

Impact of Library Websites and Automated Library Resources on Services Delivery in Academic Libraries in Akwa Ibom State, Nigeria

Godwin M. Nna-Etuk*¹, Ekemini Samuel Effiong², Enoabsasi Nsikan Emmanuel³

^{1,3}University of Uyo Library, University of Uyo, Uyo Nigeria

²Science Resource Centre, University of Uyo, Uyo Nigeria

*Email: nnaetuk@gmail.com

Abstract. *The study assessed the impact of library websites and automated library resources on service delivery in academic libraries in Akwa Ibom State. Two research questions and two research hypotheses were formulated to guide the study. The research design adopted for the study was descriptive research design. The sample size of 45 Librarians from 3 academic libraries in the study area involved in the study. A structural questionnaire tagged Library Websites and Automated Library Resources Questionnaire (LWALRQ) was designed by the researchers and used for data collection. The instrument was vetted by two experts in Department of Education Foundation University of Uyo based on the variables under study. The data collected was analyzed using mean statistics to answer research questions and t-test to test the hypotheses. The result reveals that a significant influence exist between each of the variables and service delivery in academic libraries in Akwa Ibom State. It concludes that library websites and automated library resources have significantly influenced library service delivery in academic libraries. Hence, it is recommended among other things that management of academic libraries in Akwa Ibom State should ensure they maintain the library websites for effective service delivery.*

Keywords: Library, Automation, Service

Introduction

The hallmark of the 21st century education is the adoption of technological innovations in education system globally. The application of information and communication technologies in the area of education have transformed all aspects of teaching, learning and research especially in higher education in both developed and developing countries across the globe. This has also brought about unprecedented access to information in content data and connection around the world. Technology has advanced the world's activities in a million ways and its advancement in the last two decades has brought a plethora of technological devices to the information environment that are absolutely impossible to ignore (Udokon, 2024).

The library is a service-oriented organization that facilitates the discovery and creation of new knowledge. According to Katz (2018), academic library is a collection of books, periodicals, and other materials organized and maintained by an institution of higher education to support teaching, learning, and research. Lippincott (2016), opined that a university library is an information hub that supports the research, teaching, and learning needs of the academic community by offering access to scholarly resources, innovative services, and collaborative environments. In today's rapidly evolving educational landscape, institutions are increasingly recognizing the significance of innovations in improving service delivery and organizational performance. Academic libraries, as integral components of tertiary education are not exempted from this paradigm shift. Academic libraries are

transforming from traditional repositories of information to dynamic hubs of knowledge dissemination, and the adoption of innovative strategies is becoming essential to meet the ever-changing needs of students and members of the academic community through library website and automated library resource.

Library websites have undergone significant innovations in recent years to adapt to the changing needs of users and advancements in technology. These innovations aim at enhancing the user experience, improve access to resources, and promote engagement within the library community. According to Chowdhury and Chowdhury (2017), a library website is a digital gateway that provides access to information resources, services, and tools offered by the library as well as, enhancing communication and interaction between users and the library. In the words of Dempsey (2019), a library website is an online platform that extends the physical library into the digital realm, offering users a convenient means to discover, access, and engage with library resources and services. According to Smallwood and Becnel (2017), a library website is a virtual space that acts as a central hub, connecting patrons to library resources, services, and information through a user-friendly interface. Library website could offer interactive features, such as virtual tours, multimedia exhibits, and user-friendly search interfaces, increasing patron engagement.

Automated library resources refer to technological tools and systems that streamline and enhance various aspects of library operations and services. These technological tools use to perform tasks that were traditionally manual, resulting in increased efficiency, improved user experience, and more effective resource management within the library environment. According to Kiong and Noorhidawati (2018), automated library resources are technological tools and systems that use automation to facilitate the acquisition, cataloging, circulation, and management of library materials and services. In the words of Chowdhury and Chowdhury (2017), automated library resources are electronic systems and devices designed to streamline library operations, enhance resource access, and improve user services through the use of technology. Stephen (2018), assert automated library resources as technological solutions that enable the efficient management of library functions, including circulation, cataloging, inventory control, and user interactions. Automated library resources are digital tools and systems that leverage automation to improve the discovery, access, and utilization of library collections and services. In the view of Shirwaiker and Theng (2021), automated library resources are technology based solutions that mechanize library tasks, making them more efficient, accurate, and user-friendly.

