ASSESSING LIBRARIANS' UTILISATION OF LIBRARY 3.0 FOR INFORMATION SERVICE DELIVERY IN PUBLIC UNIVERSITIES LIBRARIES IN KADUNA STATE

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Abstract

The study investigated librarians' utilisation of Library 3.0 for information service delivery in public university libraries in Kaduna State. The study was guided by three objectives, which were to ascertain the types of Library 3.0 technologies available in public university libraries in Kaduna State, to identify the information services provided in these libraries and the extent of utilization of library 3.0 for service delivery. Survey research design was adopted for the study. The total population consisted of one hundred and thirty-eight (138) academic librarians in public university libraries in Kaduna State. Total enumeration technique was employed. Questionnaire and observation checklist were the instruments used for data collection. Data were analysed using descriptive statistics. The findings revealed that Library 3.0 tools were moderately utilised, with high usage of basic digital platforms like OPAC and Google tools, but limited use of advanced tools like chatbots and Moodle. The finding also revealed that librarians provide services like reference, lending, and information literacy, but modern digital services like current awareness, selective dissemination of information (SDI), and AI-driven support are largely underutilised. Similarly, the study revealed the extent of librarians utilization of Library 3.0 which the outcome was not overwhelming as expected from the librarians. The study recommended among others that public university libraries should upgrade and diversify their services to include personalized, user-centered, and AI-enhanced services like SDI, chatbots, and mobile current awareness platforms, and institutions should organise regular, hands-on training programs for librarians, covering areas such as data management, AI tools, social media engagement, and collaborative platforms.

Keywords: Library 3.0, Information Service Delivery, Academic Librarians, Public University Libraries, Kaduna State

Introduction

University libraries play a vital role by supporting their teaching, learning, and research needs of students, lecturers, and researchers. The university library is often described as the heart or the nerve centre of the university because they are central to academic activities. Technological advancements have significantly impacted libraries, which must adapt to stay relevant. Today's users are tech-savvy and favour online services, leading them to seek alternatives. To meet changing information-seeking, libraries need to explore new service delivery methods. For university libraries to effectively play their role, they are expected to be committed to service by providing services ranging from pubic services, information literacy, collection services, and providing research, teaching and learning support for faculty, students, users with disability and off campus users (University of Toledo, 2024).

Today's academic library has witnessed a significant change in its operationality due to technological advancements, a change in the higher education model, and a rapid change in user needs and demands during the digital era (Bawack 2019; Reid, 2019). Although the mission of academic libraries remains the same, the means of sustaining and fulfilling it has changed during the digital era. The services of academic libraries have expanded as well as witnessed tremendous changes in the model of provision from the 20th century (Reid, 2019). However, the traditional services have remained relevant with changes only in their provision. The main drivers of these are the changes in higher education models, the current technological expansions, the continuous change in user needs, and the expectation of academic library services (Association of College and Research Libraries (ACRL) 2018a; Bawack 2019). This shift has seen the academic library redefining its services and reforming the ways and channels in which these services are delivered in order to retain its spot in the world of information and knowledge provision and management. And so, the traditional concept of users coming to the library for services is drastically changing to the library taking its services to users.

Library 3.0 refers to libraries using Web 3.0. The end result of Library 3.0 is collections that can be made readily available to library users regardless of their physical location. Library 3.0 is a

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virtual complement to physical public library spaces, and ideally will work seamlessly within established public library services and collections. With Library improvement, Libraries are trying to adopt Web 3.0 into their services through methods such as Resource Description and Access (RDA) tags, metadata and other semantic web developments. The semantic web has changed the face of the Internet, and will continue to change and develop the way libraries conduct their online services such as OPACs and federated searching (Mi and Nesta, 2017). Library 3.0 must lead rather than follow and it must innovate, rather than copy. Librarians must improve as well. They must know how to deal with mobile technology, social media, dynamic web, widgets and filtering. Librarians working in Library 3.0 environment are called Librarians 3.0. Library 3.0 is more than a building; it is a new philosophy of service and engagement for our community and it will be a place to interact; a place to innovate; a place to inspire (Vacek, 2018).

