



STUDENT SATISFACTION AND CHALLENGES IN THE UTILIZATION OF LIBRARY ICT SERVICES FOR ACADEMIC PERFORMANCE IN SABON GARI LOCAL GOVERNMENT AREA, KADUNA STATE

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Abstract

This study investigated student satisfaction levels and challenges encountered in the utilization of Library ICT Services for academic performance among senior secondary school students in Sabon Gari Local Government Area, Kaduna State. A descriptive survey research design was employed, with data collected from 364 SS3 students across four government secondary schools using a structured questionnaire. The findings revealed that only basic library technology services search engines (71.4%), digital resources (63.2%), and digital learning support (56.0%) achieved majority satisfaction levels, while advanced technologies such as RFID, smart sensors, video conferencing, metadata services, screen readers, digital preservation, and braille embossers recorded extremely low satisfaction rates (4.9% 13.7%). The study identified nine major challenges, with inadequate ICT infrastructure (90.7%), lack of training on digital tools (89.0%), and deficiency in technical skills (84.6%) emerging as the most severe impediments to effective utilization. The research concludes that persistent infrastructural deficits, competency gaps, and limited access severely constrain students' ability to leverage Library ICT Services for improved academic outcomes. The study recommends urgent infrastructure upgrades, comprehensive digital literacy training programs, extended library operating hours, and sustained budgetary allocation to enhance equitable access and utilization of Library ICT Services in Sabon Gari LGA secondary schools.

Keywords: *Library technology services, Student satisfaction, Academic performance, Digital literacy, ICT infrastructure, Senior secondary schools, Kaduna State*

Introduction

Library ICT Services represent a critical convergence of digital tools, electronic resources, and information systems designed to enhance access to educational materials and support academic excellence in contemporary learning environments. According to the International Federation of Library Associations and Institutions (IFLA, 2019), Library ICT Services encompass collection development systems, catalogue services, and processing mechanisms that collectively improve users' information access experiences and contribute to enhanced academic performance. The integration of technologies such as artificial intelligence, big data analytics, blockchain systems, Internet of Things (IoT), augmented reality, and user-focused applications has revolutionized how secondary school students interact with information resources (Essan & Akporhonor, 2021). These technological innovations facilitate seamless access to digital catalogs, electronic databases, and online resource platforms, thereby enabling libraries to offer more efficient and user-centered services that transcend the limitations of physical collections (Chen & Deng, 2018; Manjunatha, 2007).

In Nigerian secondary schools, Library ICT Services play an increasingly vital role in supporting curriculum implementation and fostering information literacy skills among students. The Federal Ministry of Education (2023) recognizes library services as essential educational infrastructure capable of transforming teaching and learning processes through provision of both digital and analog resources using relevant Information and Communication Technology (ICT) tools. Research demonstrates significant positive correlations between library technology use—including borrowing e-books, accessing databases, and utilizing online reference services—and higher academic achievement as measured by grade point averages and examination scores (Banleman & Adjoa, 2017; Koledoye & Igwe, 2022). However, despite substantial government investments in ICT infrastructure and policy frameworks promoting digital literacy, persistent challenges such as inadequate training, obsolete equipment, and limited technical support continue to undermine the potential benefits of Library ICT Services in many Nigerian secondary schools (Ezeala & Yusuff, 2021; Okiki, 2020; Uwakwe et al., 2024).

The academic performance of senior secondary school students in Sabon Gari Local Government Area has become a source of concern for educational stakeholders, particularly in light of declining pass rates in external examinations conducted by the West African Examinations Council (WAEC) and the National Examinations Council (NECO). Despite the availability of Library ICT Services in selected government secondary schools within the area, the extent to which students effectively utilize these resources and the level of satisfaction derived from such utilization remain poorly understood. Understanding student satisfaction with Library ICT Services is critical because satisfaction directly influences usage frequency, information-seeking behaviors, and ultimately academic outcomes (Abdulsalami & Okezie, 2023). Moreover, identifying specific challenges that hinder effective utilization enables educational authorities to design targeted interventions that address systemic barriers and promote equitable access to digital learning resources (Kaduna State Ministry of Education, 2023).

