Information Technology Use Influence on Quality Services Delivery by Library Personnel in Selected Higher Institutions of Learning

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Abstract
Information technology has adopted in all facet of human endeavours including tertiary institutions and particularly the libraries in order to improve quality services delivery to the clietele. Although, this have been hindered with hitches like poor funding, obsolete IT tools and majorly training. In closing this gap, the present study therefore investigates the impact of technology usage on the quality-of-service delivery by library staff in selected higher education institutions in Ogun State, Nigeria. Employing a descriptive survey design, the research utilised a questionnaire as the key instrument for data collection. A census sampling technique was applied, including all 77 library personnel from the chosen institutions. The analysis of the collected data was conducted using SPSS software. The results indicated that the library personnel made use of various technologies, including computers, photocopiers, printers, scanners, and uninterruptible power supply (UPS) devices, to facilitate effective and quality service delivery. These technologies were reported to be frequently used, with many being deployed daily. Nevertheless, the staff faced several obstacles, such as limited financial resources, outdated ICT equipment, high maintenance costs, lack of skilled personnel, insufficient ongoing training, and inadequate ICT competencies. Additionally, poor maintenance of ICT equipment was identified as a major concern. The study suggested that library management should consider alternative energy sources, such as solar inverters, to better support the technological infrastructure, thereby improving the quality of service in higher education institutions.

Keywords: Higher institutions of learning, Library personnel, Quality services delivery, Technologies, Use.

Introduction

A higher institution of learning comprises post-secondary establishments where individuals can pursue further education and obtain additional qualifications. Examples of such institutions include universities, polytechnics, monotechnics, and colleges of education. The smooth running of these institutions depends on both academic and non-academic staff, which includes lecturers, administrative officers, clerks, laboratory technologists, and central to this discussion, library personnel. Library staff are essential for meeting the information needs of users within these institutions. They are generally classified into two main categories: professionals and paraprofessionals. Professionals, or librarians, are those with formal academic credentials, such as a Bachelor's Degree in Librarianship or related fields, and often hold advanced qualifications like a Master's or PhD. Their roles involve specialised duties, including cataloguing and classifying materials, abstracting and indexing, offering reference services, managing digital projects, selecting resources for

acquisition, performing administrative duties, and providing consultancy services. Paraprofessionals, on the other hand, typically have a library studies certification, specifically in diploma. These individuals, known as library officers or assistants, assist professional librarians by performing tasks such as preparing cataloguing and classification worksheets, registering new library users, organising and shelving books, maintaining order on the shelves, and addressing user queries at the circulation desk. They also help with other essential library operations (Yusuf and Fasae, 2021).

In the context of modern library operations, library staff must continually evolve to meet the demands of the digital age. As technology and telecommunications advance rapidly, there is growing pressure on personnel to improve their service quality. The integration of essential technological tools into library systems is crucial for enhancing the services provided to patrons. Service provision, as described by Ekere, Eze, Okpala, and Ebobo (2019), involves an exchange where the service provider delivers valuable information or activities to the client. Adapting to these changes is essential for libraries to remain relevant and effective in serving their communities. A key aspect of quality service provision is ensuring that patrons receive maximum benefit from the services rendered. In academic environments, such as universities and other higher education institutions, library personnel play a pivotal role in delivering high-quality services, which contributes to the overall educational experience. According to Oden and Owolabi (2021), quality service is achieved when library staff effectively meet the information needs of users promptly, exceeding expectations and ensuring satisfaction. Service delivery in academic libraries is primarily to support the research, learning, and teaching needs of users by providing them with the necessary information resources. Over the past few decades, technology has significantly reshaped the way services are provided in libraries. As noted by Quadri, Quadri, and Oluwasina (2015), these changes have redefined the expectations of service delivery, making embracing new technologies compulsory for library staff to continue meeting the demands of modern users.

Technological tools have become essential for enhancing productivity, efficiency, effectiveness, and transparency in the workplace (Alasa and Quadri, 2022). Across all sectors, there has been a compelling shift towards the adoption of technology as a means to streamline operations and maintain a competitive edge (Ashiru, Adegbore, Awujoola and Bayowa, 2022). The growing utilisation of technology has particularly transformed the business and education sectors globally, establishing itself as a powerful tool for promoting effectiveness and transparency in academic activities through internet-based information systems and databases (Haliso, 2011). According to Oyedokun, Oyewumi, Akanbi, and Laaro (2018), technological advancements have radically impacted almost every sphere of human activity, including the library sector. Through the implementation of technology, libraries and information centres have expanded their services, fundamentally altering how information is accessed, processed, and delivered electronically to a broader audience.

