively. Artificial Intelligence is gradually being integrated into library services in Nigeria, particularly in academic libraries and this revolves around leveraging advanced technologies to enhance various aspects of library operations and resource management. According to Moustapha & Yusuf (2023) stated that AI can also be used to develop programs for efficient reference services, good textbook scanning, and appropriate subject categories. Therefore, the integration of AI in Nigeria libraries will allow better processing of information and, at the same time, better search for information, which will excite. Both library staff and users as there will be easier and faster access to information

By conceptualizing and following the development of AI. Yusuf et al. evaluated the implementation of artificial intelligence for efficient library services in Nigerian academic libraries. The study confirmed the advantages of using AI for library tasks. for example, the University of Lagos has introduced the use of artificial intelligence in some of their library services and operations and research indicates that Delta State University of Technology Ozoro, has also introduced AI technologies like security scanning devices at the entrance and the exit of the University Library.

Review of literature of artificial intelligences application in libraries

Some authors have studied and reviewed the application of artificial intelligence in libraries. Ferguson (1997) conducted a workshop on AI in Digital Libraries as part of the International Joint Conference on Artificial Intelligence (IJCAI). The workshop explored how AI techniques could address challenges in building digital libraries. The topics covered included information discovery and retrieval, user interface design, classification and indexing, and architectural designs. The workshop featured papers that presented various AI approaches, such as preference logic, natural language processing, machine learning, and multi-agent systems. The event facilitated knowledge sharing and discussion among participants, and plans were made to publish expanded versions of selected papers in a special International Journal on Digital Libraries special issue.

The author, Alberico (2011), predicts the impact of expert systems and artificial intelligence on libraries over the next ten years by considering five areas: knowledge media, knowledge industries, knowledge institutions, modes of discourse, and implications. The predictions are based on existing technology, but the author acknowledges that technological advances may occur in the future. The author references the publication "Libraries of the Future" as a relevant and on-target prediction for the future of libraries and artificial intelligence.

The paper by Massis (2018) discusses the arrival of artificial intelligence in the library and the literature review and commentary on the topic by professionals, researchers, and practitioners. The potential implications of AI in libraries are seen as both exciting and disruptive, with some concerns that the technology could corrupt the library's mission and affect research and reading. However, the author also acknowledges that AI's eventual acceptance and incorporation could positively enhance library services, which are currently only being examined and considered.

Yuan (2021) addresses the effect of artificial intelligence (AI) on libraries in his article. Technology advancements have made AI a key research priority worldwide, and many nations plan to incorporate AI into their national strategies. The author examines how AI influences innovation and technology integration in libraries and suggests how AI might be used there for resource creation, information services, and librarian development. According to the author, research on technological innovation and library development will advance significantly due to the path libraries take in the AI era.

Nugroho et al. (2023) conducted a study analysing the correlation between artificial intelligence (AI) and libraries and the shift in research trends during the COVID-19 pandemic. The researchers gathered secondary data from Scopus using keywords such as "AI," "library," and "repository" from 1993 to 2022. The findings revealed that keywords like "human," "deep learning," "machine learning," "surveys," and "open-source software" became popular in 2020 and closely related to digital libraries. The annual scientific production of papers also significantly increased in 2021. The study highlights the importance of AI implementation in libraries to support repositories during the pandemic. It suggests that librarians can maximise AI-based repository services and create policies using AI. The research identifies themes and knowledge gaps in AI in library repositories, providing insights for researchers, academicians, and practitioners to conduct further research in this area.

Adetayo (2023) states that artificial intelligence (AI) chatbots, such as ChatGPT, have become valuable tools for academic libraries. They provide rapid and accurate responses to user inquiries, offering convenience and accessibility outside traditional library hours. ChatGPT's advanced language processing capabilities enable it to generate human-like and contextually relevant responses, making it an effective virtual assistant. Academic libraries utilise ChatGPT for reference services, selective dissemination of information, and collection development. However, challenges exist, including the potential loss of library employment, misuse of the technology, inaccurate query responses, and limited comprehension compared to human librarians. Despite these challenges, ChatGPT has the potential to enhance library services by automating routine tasks and freeing up librarians' time for more complex assistance, ultimately improving the quality and efficiency of academic library services.