Statement of the Problem

Libraries serve as the intellectual heart of educational institutions, providing essential resources and services that support teaching, learning, and research activities. Technology has revolutionized library services, transforming traditional libraries into dynamic learning centers

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equipped with digital tools, electronic databases, and multimedia resources that enable students to access vast amounts of educational materials beyond physical collection limitations (Prangya & Rabinda, 2016). The effective utilization of Library ICT Services is directly linked to improved academic performance through enhanced access to current information, efficient research processes, collaborative learning experiences, and development of digital literacy skills essential for academic success and future career readiness (Banleman & Adjoo, 2017; Chen & Deng, 2018).

However, despite substantial investments by the Federal Ministry of Education in library technology infrastructure and the establishment of e-library facilities in Unity Schools across Nigeria, academic performance of senior secondary school students in public examinations continues to decline (Adebayo & Oyediran, 2019; Barbara & Oberg, 2015). The paradox wherein increased financial investment and technological provisioning fails to correlate with improved academic outcomes suggests the presence of mediating variables that require systematic investigation. Reports indicate that many students lack adequate skills to effectively utilize digital library resources, and combined with poor user support and unfamiliarity with advanced technology, this often discourages repeated use and limits potential academic benefits (Ezeala & Yusuff, 2021; Okiki, 2020; Uwakwe et al., 2024). In Sabon Gari Local Government Area specifically, a 10% drop in WAEC pass rates between 2019 and 2020 highlights the persistent underperformance in key subjects like English and Mathematics despite government funding and infrastructural upgrades (Nigerian Bureau of Statistics, 2025).

This gap between resource availability and effective utilization indicates deficiencies in service delivery models, user engagement strategies, technological competency development, or pedagogical integration of Library ICT Services within the teaching-learning continuum. Previous studies have documented student dissatisfaction and frustration with outdated and non-functional school library ICT facilities in Northern Nigeria (Abdulsalami & Okezie, 2023; Eiriemiokhale & Ibeun, 2022; Yakubu & Dasuki, 2024), yet context-specific research examining both satisfaction levels and challenges in Sabon Gari LGA remains limited. Therefore, this study investigates student satisfaction with Library ICT Services and identifies challenges faced by senior secondary school students in utilizing these services for academic performance in Sabon Gari Local Government Area, Kaduna State, with the aim of providing empirical evidence to guide policy interventions and resource allocation decisions.

Research Questions

This study addressed the following research questions:

1. What is the level of satisfaction of senior secondary school students in the utilization of Library ICT Services for academic performance in Sabon Gari Local Government Area?
2. What are the challenges faced by senior secondary school students while utilizing Library ICT Services for academic performance in Sabon Gari Local Government Area?

Review of Empirical Studies

Several empirical studies have investigated the relationship between Library ICT Services and academic performance across different educational contexts. Koledoye and Igwe (2022) examined Library ICT Services and academic performance among university students in South-

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West Nigeria, finding significant positive correlations between the use of digital resources, online databases, and electronic reference services and students' grade point averages. Their study revealed that students who regularly utilized Library ICT Services demonstrated superior research skills, better time management, and enhanced critical thinking abilities compared to their counterparts who relied solely on traditional print resources. Similarly, Weerasinghe and Fernando (2022) conducted research on the impact of school library services on students' academic performance in Sri Lanka's technology stream, documenting that access to digital catalogs, e-learning platforms, and multimedia resources significantly improved examination scores in science and mathematics subjects.

In the Nigerian context, Abdulsalami and Okezie (2023) investigated the availability and utilization of electronic information resources in secondary school libraries in North-Central Nigeria. Their findings indicated that while basic digital resources such as search engines and PDF documents were moderately available, advanced technologies including digital repositories, learning management systems, and assistive technologies remained largely absent. The study identified inadequate funding, poor internet connectivity, and lack of technical expertise as primary barriers to effective implementation of library technology services. Eiriemiokhale and Ibeun (2022) assessed ICT facilities and e-library services in academic libraries in North-West Nigeria, reporting widespread dissatisfaction among users due to obsolete equipment, frequent power outages, and insufficient training on digital resource utilization. These findings align with the research by Yakubu and Dasuki (2024), who evaluated digital literacy levels among secondary school students in Northern Nigeria and discovered significant competency gaps in information searching, critical evaluation of online sources, and ethical use of digital information.