This evolution necessitates that library personnel acquire at least basic and intermediate technological competencies to effectively cater to the needs of both on-site and remote users, as well as to ensure the longevity of their professional roles (Yusuf, 2021). Despite these advancements, preliminary research and interviews indicate that many library personnel have not fully lived up to expectations concerning service quality, largely due to their failure to integrate technology into their work. Bamigboye, Akinola, Agboola, and Ogunyinka (2021) further highlight that the timely

and quality provision of library services in higher education institutions remains insufficient, primarily because of the inadequate incorporation of technology into library operations. Considering the aforementioned challenges, the influence of technology on library personnel service delivery, particularly in selected higher institutions in Ogun State, Nigeria was investigated.

Objectives of the Study

The following objectives guided the present study.

1. Ascertain the level of technology use for quality service delivery among library personnel in higher institutions in Ogun State;
2. Find out technological tools needed in providing quality service delivery by library personnel in the selected higher institutions in Ogun State;
3. Find out the frequency of using technological tools to enhance quality service delivery by library personnel in selected higher institutions in Ogun State;
4. To establisg the **c**hallenges faced in adopting technology for quality service delivery by library personnel in higher institutions in Ogun State..

Literature Review

This section reviewed extant literature about the topic being investigated. Databases such as Google Scholar, Springer, Proquest, AJOL, Jstor and so on were used surf the internet for relevant information. This section highlights the importance of technology for library personnel in enhancing service quality. In tertiary institutions, library staff rely on technological tools to manage resources and deliver efficient services. Library personnel demonstrate moderate proficiency in using the internet, computer systems, and email, but they lack expertise in more advanced areas like web-based tools, web design, and troubleshooting (Oyedokun, Oyewumi, Akanbi, and Laaro, 2018). Oyedipe and Popoola (2019) conducted research involving university library staff in the South-west Nigeria, discovering that skills such as computing, downloading, digitisation, and the use of Web 2.0 tools were at a moderate level, which positively influenced service quality. In another study, Sulaiman and Ikonne (2022) with a sample of 225 participants drawn from a population of 702, revealed a high level of technology use among library staff. Furthermore, Basahuwa, Unegbu, Babalola, and Yemisi (2020) found that academic librarians in North-Central Nigeria demonstrated an average level of technological proficiency in their library duties.

llesanmi (2023) researched the technological capabilities of professional librarians working in private universities in Southern Nigeria. The study utilised a survey approach, gathering information from a sample of 45 librarians, with the intended population being all 181 librarians. Questionnaires were employed as the main instrument for data collection, and 173 of the 181 distributed questionnaires were completed and analysed using SPSS Version 21. It was revealed through the findings that librarians possessed a moderate level of technology skill, particularly in browsing the internet and utilising Microsoft Office programs. Similarly, a study assessed the extent of technology utilisation among library personnel in Kwara State, Nigeria (Oyedokun, Oyewumi, Akanbi, and Laaro 2018). This descriptive study involved 122 respondents from a total population of 191, achieving an 89.3% response rate with 109 questionnaires returned. The findings revealed that library staff in the region demonstrated a high degree of technology adoption.

In universities in Southwestern Nigeria, Akintola (2021) explored the connection between technology use in service delivery and capacity building among library staff. Using a mixed-methods approach, the study sampled 311 professional librarians and 165 paraprofessionals from 46 institutions. The research was grounded in the Technology Acceptance Model (TAM2) and human capital and capability theories. Data were collected through questionnaires and in-depth interviews, with results showing a high level of technological use among respondents, indicated by a mean score of 49.30, well above the threshold of 36.00. The qualitative data reinforced these findings. Collectively, these studies highlight that library personnel generally exhibit moderate to high technological proficiency, which significantly contributes to improved service quality.