The utilisation of library 3.0 technology in university libraries can enhance service delivery in the following ways: provide personalized search results, foster interactive learning environment in libraries, enhance access to information resources, assist in data driven decision making, promote use of open access resources and foster innovative digital earning spaces. Public university libraries in Kaduna State, Nigeria, play a vital role in supporting the academic and research endeavors of their parents' institutions. However, the effectiveness of these libraries in embracing or utilize library 3.0 and harnessing its potential to improve library services remains largely unexplored. Against this backdrop, this study seeks to assess the librarians utilization of library 3.0 in delivery information services in public university libraries in Kaduna State.

Statement of the Research Problem

The role of library in the university is multifaceted, encompassing strategic partnership, information management, research support, preservation, digital transformation, user-centricity, innovation, collaboration, and advocacy. University libraries play a vital in supporting the academic mission, fostering a culture of learning and research, and contributing to the overall development of the university. The evolution of ICT has transformed information service delivery by making them more efficient, accessible, and user-friendly. It has enable libraries to adapt to changing user needs and technological advancements, ensuring that they remain relevant and

valuable in the digital age. As academic libraries strive to remain relevant in the digital age, the utilization of library 3.0 has become a crucial aspect of their strategic development. The utilization of library 3.0 in public university libraries in Kaduna State is a crucial aspect of providing innovative and user-centered library services. This has further been attested by the study conducted by Abbas (2014) which uncovered that librarians inadequate the requisite expertise to maneuver the ICT facilities and navigate into the wealth of information resources available on the web and many general and specialized databases were never utilised by the librarians to deliver, provide and disseminate information to their clientele.

In recent years, the concept of library 3.0 has emerged, emphasizing the transformation of libraries into dynamic, technology-driven hubs of innovation and learning. Despite the adoption of digital technologies in various sectors, the effective utilisation of library 3.0 in public university libraries in Kaduna state remain unexplored. It is against this bacdrop this research aim to investigate librarians utilisation of library 3.0 in delivery library information services at pubic university libraries in Kaduna State.

Objectives of the Study

The overall objectives of this study is to examine the librarians utilisation of library 3.0 in delivering information service in public university libraries in Kaduna State. The specific objectives are to:

1. Identify the information services provided in public university libraries in Kaduna State
2. Ascertain the types of library 3.0 technology available in public university libraries in Kaduna State;
3. Determine the extent of utilization of library 3.0 technologies in the delivery of information services public university libraries in Kaduna State;

Research Questions

The following research questions are answered in the study

1. What are the types of library 3.0 technology available in public university libraries in Kaduna State?
2. What are the types of information services provided in public libraries in Kaduna State?

3. What is the extent of utilization of library 3.0 technologies in the delivery of information services in public university libraries in Kaduna State?

Review of Related Literature

Library Services Provided in Public University Libraries

Today's academic library has witnessed a significant change in its operationality due to technological advancements, a change in the higher education model, and a rapid change in user needs and demands during the digital era. This shift has seen the academic library redefining its services and reforming the ways and channels in which these services are delivered in order to retain its spot in the world of information and knowledge provision and management. More so, the traditional concept of users coming to the library for services is drastically changing to the library taking its services to users.

Lending or circulation service

This service is concerned with lending of books and other library material to the registered members of the library for a specific period of time. The service is also known as circulation service. For this purpose, each library follows a particular issue system for lending books to users and receiving them back from the users. All libraries offer this service though, the rules and regulations of circulation service may differ from o n e library to the other.

Inter-library loan

As you are aware, all libraries whether academic, public or special, build collections to fulfill the need of their users as well as to support the mission of the parent institution to which they belong. However, no library even the largest one, can afford to have a sufficient collection to satisfy all the requirements of its users. At times, the users require a document that is not available in its own library, but may be available in some other library. For this, libraries usually have an agreement with other libraries to share their resources on reciprocal basis. Under this agreement the required document is then borrowed from other library on inter-library loan and is given to the user.

Reference Service

Reference service is a personalized service which is provided in response to the request from the user. Request may be for locating an answer to the fact finding question; for literature search for solving research problem; for compiling a bibliography; or for general help. Ranganathan defined reference service as "personal service to each reader in helping him to find documents, answering his interests most pin-pointedly, exhaustively and expeditiously." Ranganathan also says, "to provide the right book to the right reader, in the right personal way". To provide the service, the librarian may utilise the resources available in the library as well as those available outside the library. Depending upon the user's requirement, librarian may give information itself or the documents containing the information.