Equally, service delivery in libraries refers to the process by which library resources, programs, and assistance are provided to patrons in a timely, efficient, and user-centric manner. This term signifies the systematic provision of library services such as book lending, reference assistance, and computer access to fulfill the information needs of library users, Johnson (2020). Service delivery encompasses the range of services offered by libraries, including interlibrary loans, electronic databases, and research support, with the goal of supporting users, academic and personal pursuits. Hernandez (2021) noted that service delivery in libraries ensures that users can access resources promptly. Thus, academic Libraries engage in service delivery by organizing events, workshops, and community programs that align with patrons' interests and learning needs, fostering a vibrant learning environment Peterson (2017). According to Turner (2018) libraries continually assessed their service delivery through user feedback and usage data, which enable them to refine their services, offering, adapt to evolving needs, and maintain high levels of user satisfaction. The need for library website and automated library resources has become widely accepted as technological necessity for service delivery. Based on the above background, this study was carried out to assessed the impact of library websites and automated library resources on service delivery in academic libraries in Akwa Ibom State, Nigeria.

Statement of Problem

Today most of the academic libraries globally include those in Akwa Ibom State employed innovative technologies to enhance the accessibility of both print and e-resources in academic environment for possible accessibility and utilization, thus facilitate learning and research processess.

Academic libraries are the heart of the academic community providing varied information resources to support teaching, learning and research. The advent of information technology, the frontiers of information resources has extended beyond print to include electronic information resources with the library websites inclusive. Libraries in the world today including academic libraries in Akwa Ibom State are in a bit to live up to their responsibility as partners in the development of the academic system and successful educational outcomes as well as striving to remain relevant in the scheme of things by providing library websites and automated library resources in order that library users can have access to varied information resources online at anytime without restriction.

Besides, academic libraries in Akwa Ibom State have in line with global trends in striving to provide library websites as well as automated their information resources in most basic areas. However, the provision of the library websites and automated library resources are not fully exploit or aware of this development in academic libraries in Akwa Ibom State. One wonder whether the reason may be because of individual inability or poor digital skills by the library users and library staff. This therefore, raises questions: whether library websites and automated library resources can enhance academic libraries in Akwa Ibom State to provide quality services.

Objective of the Study

1. To examine the influence of library websites on services delivery in academic libraries in Akwa Ibom State.
2. To examine the influence of automated library resources on services delivery in academic libraries in Akwa Ibom State.

Research Questions

1. What is the influence of library websites on service delivery?
2. What is the influence of automated library resources on service delivery?

Research Hypotheses

1. There is no significant influence of library websites on service delivery in academic libraries in Akwa Ibom State.
2. There is no significant influence of automated library resources on service delivery.

Literature Review

Library Websites and Service Delivery

Library websites is an innovative medium through which libraries interact with its users and services. It serves as an information hub for promotion of library services. According to Emezio (2018), the Library website serves as a window through which patrons can quickly view the library and have a feel of its nature and structure. It provides a gateway to online databases and other electronic resources such as these and dissertation, inaugural lectures, etc. it also provides updates on activities and events of the academic libraries.

Library websites is a digital platform created and maintained by a library to provide access to its resources, services, and information online. Library websites serve as a virtual gateway to the library's collections, databases, and services. Barker and Browning (2018) affirmed library website as an online portal that connects users to a wide range of library resources, including catalogs, databases, e-books, and other digital services. According to Calhoun (2020) a library website is a digital platform that offers users access to the library's collections, resources, and services through the internet. It serves as a primary means of communication and interaction between the library and its patrons. A library website is a web-based interface that provides users with a convenient and accessible way to search, browse, and utilize the library's materials, including books, journals, and digital content (Tsakonas, *et al* 2021). According to Calhoun (2020). Library website is a digital platform that facilitates user interaction with the library's physical and electronic collections, as well as offering access to information, research assistance, and library events. A library website is an

online environment that extends the library's reach beyond its physical walls, providing a virtual space for patrons to explore, search, and access library resources (Chowdhury and Chowdhury 2017). They also define a library website as the online presence of a library, offering a range of information and services, such as access to the library catalog, digital resources, research guides, and contact information. Li (2019) views library website as a digital gateway that connects users to the library's collection and services, facilitating information retrieval, research, and learning.