Application of Artificial Intelligence in Nigerian Libraries

The use of artificial intelligence in Nigerian libraries has grown significantly. This progress is evident in the implementation of expert systems for reference services, the introduction of book-reading and shelf-reading robots, and the use of virtual reality for immersive learning, among other advancements. While some may view the integration of AI in libraries as potentially distancing librarians from their users, it is more likely to empower libraries to achieve more rather than replace the roles of librarians. The adoption of artificial intelligence in Nigerian libraries has expanded considerably. This advancement is reflected in the deployment of expert systems for reference services, the use of book-reading and shelf-reading robots, and the incorporation of virtual reality for immersive learning, among other innovations. Although some may fear that AI could distance librarians from their patrons, it is more likely to enhance the capabilities of libraries, enabling them to accomplish more rather than replacing the essential roles of librarians.

Artificial intelligence is a cutting-edge technology with significant potential and promising applications in libraries. This makes it essential to explore both its advantages and

disadvantages to fully harness its benefits for innovative and efficient service delivery. As Corke (2013) asserted, AI systems, including robots, will be pivotal technologies in this century. In the context of libraries, AI systems offer the advantage of being less prone to errors compared to humans and can operate continuously, 24/7, allowing librarians to focus on other tasks. According to Asemi and Asemi (2018), the application of artificial intelligence has become increasingly valuable across various fields and is advancing rapidly with the development of smartphones, smart homes, the Internet of Things (IoT), and the Internet of Vehicles (IoV).

Artificial Intelligence systems are designed to guide library users to the most relevant information sources within the library system, effectively addressing their reference questions. The rise of digital reference resources and services in libraries has led to more extensive development of AI systems for reference services than for any other library service or section (Chemulwo & Sirorei, 2020). These systems enable users to access information resources and receive answers to their reference queries in real-time, even in the absence of a librarian. Additionally, AI has practical applications in subject indexing, a task that typically requires a librarian's technical expertise and intellectual judgment to analyse, evaluate, and assign appropriate index terms or keywords to a document. Any computer system capable of performing this task can be considered intelligent. An Expert System, for example, can be developed to manage subject indexing or provide reference services.

AI tools can be utilized to select suppliers or book dealers for library collections. By leveraging data from previous successful transactions involving specific types of publications, an intelligent system can be developed to identify suitable vendors or book sellers. These tools are particularly valuable for acquiring less common materials, such as conference proceedings, publications in foreign languages or from international sources, and specialized technical reports. Research has demonstrated that AI systems have been implemented within the library field to assist with the selection process. An innovative example of this technology is The Monograph Selection Advisor, which simulates the item-by-item decision-making process performed by subject bibliographers when selecting monographic resources. For the AI system to be effective, its knowledge base must be comprehensive, and its interface must be user-friendly.

The application of AI has significantly enhanced the provision and utilization of library information resources, supporting the achievement of library goals and objectives. To remain relevant, librarians must adopt innovative approaches, as AI has introduced a wide range of applications in libraries, from book filing to book delivery. AI has also opened new possibilities, such as integrating physical library resources with electronic materials and linking video assistance to physical information resources and objects.

Integration of Artificial Intelligence in Nigerian Libraries

The integration of Artificial Intelligence (AI) into library services in Nigeria represents a significant trend aimed at modernizing and enhancing the efficiency of library operations. Adopting AI is becoming essential for Nigerian libraries to stay aligned with global advancements and address the evolving needs of users. By improving efficiency, user experience, accessibility, and research support, AI has the potential to transform Nigerian libraries, making them more effective and relevant in the digital era. As noted by Alala et al. (2024), the primary goal of AI in libraries is to develop computer systems or machines

capable of thinking, behaving, and performing at levels comparable to human intellect. This advancement carries profound implications for the field of librarianship.

The integration of Artificial Intelligence (AI) into Nigerian library services is rapidly advancing, offering significant potential to transform library operations and enhance user experiences. As AI technology continues to develop, it promises to further improve the efficiency, accessibility, and overall effectiveness of library services in Nigeria. Currently, AI is garnering considerable attention for its potential to revolutionize various aspects of human Endeavor, including the library and information science sector. Viewed as a groundbreaking technology, AI is poised to introduce new opportunities for growth and fundamentally change how work is conducted across organizations, industries, and libraries (Duggal, 2023).

Integrating AI aligns Nigerian libraries with global best practices and technological advancements, and this increases the competitiveness of Nigerian educational and research institutions on an international level, attracting more partnerships and funding opportunities. To successfully integrate AI into Nigerian library services, a phased and strategic approach is essential such as Assessment and Planning, Investment in Technology and Infrastructure, Training and Capacity Building, collaborate with universities, research institutions, and international organization, and establish metrics to monitor the performance and impact of AI integration.