User Orientation

Libraries, particularly academic libraries, normally organise user orientation or user initiation programmes for the new students every year in the beginning of the academic session. Such programmes acquaint the user with the library and its facilities such as the general rules and regulations of the library, the library collection and its location, catalogue of the library and how to use it, lending and borrowing facilities, and about reference and information services of the library. The basic aim of the user orientation programmes is to introduce the library and its services to the new user.

Current Awareness Services

To keep users abreast of the current developments in their respective field of interest, current awareness services are offered to the users. This involves scanning the newly available documents in print as well in non-print form, selecting items relevant to the needs of individual

or group of users, recording them and disseminating them to the users on a regular basis. Current awareness services meet the current information needs of the users.

Document Delivery Service

This service deals with the supply of document(s) to the users on demand, either in original or its copy in print or non-print form, irrespective of its location. A number of libraries and information centers in India offer document delivery service for copies of a journal article, a dissertation, or a report published anywhere in the world. On receiving the request from their patrons, the library or information centre traces the location of the requested item in India as well as abroad, procure and deliver it to the user.

Referral Service

In most of the libraries, the services are offered mainly from resources available in the library. But, at times, users require information that is not available in the library, but may be available elsewhere with other organisations or some experts. Then users are referred to the sources where the required information is available. The source may be either in the form of a document, or an organisation or an individual. This service is called referral service. Referral service does not provide users with the documents or information needed by them, but directs them to the sources of information where required information is available.

Types of Library 3.0 Technologies Available in Public Universities

Library 3.0 refers to libraries using Web 3.0. The end result of Library 3.0 is collections that can be made readily available to library users regardless of their physical location (Basahuwa et al. 2020). Library 3.0 is a virtual complement to physical public library spaces, and ideally will work seamlessly within established public library services and collections. Library 3.0 is more than a building; it is a new philosophy of service and engagement for communities. It will be a place to interact; a place to innovate; a place to inspire. Librarians working in Library 3.0 environment are

called librarians 3.0. Libraries will provide information for their user wherever they are using the technology of Web 3.0.

The evolution of library development from paper library to library 3.0 is shown below
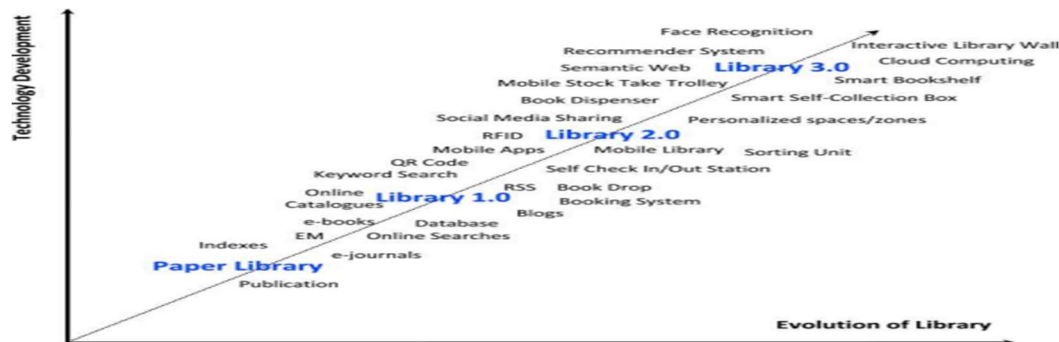

Figure 1 Evolution of library technology from library 1.o to library 3.o.

However, types of library 3.0 technologies commonly available in academic libraries which can enhance information service provision in the libraries according to Basahuwa et al. (2020) are:

Virtual reference service

In virtual reference service, apart from helping the users in person or through telephonic ways, librarians are now developing the contents that can easily be transferable and readable in cellphones and other mobile devices to help the users at any point in time. According to Pinto and Manso (2012), virtual reference services is a service that, based on the experience of traditional services developed within an information technology environment, satisfies user's information and knowledge needs in an interactive, participative, customized, and collaborative way.

User-generated content

Part of the strength of the semantic web for libraries is that it allows library users to become resources themselves. A library OPAC/website was previously a one-on-one experience, but can now be a "many to many" interaction. According to Burke (2009), the semantic web converts web pages from being readable and displayable by computers to being understandable by computers.