Automated Library Resources

Automated library resources refer to the collection of tools, systems, and technologies that libraries use to automate various tasks that enhance the management to organize for possible accessibility of library resources and services. Automated library resources encompass a range of technologies and software applications that facilitate the acquisition, cataloging, circulation, and retrieval of library materials, enabling efficient and user-friendly access to library collections (Rubin 2020). Similarly, Connaway, *et al* (2017) noted that automated library resources are technology-driven tools and systems used to manage and deliver library services, such as integrated library systems, electronic databases, and online catalogs, aiming to streamline operations and improve user experiences. According to Chowdhury and Chowdhury (2017) automated library resources refer to the digital solutions and applications that help libraries automate repetitive tasks like cataloging, circulation, and acquisitions, enabling librarians to focus on higher-value activities. Also, Lancaster (2023) noted that automated library resources encompass the use of computer-based systems, software, and electronic databases to efficiently manage, search, and retrieve library collections, making resources more readily accessible to library users.

Taylor (2016) defines automated library resources as digital tools, software, and hardware that support the automation of library processes, such as cataloging, circulation, and interlibrary loan, leading to improved resource discovery and accessibility. Automated library resources also, are technology solutions that enable the acquisition, organization, and dissemination of library materials, including computerized library management systems, digital repositories, and online databases, enhancing library operations and services. Agarwal (2020) noted that automated library resources encompass digital applications and systems designed to improve the efficiency of library workflows, making it easier for users to discover, access, and use library materials and services. Riedel (2023) noted that automated library resources refer to the suite of technological solutions that enable libraries to automate cataloging, circulation, and resource sharing functions, contributing to a more efficient and responsive library environment.

To these, Zeithaml, *et al* (2016) argued that service delivery involves the efficient and effective execution of processes, methods, and systems to meet customer requirements and deliver valued services. according to Fitzsimmons and Fitzsimmons (2023) and Johnston (2018) service delivery refers to activities, processes, and interactions that take place when a service is provided to customers, encompassing all stages from initial contact to post-service follow-up. they also defined as the process of making available, providing and ensuring access to services that meet the identified needs and expectations of customers. Service delivery involves the effective execution of all activities required to provide a service to customers, including planning, implementation, monitoring, and evaluation. Also, World Health Organization (WHO), (2017) defines service delivery as the process of providing service that are responsive to the needs and preferences of the beneficiaries, ensuring quality, accessibility, and affordability. service delivery is the provision of services to end-users or clients, with a focus on meeting their requirements, delivering value, and maintaining customer satisfaction (Magal and Word, 2021)

Materials and Method

The study was carried out in Akwa Ibom State, in the South South region of Nigeria, one of the oil states with several higher institutions both private and Government owns. However, the study was carried out in three federal higher Institutions. The researchers adopted the descriptive research design. The main purpose of this design was because the study is descriptive in nature, hence, a

systematic descriptive of the impact library resources on service delivery in academic libraries in Akwa Ibom State. The study was conducted in three academic libraries, these include: University of Uyo, established in 1991 by Federal Government of Nigeria, Federal University of Technology Ikot Abasi, established in 2022 and Federal Polytechnic Ukana, Essien Udim, established in 2014 all located in Akwa Ibom State. The three academic libraries constituted the study area. the sample size of the study constituted of 45 professional librarians, 26 from University of Uyo, 10 Federal University of Technology, Ikot Abasi and 9 from Federal Polytechnic, Ukana. The instrument known as Library Websites and Automated Library Resources Questionnaire (LWALRQ) was used for data collection. The instrument pass through face and content validation using two (2) experts in the Department of Education Foundation, University of Uyo, Uyo. Combach Alpha Reliability Technique were used to measure the reliability of the instrument using 20 staff librarians from Akwa Ibom State University, Ikot Akpaden which were not part of the study. The test produced reliability coefficient of .71 and above. This proved that the instrument was reliable for the study. Mean and standard deviation was used to answer the research questions and t-test to test the hypothesis at .05 level of significance.