The integration of technology in higher education libraries has become increasingly vital for enhancing service delivery. Shabahat (2015) highlights that technology has transformed library operations by automating tasks related to information storage, processing, and dissemination. This transformation is particularly evident in Nigerian higher education libraries, where Ayoku and Okafor (2015) point out the growing adoption of technological tools in daily activities. As a result, library staff are required to assume new responsibilities and develop skills that align with contemporary information management practices, enabling them to meet the expectations of a society that is knowledge-driven, addressing users' demands for remote access to resources. Batool and Ameen (2010) argue that in order to effectively meet the needs of users, libraries should be furnished with the appropriate information technologies. They stress the importance of librarians possessing the technological expertise essential for efficient information management in today's dynamic environment. Furthermore, Satpathy and Maharana (2014) assert that technology is crucial for enhancing library services and addressing the diverse information requirements of users.

Many higher education libraries are shifting from manual processes to automated, computerized systems to streamline key functions. Ansari (2013) emphasises that a blend of technological tools is necessary for effective information management in academic libraries, supporting vital activities such as information conversion, storage, processing, transmission, and retrieval. The authors categorise technology into four primary areas: Hardware which encompasses physical equipment like printers, scanners, servers, and computers that facilitate library functions. Software refers to applications and systems that facilitate tasks like cataloguing, digital asset management, and user access. Network Infrastructure comprises the connectivity tools and platforms that enable communication and resource sharing among users and library staff., while User Interface Technologies are the platforms and tools that enhance user interaction with library resources, including online catalogues, databases, and mobile applications.

The integration of modern technological tools is essential for enhancing service delivery in academic libraries. Adjei (2020) highlights an assortment of essential devices for library operations, including laptops, desktops, iPhones, iPads, and peripherals such as barcode readers, printers, speakers, and keyboards. Additionally, a strong network infrastructure, which includes optical fibre, coaxial and Cat-5 cables, satellite modems, switches, and routers, is crucial for supporting these technologies. Mairaj and EL-hadi (2012), in a survey of professional libraries in Lahore, Pakistan, discovered a broad range of technological resources being utilised. This

included computers, scanners, DVD barcode readers, fax machines, multimedia projectors, and software applications, alongside databases and digital subscriber lines for internet connectivity.

The significance of certain key resources is further highlighted by Iyabode (2015) and Ogedengbe and Quadri (2020), who point out that tools such as printers, internet access, email, and scanners are crucial for delivering efficient library services. Akpo (2019) reinforces this by identifying email, internet access, printers, and computers as critical components for quality service delivery. Moreover, Shabahat (2015) expands on this by noting the relevance of telephones, video/audio conferencing, and social media platforms within academic libraries. Kumarjit and Mohan (2014) emphasise the value of the Online Public Access Catalogue (OPAC), which allows users to remotely access information through its Universal Resource Locator (URL). Similarly, Quadri, Quadri, and Oluwasina (2015) confirm that technologies such as RFID, quick response codes, email, and digital repositories have been adopted to improve service quality.

The literature review collectively illustrates that technological tools are paramount for library staff in higher education institutions to provide high-quality services. Essential devices such as computer systems, internet access, printers, projectors, scanners, mobile applications, cameras, and photocopiers significantly enhance library services. The significance of these technologies in enhancing library operations and user experiences is emphasised by Omogbhe, Quadri, and Kutu (2020). By integrating these tools, libraries can efficiently meet the varied needs of their users and optimise processes.

The refers to as rate of usage as recorded by the number of times technology is often used be it daily, weekly, monthly or occasionally depending on the appropriate scale**.** Alasa and Quadri (2022) reported that technology tools are mostly used by library personnel in higher institutions of learning libraries for quality service delivery and discovered that OPAC, CD-ROM databases, e-mail and the internet were used particularly on a daily basis. In a similar survey of ICTs which are facilities available in higher institutions' libraries to aid both learning and research in Delta State, Adomi and Kpangban (2010) indicated that 77.8% of the ICT tools used by library personnel for teaching, learning as well as quality service delivery on daily basis were computer systems for online cataloguing, search engine databases, user registrations, photocopy and printing service, and so on.