Based on Rah *et al*. (2010), the semantic web (also called Web 3.0) is beginning to empower and energize content on the web and its basic principles and technologies can energize and enhance the long-standing knowledge-management discipline.

Mobile libraries

Library 3.0 will provide the academic libraries with the opportunity to be in their student's pocket. Today's students are using the mobile technology always. The need to see the library website with mobile screen dimensions. According to Wilson and McCarthy (2010), the mobile revolution is upon us. Library must move toward mobile development. Libraries must prepare a strategic plan to use the mobile library to market their service.

Mobile OPACs

Having a mobile OPAC is great step for the library. Students will not like the current OPAC because it is not compatible with mobile screen dimensions. Murray (2010) stated that "mobile OPACS, or MOPACS, provide library users with varying degrees of access to the information contained in traditional OPACS, and tend to be available as either transcoded web sites formatted for handheld devices or as standalone, downloadable applications". This study provide information about mobile technology and to inform librarians about the following seven mobile initiatives: Library Web sites; SMS Reference; MOPACs (Mobile OPACs) and Integrated Library Systems; Mobile Collections; eBooks and Mobile Reading; Mobile Instruction; Mobile Audio/Video Tours.

Short messaging service (SMS)

Where there is no Internet, SMS is the best tool to know library services. Frantz & Tucker-Raymond (2011) opined that SMS has become a tool widely used by libraries in providing reference services. This study discusses the unique nature of text messaging queries. It provides some SMS programmes and websites. SMS is great solution for students to get information about library location, working hours, or available services. Text a librarian is great tool where patrons can get information about library.

Quick response codes (QR)

Libraries need to market their services. A Quick Response codes is the best tool for that. Based on Massis (2011), a QR code is an alternate terminology for a "Quick Response" or "2D" barcode that can be read by downloadable smart phone readers with camera-scanning capabilities. QR is a good tool where library can market their services such as: search, ask us, hours and locations, computer availability, video tutorials, and social media using this code. User will take a picture of the code and then he/she can access any library service they want.

Cloud computing

Library 3.0 needs high technology tools and staff. Cloud computing is the best for the libraries who cannot afford technology and staff. According to Yang (2012), cloud computing falls into several commonly acknowledged categories: software as a service (SaaS), hardware as a service (HaaS) or platform as a service (PaaS), and infrastructure as a service (IaaS). The cloud-based new generation of ILS allows many libraries to share useful data.

Artificial Intelligence

Artificial Intelligence (AI) is the study of science and technology based on various disciplines such as Computer Science, Biology, Psychology, Linguistics, Mathematics and Engineering. It deals with human intelligence such as reasoning, learning and problem solving. AI can be used in Gaming, Natural language processing, Expert System, Vision System, Speech Recognition, Handwriting Recognition and Intelligence Robots. AI system filters spam, recommend things for people to buy legal advice on everything (Basahuwa et al. 2020).

Extent to which Academic librarians Utilize Emerging Technologies for Improved Information Service Delivery in Public University Libraries

Emerging technologies have been incorporated into the library and information services for enhanced service delivery. Meanwhile, if technologies are integrated and information professionals lack ICTs knowledge or competencies to effectively utilise them it will amount to nothing. On this note, necessary skills would be essential for information professionals for

excellent job performance in the libraries. As a matter of necessity, information professionals should be prepared for emerging technologies to enable them to handle different jobs as required by different ICT tasks. According to Nsirim (2020), the level of ICT competencies required varies from one position to another depending on the tasks and duties involved. For example, for a librarian to be to manipulate word processing, desktop publishing and use Micro office suites, basic computer competency is required. On this note, working in a web 2.0 situational environment, it is expected of the information professionals to be competent in the use of various social media platforms that could help to discharge services effectively, including Facebook, Twitter, LinkedIn, Zoom, yahoo and blogs. In this technological world, information professionals need to possess the ability to retrieve information from various search engines such as Google and Altavista as well.