Benefits of Artificial Intelligence

Artificial intelligence (AI) offers a range of transformative benefits to libraries, significantly altering their operations, services, and resource management. AI enhances search and discovery processes, helping users quickly and accurately locate relevant information. It also enables personalized recommendations, improving user experience and fostering greater engagement with library services. Automation of tasks such as cataloguing, metadata tagging, and circulation management allows librarians to concentrate on more strategic activities like research assistance and program development.

AI improves accessibility for patrons with disabilities by incorporating technologies such as text-to-speech and speech recognition, which make library resources more accessible to visually impaired or dyslexic users. Additionally, AI-driven predictive analytics can forecast demand for specific materials, ensuring that library collections remain relevant and up-to-date.

AI provides instant assistance to users by answering common questions, offering research guidance, and handling basic inquiries, even in the absence of librarians. It can also analyze large volumes of data to reveal insights into library usage patterns, user demographics, and resource popularity, which aids in strategic planning, resource allocation, and service improvements.

Furthermore, AI technologies like optical character recognition (OCR) and image recognition support the digitization and preservation of rare or deteriorating materials, broadening access to collections and ensuring their long-term preservation. AI can also translate library resources into multiple languages, supporting diverse language communities and multicultural initiatives. Additionally, AI enhances security by detecting and preventing threats such as data breaches, identity theft, and fraudulent activities, using machine learning to identify suspicious behavior and safeguard sensitive patron information.

Overall, the integration of AI technologies into library operations enhances efficiency, accessibility, and user satisfaction, enriching the library experience for both patrons and staff.

Challenges of Artificial Intelligence in Nigerian Libraries

This paper examines various challenges associated with the implementation of AI technologies in libraries, including issues related to ICT skills, high initial costs, job displacement concerns, unreliable power supply, inadequate maintenance culture, and resistance to change. According to Idemudia & Makinde (2022), the application of AI in Nigerian libraries faces several technological, social, and economic hurdles. Key challenges include:

- **Privacy Concerns**, **Intellectual Freedom**: AI's data collection capabilities can threaten intellectual freedom. Saved queries and search histories might be used against individuals, raising concerns about surveillance and misuse.
- **High Costs**: The significant cost of implementing AI technologies, often involving proprietary software, remains a major barrier. Investment in AI is not yet widespread in libraries, and there is a need for more dialogue and clarity among professionals about its value and cost-effectiveness.
- **Expertise and Training**: AI integration requires specialized knowledge in AI technologies, data analysis, and programming. Libraries may struggle to recruit and train staff with these skills. Collaborating with external experts or partnering with research institutions can help bridge these skill gaps.
- **Limited Customization**: AI systems often operate based on statistical models, which can limit their ability to provide personalized services. Balancing automation with personalized, user-centred approaches is a key challenge for libraries.

Overall, while AI has the potential to significantly enhance library services, addressing these challenges is crucial for successful implementation and ensuring that AI technologies are used effectively and ethically in Nigerian libraries.

Recommendations

Based on the exploration of artificial intelligence (AI) in library services in Nigeria, the following recommendations can be made.

1. **Invest in AI Education and Training:** Libraries should invest in training their staff to understand and utilize AI technologies effectively. This includes providing workshops, seminars, and online courses on AI fundamentals and specific AI applications relevant to library services.
2. **Promote Digital Literacy:** Libraries play a crucial role in promoting digital literacy among patrons, including AI literacy. Providing resources, workshops, and training on AI concepts and applications can empower patrons to make informed decisions and engage meaningfully with AI technologies.
3. **Prioritize Ethical Considerations:** Libraries must prioritize ethical considerations when implementing AI technologies, ensuring transparency, fairness, accountability,

and user privacy. Establishing clear policies and guidelines for AI usage and data handling is essential to build trust with patrons and stakeholders.

4. **Engage Library Users:** Libraries should engage with their users to understand their needs, preferences, and concerns regarding AI technologies. User feedback and input are valuable for designing AI solutions that meet user expectations and enhance user experiences.
5. **Secure Funding AI Initiatives:** Libraries should seek funding opportunities to support AI initiatives, including grants, sponsorships, and partnerships with government agencies, foundations, and private organizations. Securing funding enables libraries to invest in AI infrastructure, resources, and staff training.

Conclusion

The integration of artificial intelligence (AI) in libraries represents a significant opportunity to modernize and enhance library services in Nigeria and beyond. Through various applications such as information retrieval, personalized recommendations, virtual assistants, digitization, data analytics, and addressing language barriers, AI has the potential to revolutionize how libraries operate and serve their patrons.