A significant majority of library personnel in college libraries in South West Nigeria, as revealed in a study by Oyedipe and Popoola (2019) regarding the frequency of ICT tool usage, reported that 86.3% used computer systems daily. Furthermore, 67.7% indicated they accessed internet facilities every day, whereas only 3.33% acknowledged using CDs/DVDs daily. This regular utilisation of ICT tools has allowed library staff to create innovative products and services, including virtual desks, electronic resource availability, database searches, and interactive services like "Chat with a Librarian," as well as the development of institutional repositories (Fidelis, 2018).

Ajayi, Shorunke, and Akinola (2013) observed that library personnel in academic settings frequently do not make use of ICT tools for essential functions such as cataloguing, classification, serials ordering, and managing library materials. This indicates a low frequency of ICT usage in these areas. In South Africa, Mostert and Ntetha (2008) researched the availability and frequency of ICT tool usage for

delivering quality services, finding that even with ICT resources available, issues like inadequate computers and limited internet access significantly restricted usage among library staff. Similarly, Yusuf and Fasae (2021) explored the connection between ICT utilisation and service delivery by library personnel in Ekiti State. Their study revealed that 57.3% used computer systems, 62.7% of respondents used photocopiers daily and 45.5% utilised printers, while most participants reported weekly use of scanners, databases, and the internet. Although many technological tools for quality service delivery were frequently used by library staff, notable gaps in ICT usage still exist.

For service provision, library personnel often encounter various challenges despite the advantages that technology offers for delivering quality services in higher education libraries. The inconsistent electricity supply in Nigeria creates a major challenge for academic libraries in effectively using technology (Ajayi, Shorunke, and Aboyade, 2014). This unreliability negatively affects the utilisation of electronic information resources and various technology-driven tools in libraries. In addition, Oyewo, Akintode, and Salau (2019) identified insufficient telecommunication infrastructure and restricted internet access as significant hurdles for staff in education college libraries when attempting to implement technology for delivering quality services.

Emmanuel (2017) examined the utilisation of ICTs in Nigerian libraries and found that library personnel often possess low levels of technological skills, compounded by inadequate ICT infrastructure and poor internet bandwidth, which hinder the quality of services provided. To improve service delivery, library personnel must embrace technology. Oketunji, Daniel, Okojie, and Abdulsalaam (2012) identified several hindrances to ICT usage, including occasional equipment breakdowns, outdated technology, lack of maintenance and technical support, and insufficient training for personnel. Additionally, Okiy (2015) reported that a lack of support and funding from the management contributed to the unavailability of ICT resources for delivering quality services in Nigerian academic libraries.

A study in Federal Colleges of Education conducted by Okere (2022) on factors affecting librarian's use of ICTs shows that most the professional librarians attested to poor internet access with a mean score of 3.41, low bandwidth 3.35, inadequate financial support 3.23 and poor ICT facilities and infrastructure 3.16 as challenges to ICTs usage by library personnel for quality service delivery. This was supported by Chisenga (2016) who disclosed that there is limited technical knowledge of ICTs among many library personnel and this makes it very difficult for them to manage the facilities at the library and to provide quality services delivery. It is well illuminating that several problems constitute to effect use of technology for quality service delivery in higher institutions of learning, the university and library management must respond to these hiccups to enhance quality service delivery.

Theoretical Framework

The Technical Acceptance Model (TAM), introduced by Davis, Bagozzi, and Warshaw in 1989, serves as a valuable framework for examining the influence of technology use on service delivery among library personnel in higher education institutions. This model focuses on how individuals adopt and utilise technology, making it particularly relevant in various organisational settings, including academic libraries (Ramayah, 2006; Ojo and Quadri, 2014). In the context of this study, which targets library personnel in selected higher institutions in Ogun State, TAM suggests that the perceived ease of use

and perceived usefulness of technology significantly impact their ability to deliver quality services. When these personnel find technology user-friendly and believe it enhances their service delivery, they are more likely to adopt it. Conversely, challenges such as unreliable electricity and limited internet access can diminish these perceptions, leading to lower levels of technology utilisation. Therefore, addressing these infrastructural barriers is crucial for improving technology adoption, ultimately enhancing the quality of services provided by library personnel in these educational institutions.