In the same vein, Kumar, (2017) also identified ICT tools information professionals can effectively utilised for efficient work performance to include; the use of communication technology like fax, video conferencing and internet, emails, , voicemail, telephone and remote control technology that provide a platform to work with a remotely located computer system to smartly access all subscribed e-resources anytime and anywhere with inclusive of library security such as Radio Frequency Identification (RFID) and Quick Response (QR) Code Technology, Closed Circuit Television (CCTV), Doyle (2019) also foresaw some skills information professionals would need to possess in a technological library operations to include online email management competency, collaboration skills, desktop publishing, social media management with respect to e-library users, text digitization, spreadsheet, content management, document management, web design and development, library automation, database management and retrieval skills to be able to manipulate the digital library confidently and effectively due to emerging technology surfacing by the day.

These skills are necessarily needed to conformably exploit the ever-surfacing technologies and only those who are digitally savvy can use such technologies to work across the network to efficiently deliver assigned roles. In this case, having ICT skills alone is not all that matters for service delivery, but it also contributes greatly to the enhancement of human society (Onuoha et al., 2019). However, Abdulrahman and Habila, (2017) attested to the fact that the use of ICT in

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library services is not a recent development but the level of utilisation for its success to be attained is worrisome. It therefore requires preparing a new generation of information professionals through digital training to effectively utilise the emerging technologies. Notwithstanding, emerging technologies in library and information services including metadata, cybrary, integrated library management systems, cloud computing, crowdsourcing, institutional repositories and a host of others are credibly making academic library services operationally easier but are not well utilised in their full potential (Nsirim, 2020). Google Hangout is an online communication platform that supports SMS, video chat, and VoIP features which are also applications used by information professionals in some libraries around the globe (Abdulrahman & Habila, 2017). VoIPWhatsApp, a free application that uses the internet to send messages, audio or video is another application that information professionals are currently using. Instant Messaging (IM) is also an online communication that offers real-time text transmission over the internet (Bera, 2019).

It gives a platform for two people to chat online by typing a message into a specialized window or 'chat'' room as generated by the IM software. File transfer can be added including voice or video chat and clickable hyperlinks. Some of the IM communication tools library users or information professionals can use freely for chat reference services include but are not limited to WhatsApp, Morris Messenger, AOL, Yahoo and WeChat. This has been regarded as one of the most efficient means of communication with reference information professionals about convenience and ease of use (Mawhinney, 2020). However, if academic libraries need to remain responsive and relevant to their customers, they must exploit the conversational nature of social media like Facebook, Twitter (Williams, 2020).

Methodology

The researcher adopted quantitative research approach, with the used of survey research design to guide the study. The population of this study consisted of one hundred and thirty-eight (138) academic librarians in public university libraries in Kaduna State. Due to the size of the population, total enumeration technique was employed for the study. Self-structured questionnaire was designed by the researcher in order to provide responses from

librarians. A total number of 138 copies of the questionnaire were administered to academic librarians in Nigerian Defence Academy Library, Air force Institute of Technology Library, Ahmadu Bello University Library, Kaduna State University Library and Federal University of Education Zaria. The data for this study was analyzed using descriptive and inferential statistics. The research questions were analyzed carefully using frequency distribution, simple percentage scores, mean, and standard deviation.

What are the types of library 3.0 technology available in public university libraries in Kaduna State.

Table: 1

S/N	Services	ABU ZARIA		AFIT		KASU		NDA		FUE	
		Available	Not Available	Available	Not Available	Available	Not Available	Available	Not Available	Available	Not Available
1	Open Access Catalog(OPAC)	A			NA		NA	A		A	
2	Institutional repository	A		A		A		A			NA
3	Chatbots		NA		NA		NA		NA		NA
4	ChatGPT	A		A		A		A		A	
5	Moodle		NA		NA		NA		NA		NA
6	Zoom	A			NA	A		A			NA
7	Google meet	A		A		A		A		A	
8	Plagiarism text tool such as Turnitin	A		A		A		A			NA
9	Citation management tools such as Mendeley	A		A		A		A			NA
10	Email	A		A		A		A		A	

11	Facebook	A		A		A		A		A	
12	Twitter	A		A			NA		NA		NA
13	Mobile phone	A		A		A		A		A	
14	Google drive	A		A		A		A		A	
15	Open Access Catalog(OPAC)	A		A		A		A		A	

The observation checklist reveals that library 3.0 technology tools were available in most public university libraries in Kaduna State ha as Open Access Catalog (OPAC), ChatGPT, Google Meet, Email, Facebook, Mobile Phone services, and Google Drive. These technologies are widely available across Ahmadu Bello University (ABU), Air Force Institute of Technology (AFIT), Kaduna State University (KASU), Nigerian Defence Academy (NDA), and Federal University of Education (FUE). However, some essential technologies remain largely absent. None of the five university libraries have adopted chatbots or Moodle, which are vital for personalized interaction and integration with e-learning platforms. While plagiarism detection tools like Turnitin and citation management tools such as Mendeley are present in four institutions, they are not yet available in FUE.