Results

Research Question One

What is the influence of library websites on service delivery academic libraries in Akwa Ibom State?

Table 1. Summary of mean and standard deviation of the influence of library websites on service delivery (n=45).

S/N	Library Website	SA	A	D	SD	\bar{x}	SD	Decision
1	Our library websites are rich in content	15	28	2	0	3.28	0.56	Agreed
2	Users use our library websites to check their needed information	19	17	5	4	3.13	0.94	Agreed
3	Our library websites ensure easy access to information resources	16	13	5	11	2.76	1.19	Agreed
4	We use library website to connects users to a wide range of library resources	22	7	14	2	3.09	1.00	Agreed
5	Our library website extends the physical library into the digital realm	18	10	8	9	2.82	1.17	Agreed
Cluster Mean						3.04	0.97	Agreed

The result in Table 1 shows the mean range for the response of the respondents on the influence of library websites on service delivery in academic libraries in Akwa Ibom State, for items 1,2,3, 4 and 5 are all above the cutoff mark of 2.50. This means that the respondents agreed that: they use library

websites, their library users uses library website, library websites ensure easy access to information resources, they use library website to connects users to a wide range of library resources and that their library website extends the physical library into the digital realm. The result in Table 4.1 also showed standard deviation scores of the respondents which ranged from 0.56 to 1.19 and since the standard deviation scores are small, it means that the spread of the scores is not far apart. The cluster mean of 3.04 for all the items indicates that there is influence of library websites on service delivery in academic libraries in Akwa Ibom State.

Research Question Two

What is the influence of automated library resources on service delivery in academic libraries in Akwa Ibom State?

Table 2. Summary of mean and standard deviation of the influence of automated library resources on service delivery (n=45).

S/N	Library Website	SA	A	D	SD	\bar{x}	SD	Decision
1	Our library operation are automated to enhances user's access.	9	22	8	6	2.76	0.93	Agreed
2	All circulation activities are automated for efficient service delivery	22	10	5	8	3.02	1.16	Agreed
3	The inventory are automated to enhance quick service delivery.	23	5	8	9	2.93	1.23	Agreed
4	Open and closed ended resources are automated for possible service delivery	20	4	10	11	2.73	1.27	Agreed
5	Acquisition process are Automated which leads to effective service delivery in our libraries	25	4	5	11	2.96	1.30	Agreed
Cluster Mean						2.88	1.18	Agreed

The result in Table 2 shows the mean range for the response of the respondents on the influence of automated library resources on service delivery in academic libraries in Akwa Ibom State. Items 11,12,13,14 and 15 are all above the cutoff mark of 2.50. This means that the respondents agreed that: their library operations are automated, circulation operations in their library are automated, inventory control is done electronically, acquisition process in their library is automated and that automation leads to effective service delivery in their library. The result in Table 4.2 also showed standard deviation scores of the respondents which ranged from 0.93 to 1.27 and since the standard deviation scores are small, it means that the spread of the scores is not far apart. The cluster mean of 2.88 for all the items indicates that there is influence of automated library resources on service delivery in academic libraries in Akwa Ibom State.

Testing of Hypotheses

Hypothesis One

There is no significant influence of library websites on service delivery in academic libraries in Akwa Ibom State.

Table 3. Result of related t t-test analysis of the influence of library websites on service delivery (n= 45).

	Variables	Mean	n	SD	t-cal	Sig.	Decision
Pair 1	Library Websites	3.02	45	0.58	6.60	0.01	Significant
	Service delivery	3.62	45	0.22			

*significant at $P < .05$; $df = 44$

The result in Table 3 shows the t-value of 6.60 and the corresponding probability level of significance of .01 alpha at 44 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. This implies that there is significant influence of library websites on service delivery in academic libraries Akwa Ibom State.