References

Adetayo, A. J. (2023). Artificial intelligence chatbots in academic libraries: The rise of ChatGPT. *Library Hi Tech News, 40*(3), 18–21. https://doi.org/10.1108/LHTN-01-2023-0007

Alala, A. G., Uzoaru, G. C., & Odikwa, N. H. (2024). Advantages and challenges of implementing artificial intelligence in academic library services. *International Journal of Education Research and Scientific Development, 5*(1), 15.

Alberico, R. (2011). The future of expert systems and artificial intelligence technologies in libraries and information centres. In K. G. Saur (Ed.), *The future of expert systems and artificial intelligence technologies in libraries and information centres* (pp. 194–228). K. G. Saur. https://doi.org/10.1515/9783110977806.194

Asemi, A., & Asemi, A. (2018). Artificial intelligence (AI) application in library systems in Iran: A taxonomy study. *Library Philosophy and Practice (e-journal)*. Retrieved March 21, 2024, from http://digitalcommons.unl.edu/libphilprac/1840/

Chemulwo, M. J., & Sirorei, E. C. (2020). Managing and adapting library information services for future users: Applying AI in libraries. In *Managing and Adapting Library Information Services for Future Users* (2) (PDF). Available from https://www.researchgate.net/publication/372493233_Applications_of_Artificial_Intelligence_in_Library

Corke, P. (2013). *Robotics, vision and control: Fundamental algorithms in MATLAB*. Springer.

Duggal, N. (2023). What is artificial intelligence: Types, history, and future. Simplilearn. Retrieved from https://www.simplilearn.com/tutorials/artificial-intelligence-tutorial/what-is-artificial-intelligence

Ferguson, I. A. (1997). IJCAI-97 workshop on AI in digital libraries. *D-Lib Magazine*. Retrieved from https://www.dlib.org/dlib/september97/09clips.html

Idemudia, B. E., & Makinde, B. (2022). Artificial intelligence in libraries: Prospect and challenges for Nigerian academic libraries. *Communicate: Journal of Library and Information Science, 24*(2). https://www.cjolis.org/index.php/cjolis/article/view/11

Irizarry-Nones, A., Palepu, A., & Wallace, M. (2017). Artificial intelligence (AI). www.bu.edu/lernet/artemis/years/2017/projects/FinalPresenations/A.I.%20Presentation.pdf

Hussain, A. (2023), "Use of artificial intelligence in the library services: prospects and challenges", *Library Hi Tech News,* 40 (2), 15-17. https://doi.org/10.1108/LHTN-11-2022-0125

Isaiah, M. O., & Juliet, C. A. (2020). Artificial intelligence in libraries. https://www.researchgate.net/publication/338337072_Artificial_intelligence_in_libraries

Jamila, A., & Nour, E. O. (2022). The role of artificial intelligence abilities in library services. *The International Journal of Information Technology*. https://doi.org/10.34028/iajit/19/3A/16

Massis, B. (2018). Artificial intelligence arrives in the library. *Information and Learning Science, 119*(7/8), 456–459. https://doi.org/10.1108/ILS-02-2018-0011

Moustapha, A. A., & Yusuf, I. O. (2023). Adoption of artificial intelligence to improve library service delivery in academic libraries in Kwara State, Nigeria. *Library Philosophy and Practice (e-journal)*, 7915. https://digitalcommons.unl.edu/libphilprac/7915

Nugroho, P. A., Anna, N. E. V., & Ismail, N. (2023). The shift in research trends related to artificial intelligence in library repositories during the coronavirus pandemic. *Library Hi Tech, ahead-of-print*. https://doi.org/10.1108/LHT-07-2022-0326

Oyetola, S. O., Oladokun, B. D., Maxwell, S., & Akor, S. O. (2023). Artificial intelligence in the library: Potential implications for library and information services in 21st-century Nigeria. *Social Science Research Network*. https://www.researchgate.net/publication/369681234_Artificial_intelligence_in_the_library_Potential_implications_to_library_and_information_services_in_the_21st_Century_Nigeria

Subaveerapandiyan, A. (2023). Application of artificial intelligence (AI) in libraries and its impacts on library operations reviews.

Yuan, X. (2021). Research on the development of library in the era of artificial intelligence. In *16th International Conference on Computer Science & Education (ICCSE)* (pp. 1052–1057). https://doi.org/10.1109/ICCSE51940.2021.9569594

Yusuf, T. A., Adebayo, O., Bello, L., & Kayode, J. (2022). Adoption of artificial intelligence for effective library services delivery in academic libraries in Nigeria. *Library Philosophy and Practice (e-journal)*, 2022:6804. https://digitalcommons.unl.edu/libphilprac/6804