What type of information services are delivered by public university

Table: 2

STATEMENTS	SA	A	SD	D	N	FX	X	STD	DECISION
Information and reference services	40	38	3	0	81	280	3.46	1.22	Agreed
Access to information resource services	21	54	0	6	81	252	3.11	1.23	Disagreed
Research support services	20	50	9	2	81	250	3.09	0.98	Disagreed
Borrowing, renewal and reservation services	22	52	6	1	81	257	3.17	0.88	Agreed
Information Literacy education services	25	48	6	2	81	258	3.19	0.66	Agreed
Provision of digital services such as access to databases and institutional repositories	20	47	12	2	81	247	3.05	1.10	Disagreed

Academic writing and tutoring services	17	52	9	3	81	245	3.02	1.76	Disagreed
Current awareness services	23	45	10	3	81	250	3.09	1.32	Disagreed
Selective dissemination of information services	17	50	12	1	81	243	3.00	0.98	Disagreed

STATEMENTS	VHE	HE	VLE	LE	N	FX	X	STD	DECISION
My library uses open access catalogs to provide access to information resources	4	44	23	10	81	204	2.52	0.54	High
My library employs institutional repositories to disseminate and preserve information resources	18	31	28	4	81	225	2.78	1.01	High
My library utilize artificial intelligence tools such as chatbots, to address users' queries	3	46	21	11	81	203	2.50	0.98	Low
My library utilize online platforms, like Moodle, to offer various information literacy programs	18	33	23	71	81	224	2.77	1.60	High
Collaborative platforms, such as Zoom and Google Meet, are used to organize user orientations and library instruction programs	8	41	21	11	81	208	2.57	1.27	High
To support ethical research practices, my library assist users in conducting plagiarism checks using tools like Turnitin	10	38	29	4	81	216	2.67	0.63	High
My library helps users retrieve information through ChatGPT and open educational resources platforms	10	39	19	13	81	208	2.57	1.30	High
My library aid users in managing their citations with tools such as Mendeley	11	38	23	9	81	213	2.63	1.98	High
My library preserves information about users profiles and resources information in the cloud using Google drive and Email	8	44	19	10	81	212	2.61	0.76	High
My library utilize chatbots and virtual assistants for selective dissemination of information	6	46	18	11	81	209	2.59	2.54	High

My library provide current awareness programmes by utilizing designated mobile and social media platforms	9	44	19	9	81	215	65	2.55	High
						Average Waited Mean 2.62			

Table 2 showed that the services provided by public university libraries in Kaduna State which had the highest mean rating include the following: Information and reference services (mean=3.45), information literacy education services (mean=3.19) and borrowing, retrieval and reservation services (mean=3.17). Furthermore, the data in Table 2 revealed that respondents agreed that information services were delivered in public university libraries in Kaduna State with an average weighted mean of 3.19.

What is the extent of utilization of library 3.0 technologies in the delivery of information services?
Key: Very High Extent (VHE), High Extent (HE), Very Low Extent (VLE), Low Extent (LE)

Table: 3

The data from Table 3 examines the extent of utilization of Library 3.0 technologies in the delivery of information services in public university libraries in Kaduna State. The Average Weighted Mean (AWM) is 2.62, indicating a generally moderate level of utilization. Out of the eleven statements only four were above the weighted mean average.

The highest mean score was recorded for the statement "My library employs institutional repositories to disseminate and preserve information resources" with a mean of 2.78, showing moderate agreement among respondents This indicates that institutional repositories digital platforms used for collecting, managing, and preserving the academic output of universities are among the most utilized Library 3.0 tools. Their adoption reflects libraries' efforts to support open access, long-term preservation, and improved visibility of research produced within the institution. This use of technology aligns with global best practices in scholarly communication

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and shows promise for further growth if properly supported. On the other hand, the lowest mean was observed for the statement "My library utilize artificial intelligence tools such as chatbots to address users' queries," with a mean of 2.50.