Hypothesis Two

There is no significant influence of automated library resources on service delivery in academic libraries in Akwa Ibom State.

Table 4. Result of related t t-test analysis of the influence of automated library resources on service delivery (n= 45).

	Variables	Mean	n	SD	t-cal	Sig.	Decision
Pair 1	Automated library resources	2.88	45	0.88	5.34	0.01	Significant
	Service delivery	3.62	45	0.22			

*significant at $P < .05$; $df = 44$

The result in Table 4 shows the t-value of 5.34 and the corresponding probability level of significance of .01 alpha at 44 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. This implies that there is significant influence of automated library resources on service delivery in academic libraries in Akwa Ibom State.

Discussion

Library Websites and Services Delivery

The result of data analysis on hypothesis one revealed that there is a significant influence of Library websites on the service delivery in academic libraries in Akwa Ibom State. This implies that Library websites have significantly increased services delivery. This means Library website improve library operations and service delivery. This finding is in agreement with the work of Barker, *et al* (2018), who work affirmed that Library website is an online portal that connect users to wide range of Library resources including catalogs, e-books, and other digital services. Again, according to Calhoun (2020), a library website is a digital platform that offers users access to the library collections, resources and services through the internet. Therefore, that library website is a platform that facilitate user interaction with the physical and electronic collection as well as offering access to information resources collected by the library. This implies that library websites in academic libraries really offer

users opportunities to varieties of physical and electronic information resources for their various academic engagement in academic environment.

Automated Library Resources and Service Delivery

The result of data analysis on hypothesis two revealed that there is a significant influence of automated library services on library service delivery in academic libraries in Akwa Ibom State. This affirmed that automated Library resources encompass a range of technologies and software applications that facilitate the organization, and retrieval of Library resources, and user-friendly access to library collection. In support of this findings, Rubin (2020), noted that automated Library resources is a technology driven tools and systems used to manage and delivery Library Services, such as integrated library system, as well as electronic databases including catalogs for users. Also, according to (Chowdhurg and Chowdhurg 2017), Automated Library resources refer to the digital application of technologies that help libraries automate repetitive tasks like catalogs, circulation, and acquisition, which enables Librarians to focus on higher-value-activities. Agarwal (2020) also opined that automated library resources encompasses digital application and systems designed to improve the efficiently of library workflows, making it easier for users to discover, access and use library materials and services. This confirmed the vital role played by the automated Library resources in information Service delivery in academic libraries in Akwa Ibom State.

Conclusion

This study demonstrates that library websites and automated library resources are significant factors for effective and efficient service delivery in academic libraries in Akwa Ibom State. Library websites play a crucial in service in academic libraries, it offers numerous benefits, including role access, timely information dissemination resource discovery and user engagement, particularly, it enabling users to interact with the library staff, request for services and provide feedback. It further highlighted how it afforded easy access to resources because of online catalogs and digital collections, convenient services, user engagement as well as accessibility of the resources at any time of the day as well as promoted users patronage of library services.

Recommendations

Based on the Findings and subsequent Conclusion, the following recommendations are made:

1. The library staff should be trained and retrained on the use of Information and Communication Technology (ICTS) for efficient service delivery.
2. The authorities in academic environment should ensure that maintenance is always carry out on the technology facilitates in the library for service delivery.
3. Library staff both professionals and para-professionals should be encourage to attend conferences and workshops to embrace themselves with new innovation in Information Technologies (ITs).
4. The users should be educating with proper knowledge of the use of Library websites for better utilization of both physical and digital contents in the library.

References

- Agarwal, A., & Seitz, P. (2020). Evolving models for automated library services. *International Journal of Information Management*, 27(3), 181-193.
- Barker, P., & Browning, M. (2018). *The library's role in the 21st century*. In *Evolving Knowledge in the Global Digital Age* (pp. 213-228). IGI Global.
- Calhoun, K. (2020). *Exploring digital libraries: Foundations, practice, prospects*. Facet Publishing.
- Chowdhury, G. G., & Chowdhury, S. (2017). *Organizing information: From the shelf to the web*. Facet Publishing.
- Connaway, L. S., Radford, M. L., & McNeill, D. (2017). Convenience and the college student: A study of library use. *Journal of Academic Librarianship*, 33(3), 327-345.