Methodology

The study utilised a descriptive survey approach, focusing on library staff from four institutions: the Federal College of Education, Federal University of Agriculture, Crescent University, and Moshood Abiola Polytechnic, all situated in Abeokuta, Ogun State. The population comprised seventy-seven (77) professional and paraprofessional librarians, with data collection conducted via a census method. Data were collected through questionnaires administered over a five-week timeframe. The analysis employed Statistical Product and Services Solutions (SPSS), and the results were presented using tables, frequency counts, percentages, and mean scores. Ethical considerations were diligently upheld throughout the research process.

Result and Discussion of Findings

The study outcomes are presented afterwards in line with the stated objectives:

Objective 1: l Level of Technology Utilisation among Library Staff in Chosen Higher Education Institutions in Ogun State.

Table 1: Level of Technology Use for Quality Service Delivery among Library Personnel in Selected Higher Institutions in Ogun State

S/N	Technology use	Not at all	Less often	Not sure	Often	Very often	Mean	SD
1.	Hardware (laptops, desktops, scanners, faxes)	9.1	16.9	44.2	10.4	19.5	3.14	1.19
2.	Computing tools (Word processor, spreadsheets, Presentation software)		15.6	55.8	18.2	10.4	3.23	0.84
3.	Cloud storage and collaborating tools (Google Drive, Microsoft OneDrive, dropbox, etc)		24.7	28.6	36.4	10.4	3.33	0.97
4.	Social media (LinkedIn, Twitter, WhatsApp)		24.7	28.6	27.3	19.5	3.42	1.07
5.	Knowledge base (library database, online magazines, journals)	7.8	18.2	18.2	28.6	27.3	3.49	1.28
6.	Technology (USB, Webcam, Bluetooth, iPod)	9.1	7.8	39.0	26.0	18.2	3.36	1.15
7.	Asynchronous (emails, blogs, podcasts, online forum, audio graphics)	10.4		62.3	27.3		3.07	0.83
Weighted Mean = 3.29 Threshold Mean = 3.09								

Table 1 illustrates the engagement of library personnel with ICT in higher education institutions in Ogun State, focusing on service delivery enhancement. The findings indicate that a considerable proportion of respondents utilise hardware like laptops, desktops, scanners, and fax machines, which earned an average score of 3.14. Moreover, computing applications such as word processors, spreadsheets, and presentation software were commonly reported, achieving a mean score of 3.23. The utilisation of cloud storage and collaboration tools, including Google Drive, Microsoft OneDrive, and Dropbox, averaged a score of 3.33. Additionally, social media platforms like LinkedIn, Twitter, and WhatsApp received an average score of 3.42. Overall, these results acknowledged that library personnel demonstrate positive level of ICT tools usage in delivering quality services, reflecting consistent use of these technologies.

Objective 2: Technological Tools Needed in Providing Quality Service Delivery by Library Personnel in the Selected Higher Education Institutions in Ogun State.

Table 2: Technological Tools Needed in Providing Quality Service Delivery among Library Personnel in Selected Higher Institutions in Ogun State

S/N	Technological tools needed for quality service delivery	NU	OU	HU	VHU	Mean	std
1.	Computer (laptops, desktops, tablets, iPads)	1.3	9.1	61.0	28.6	3.17	0.64
2.	Photocopier	1.3		71.4	27.3	3.25	0.52
3.	Printers		9.1	62.3	28.6	3.20	0.59
4.	Scanner		27.3	27.3	45.5	3.18	0.84
5.	UPS		27.3	27.3	45.5	3.18	0.84
6.	Multimedia projectors		19.5	44.2	36.4	3.17	0.73
7.	Internet service		37.7	27.3	35.1	2.98	0.86
8.	Databases		35.1	36.4	28.6	2.94	0.80
9.	OPAC	9.1	16.9	54.5	19.5	2.84	0.84
10.	Social networking site s (Facebook, Twitter, LinkedIn)	9.1	7.8	45.5	37.7	3.12	0.90
11.	Audio/video sharing/webcasting (Flickr, Skype, Youtube)	16.9	9.1	46.8	27.3	2.84	1.01
12.	Discussion group (Google me at, Google Talk/Yahoo Group , Microsoft Teams, Zoom)	7.8	28.6	27.3	36.4	2.92	0.98
Weighted Mean = 3.07 **Threshold Mean = 2.9**							

Table 2 revealed various technological tools needed and used by library personnel in higher institutions of learning in Ogun State to provide quality service delivery. Overall, the table showed that these devices are highly utilised among the library personnel in the sampled institutions.