Discussion of Findings

The findings revealed that public university libraries in Kaduna State are providing some core information services effectively, especially information and reference services, borrowing/renewal services, and information literacy education. These services recorded high mean scores and were agreed upon by the respondents, suggesting that librarians are meeting the basic needs of library users in accessing and understanding library resources. These findings are in accordance with the findings of Ariole (2017) who observed that reference and information services were provided in two university libraries in Nigeria. However, services that align with modern library trends, such as digital services, academic writing support, selective dissemination of information (SDI), and current awareness services, received lower mean scores. The implication is that while traditional services are being maintained, public university libraries are lagging in integrating innovative approaches that can better serve the information behaviour of digital-age users.

The findings from the observation checklist on the types of Library 3.0 technologies available in public university libraries in Kaduna State reveal significant variation in the available Library 3.0 technologies across institutions. Commonly available technologies across most universities include the Online Public Access Catalogue (OPAC), institutional repositories, ChatGPT, Google Meet, email, Facebook, mobile phones, and Google Drive. These findings are in disagreement with the findings of Idiedo *et al*. (2024) who found that only a few universities in Nigeria have adopted open institutional repositories. However, the data also reveal a critical gap in the availability of some core Library 3.0 technologies. Tools such as chatbots, Moodle, and Twitter were absent in all the institutions surveyed, suggesting limited implementation of user-personalized services and e-learning platforms. Additionally, some key technologies like Zoom, plagiarism detection tools (e.g., Turnitin), and citation management tools (e.g., Mendeley) were

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not uniformly available, particularly in institutions such as FUD (FUE) where availability was limited or non-existent. The absence of these tools in some libraries underscores the need for strategic investment in digital infrastructure and staff training to fully realize the potential of Library 3.0 in public university libraries

The utilization of Library 3.0 technologies in public university libraries is generally moderately utilised. Institutional repositories, Moodle for information literacy, Turnitin for plagiarism checks, and Mendeley for citation support were among the few tools moderately used. This indicates that while some digital tools have been adopted, they are likely used on a limited scale or within specific departments rather than being institutionalized across all services. Technologies that are central to Library 3.0 like chatbots, artificial intelligence, cloud services, and mobile platforms had low mean scores and were rated as not widely used. These findings coincide with the study of Nsirim (2020) who stated that emerging technologies in library and information services like metadata, cybrary, integrated library management systems, cloud computing, crowdsourcing, institutional repositories and a host of others are credibly making academic library services operationally easier but are not well utilised in their full potential. This suggests that many libraries are not yet leveraging the full range of digital tools available for enhancing user interaction and remote service delivery. The limited implementation reflects both technical and institutional challenges, such as lack of training, infrastructure, or administrative support.

Conclusion

This study examined the extent of librarians' utilisation of library 3.0 for information service delivery in public universities libraries in Kaduna State. Findings revealed that while traditional library services such as reference, lending, and information literacy are actively delivered, modern digital services like current awareness, selective dissemination of information (SDI), and AI-driven support are largely underutilized. Library 3.0 technologies such as institutional repositories and Moodle are used to some extent, but the overall level of utilization remains low. Challenges including poor funding, resistance to change, lack of infrastructure, and inadequate training significantly hinder the successful adoption and implementation of Library 3.0

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technologies. Therefore, to realize the full benefits of Library 3.0, a deliberate, well-funded, and strategic intervention is required at the institutional and policy level.

Recommendations

From the findings of the study, the following recommendations are hereby made:

1. Public university libraries should enhance their services to include personalized, user-centered, and AI-enhanced services like SDI, chatbots, and mobile current awareness platforms.
2. Essential library 3.0 technology tools such as chatbots should be made available in public university libraries in Kaduna State.
3. Academic librarians should ensure they attend regular in person and online workshops that focuses on library 3.0 technology in information service delivery especially in creating and analysing data.
4. University libraries in Kaduna State should prioritize strategic investment in Library 3.0 technologies such as digital repositories, interactive online platforms, and collaborative web tools.

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