- Dempsey, L. (2019). The Library in the Digital Ecosystem. *Portal: Libraries and the Academy*, 9(3), 371-384.
- Emezue, N. (2018). Stepping up the ladder to meet user needs; Innovative library services and practices in Nigerian university of technology: library Philosophy and practice (e-journal). <https://digitalcommon.uni.edu/libphilprac/1767>.
- Fitzsimmons, J. A., & Fitzsimmons, M. J. (2023). *Service management: Operations, strategy, information technology* (8th ed.). McGraw-Hill Education.
- Hernandez, R. (2021). The evolution of service delivery in libraries. *Journal of Library Administration*, 52(3-4), 230-248.
- Johnson, R. (2020). Library service delivery: A conceptual framework. *The Australian Library Journal*, 64(4), 277-285.
- Johnston, R., & Clark, G. (2018). *Service operations management: Improving service delivery* (3rd ed.). Pearson Education.
- Katz, W. A. (2018). *Introduction to Reference Work*. McGraw-Hill.
- Kiong, T. T., & Noorhidawati, A. (2018). Reengineering Library Services: The Application of Total Quality Management in the Automated Library. *Information Development*, 24(4), 281-293.
- Lancaster, F. W. (2023). Indexing and Abstracting in Theory and Practice. *Libraries Unlimited*.
- Li, X. (2019). Usability of academic library websites: The assessment of interactive elements. *The Electronic Library*, 33(5), 898-911.
- Lippincott, J. K. (2016). *What We Know about the Libraries of 2020: Implications for Academic Libraries*. Association of College and Research Libraries.
- Magal, S. R., & Word, J. (2021). *Integrated business processes with ERP systems*. Wiley.
- Peterson, J. (2017). *Library programming for families with young children: A handbook of strategies and best practices*. American Library Association.
- Riedel, E. (2023). The impact of library automation on reference service. *Library Management*, 24(1/2), 57-65.
- Rubin, R. E. (2020). *Foundations of Library and Information Science*. Neal-Schuman Publishers.
- Shirwaiker, M., & Theng, Y. L. (2021). A Review of Library Chatbot Research: Applications, Trends, and Future Directions. *Aslib Journal of Information Management*, 73(1), 115-132.
- Smallwood, C., & Becnel, K. (2017). *Libraries and Social Media: Innovative Uses for Communication and Outreach*. Rowman & Littlefield.
- Smith, A. B. (2019). Organizational Innovation in Academic Libraries: *An Analysis of Perceived Benefits and Barriers*. *College & Research Libraries*, 76(1), 20-32.
- Stephens, R. G. (2018). Library Management Systems. In R. G. Stephens & S. S. Deliyannides (Eds.), *Library and Information Science: A Guide to Key Literature and Sources* (3rd ed., pp. 377-395). Libraries Unlimited.
- Taylor, A. G. (2016). Perceptions of automated library resources among library and information science professionals: *A study*. *Library Philosophy and Practice*, 2016.
- Turner, J. (2018). *Assessment of academic libraries: Strategies and practices*. Chandos Publishing. University Library, University of Lagos.
- Udo-Onon, T. N. (2024). Information technology tools and library skills in the 21st century; in Uduak U. Enang, Mercy E. Ukpanah & Mercy D. Ebong, *Rudiments of Library and Information science*, Uyo *NLA*, 157
- Vargo, S. L., & Lusch, R. F. (2018). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1-10.
- World Health Organization. (2017). *Handbook for national quality policy and strategy*.
- Young, S. W. H., & Abels, E. G. (2020). Digital Reference Service in the Virtual Library: Exploring Factors Influencing Digital Reference Service Success. *Information Research*, 15(4).
- Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2016). *Services marketing: Integrating customer focus across the firm*. McGraw-Hill.