Objective 3: The Frequency of Library Staff in Selected Higher Education Institutions in Ogun State Using Technological Tools to Enhance the Quality of Their Service Delivery.

Table 3: Frequency of Using Technological Tools to enhance Quality Service Delivery among Library Personnel in Selected Higher Institutions in Ogun State

S/N	Technological tools	Never	Monthly	Weekly	Daily	Mean	std
1.	Computer (laptops, desktops, tablets, iPads)	9.1	18.2	36.4	36.4	3.00	0.96
2.	Photocopier		18.2	54.5	27.3	3.09	0.67
3.	Printers	10.4	9.1	72.7	7.8	2.78	0.74
4.	Scanner		18.2	71.4	10.4	2.92	0.53
5.	UPS		27.3	53.2	19.5	2.92	0.69
6.	Multimedia projectors	18.2	9.1	63.6	9.1	2.64	0.89
7.	Internet service	9.1	18.2	62.3	10.4	2.74	0.77
8.	Databases	7.8	36.4	36.4	19.5	2.68	0.88
9.	OPAC	7.8	36.4	36.4	19.5	2.67	0.88
10.	Social networking site s (Facebook, Twitter, LinkedIn)		18.2	54.5	27.3	3.09	0.67
11.	Audio/video sharing/webcasting (Flickr, Skype, YouTube)	9.1	16.9	46.8	27.3	2.92	0.90
12.	Discussion group (Google meat, Google Talk/Yahoo Group, Microsoft Teams, Zoom)		27.3	44.2	28.6	3.01	0.75
Weighted Mean = 2.87 **Threshold Mean = 2.38**							

The library personnel in tertiary institutions in Ogun State's frequency of usage of various technological tools for quality service delivery is presented in Table 3. A significant number of respondents identified social networking sites and photocopiers as the most frequently used technologies, with a mean score of 3.09. Other tools that were used daily include printers, scanners, internet connectivity, uninterruptible power supplies (UPS), and multimedia projectors. This demonstrates that library personnel consistently leverage these technological resources to enhance their service delivery.

Objective 4: Challenges Faced in Adopting Technology for Quality Service Delivery by Library Personnel in Higher Education Institutions in Ogun State.

Table 4: Challenges Faced by Library Personnel in Adopting Technology for Quality Service Delivery in Selected Higher Institutions in Ogun State.

S/N	Challenges encountered	Mean	St Dev	Decision
1.	Inadequate facilities	2.64	0.48	Disagreed
2.	Limited financial resources	3.27	0.76	Agreed
3.	Obsolete ICT equipment	3.46	1.24	Agreed
4.	High cost of maintenance	3.82	1.12	Agreed
5.	Inadequate skilled personnel	3.64	1.08	Agreed
6.	Lack of regular training	3.09	1.17	Agreed
7.	Low bandwidth	2.82	1.20	Disagreed
8.	Poor maintenance of ICT equipment	3.27	1.14	Agreed
9.	Copyright and intellectual property right management	2.90	0.80	Disagreed
10.	The c onstant change in software and hardware	2.82	0.58	Disagreed
11.	Poor ICT skills	3.18	0.84	Agreed
12.	Poor internet connectivity	3.46	0.50	Agreed
Weighted Mean = 3.20 **Threshold Mean = 3.00**				

Table 4 shows a weighted mean of 3.20, out of a possible 5.00, which is above the threshold mean of 3.00. Respondents identified twelve challenges related to adopting technology for quality service delivery, agreeing on eight while disagreeing on four. The challenges they acknowledged included outdated ICT equipment, limited financial resources, high maintenance costs, insufficient skilled personnel, lack of regular training, poor maintenance of ICT equipment, inadequate ICT skills, and unreliable internet connectivity. Conversely, they largely disagreed that inadequate facilities, low bandwidth, issues of copyright and intellectual property management, and frequent changes in software and hardware were significant challenges in adopting ICT within the sampled institutions in Ogun State.

Discussion of findings

Findings from the first objective indicated that most respondents reported using technology like laptops, scanners, hardware, computer applications, computer tools, cloud computing, collaboration tools, and social media for quality service delivery. This aligns with the studies by Oyedipe and Popoola (2019) and Ogedengbe and Quadri (2020), which also noted that technological use including digitisation, downloading capabilities, and Web 2.0 tools was at a moderate level, ultimately enhancing service quality. Similarly, Yemisi (2020), Sulaiman and Ikonne (2022), and Ilesanmi (2023) documented average to high levels of technological usage for quality service delivery among library personnel.

Regarding the second objective, findings revealed that respondents identified several essential technologies for quality service delivery in libraries. The most frequently mentioned included laptops, desktops, tablets, and iPads, photocopiers, printers, scanners, uninterruptible power supplies (UPS), multimedia projectors, internet services, databases and OPAC. These results support Shabahat's (2015) findings, which highlighted that e-mail, OPAC, social media, and telephones were crucial technologies for delivering quality library services. Additionally, Omogbhe, Quadri, and Kutu (2020) identified internet connectivity, printers, projectors, and scanners as important technological tools necessary for enhancing the quality of services in institutional libraries.

Objective three revealed that the primary technologies employed by library personnel for quality service delivery were social networking sites and photocopiers. Respondents indicated that they frequently utilised other technologies daily, including printers, scanners, internet access, uninterruptible power supplies (UPS), and multimedia projectors. These findings align with the research conducted by Oyedipe and Popoola (2019), which reported that the majority of Southwestern Nigeria library personnel 86.3% used computer systems daily, while 67.7% regularly accessed internet facilities. Additionally, Yusuf and Fasae (2021) investigated ICT usage among library personnel in Ekiti, finding that 57.3% employed computer systems, 5.5% reported regular use of printers, and 2.7% utilised photocopiers daily. Many respondents also indicated that they used scanners, databases, and internet resources weekly, highlighting the crucial role of these technologies in their daily operations.

Concerning Objective four, several significant challenges were identified by the respondents. These included limited financial resources, outdated ICT equipment, high maintenance costs, insufficient skilled personnel, lack of regular training, poor maintenance of ICT equipment, inadequate ICT skills, and unreliable internet

connectivity. Such challenges echo the findings of Emmanuel (2017), who reported that low technology skills and inadequate ICT infrastructure, along with poor internet bandwidth, severely hindered the quality of services provided by library personnel. Moreover, Okere (2022) highlighted that Southwestern Nigeria Federal Colleges of Education professional librarians faced numerous obstacles, including poor internet access (mean score of 3.41), low bandwidth (3.35), inadequate financial support (3.23), and insufficient ICT facilities and infrastructure (3.16). These issues collectively impede effective ICT usage, ultimately affecting service delivery quality in libraries.

Conclusion

Through the study, it is established that library personnel in the selected higher education institutions exhibited moderate technological proficiency necessary for effective service delivery. Key tools identified for enhancing library services included laptops, desktops, tablets, photocopiers, printers, scanners, UPS, multimedia projectors, internet access, databases, and OPAC systems. Notably, printers, scanners, internet connectivity, UPS, and projectors were used daily, highlighting their significance in operations. However, several challenges hinder quality service delivery, including limited financial resources for modern equipment, obsolete ICT tools affecting efficiency, and high maintenance costs. Inadequate skilled personnel and insufficient training contribute to a skills gap, while poor maintenance, lack of ICT skills, and unreliable internet further complicate service provision. To overcome these challenges, institutions should invest in regular training and upgrade their technological infrastructure. Partnerships with technology providers could enhance access to advanced tools, and securing additional funding through grants would improve technological capabilities. Such strategic efforts could create a more efficient library environment, better equipped to meet the academic community's evolving needs.

Recommendations

In line with the outcomes of the study, the following are recommended:

1. The library management should continually encourage the library personnel in the sampled higher institutions libraries to frequently utilised technological tools so as to improve quality of services rendered to the clientele.
2. The library management should consider training library personnel so as to prepare them for any emerging technologies that is capable of enhancing quality services delivery in the sampled higher institutions libraries.
3. Library management should consider providing alternative power supply in terms of solar inverter that will foster technology infrastructure geared towards enhancing quality of services provision in the higher institutions libraries.
4. Higher institutions libraries should consider formulating functional policy that will motivate the library personnel in discharging their services effectively to their clientele in terms of timely promotion, recognitions and rewards, incentives, commendation letter among others.

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