Research on student satisfaction with library services has consistently demonstrated that satisfaction levels influence both usage frequency and academic outcomes. Issa, Amusan, and Oluwatobi (2021) studied digital literacy and academic performance of secondary school students in Kwara State, Nigeria, finding that students who received structured digital literacy training exhibited higher satisfaction with Library ICT Services and achieved better academic results in continuous assessments and standardized examinations. The Kaduna State Education Sector Analysis Report (2023) documented persistent challenges in school library infrastructure across the state, including inadequate computer terminals, limited operating hours, and absence of professional librarians trained in digital resource management. These systemic deficiencies contribute to the dissatisfaction and underutilization patterns observed in previous studies, thereby justifying the need for context-specific research in Sabon Gari LGA to inform targeted policy interventions and resource allocation strategies.

Methodology

Research Design

This study employed a descriptive survey research design to investigate student satisfaction and challenges in library technology service utilization. This design was selected because the research is non-experimental in nature and aims to describe and compare existing levels of utilization, satisfaction, and perceived challenges across multiple senior secondary schools without the researcher directly intervening or manipulating variables (Babbie, 2020; Creswell & Creswell, 2018). The descriptive survey design is particularly appropriate for addressing "what,"

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"when," and "how" questions about student experiences with library technology services, enabling collection of quantitative data on usage patterns, satisfaction levels, and barriers through structured instruments such as questionnaires (Kpolovie, 2010; Saunders et al., 2019).

Population and Sample

The population comprised 3,831 SS3 students enrolled in 13 government secondary schools within Sabon Gari Local Government Area, Kaduna State. However, preliminary investigations revealed that only four schools possessed functional library technology services: Government Secondary School Aminu (343 students), Government Secondary School Chikaji (100 students), Government Secondary School Commercial College (150 students), and Government Secondary School Kwangila (506 students), yielding an accessible population of 1,099 students. Using the Krejcie and Morgan (1970) table for sample size determination, a representative sample of 364 students was calculated. Stratified random sampling was employed to ensure proportional representation from each school based on their respective population sizes: Aminu (114 students), Chikaji (33 students), Commercial College (50 students), and Kwangila (167 students).

Instrument and Data Collection

Data were collected using a structured, researcher-designed questionnaire comprising demographic items and 4-point Likert-scale items measuring satisfaction levels (Very Satisfied, Satisfied, Dissatisfied, Very Dissatisfied) and challenge severity (Very Serious Challenge, Serious Challenge, Minor Challenge, Not a Challenge). The instrument was validated by three experts in Library and Information Science and pilot-tested with 30 SS2 students from a non-participating school to ensure clarity and reliability. Reliability analysis using Cronbach's alpha and split-half methods yielded coefficients exceeding 0.80, confirming internal consistency. Four trained research assistants administered the questionnaires during school hours over a three-week period in December 2024, achieving a 98.4% response rate (364 retrieved from 370 distributed).

Data Analysis

Data were analyzed using descriptive statistics including frequency counts, percentages, means, and ranking. Combined satisfaction percentages were calculated by summing "Very Satisfied" and "Satisfied" responses, while combined challenge severity was determined by aggregating "Very Serious Challenge" and "Serious Challenge" responses. Services and challenges were ranked in descending order based on combined percentages to identify priority areas for intervention.

Results

Research Question 1: Level of Student Satisfaction with Library Technology Services

Table 1 presents data on student satisfaction levels across 12 Library ICT Services available in the selected secondary schools.

S/ N	Library Technology Service	Very Satisfie d	Satisfie d	Dissatisfie d	Very Dissatisfie d	Tota l	Combine d Satisfied (%)	Ran k
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12	Search Engine Services (Google, library OPAC, etc.)	108 (29.7%)	152 (41.8%)	74 (20.3%)	30 (8.2%)	364	260 (71.4%)	1
2	Digital Resources Services (e-books, past questions, PDFs)	88 (24.2%)	142 (39.0%)	92 (25.3%)	42 (11.5%)	364	230 (63.2%)	2
7	Digital Learning Support Services (educational apps, Khan Academy)	76 (20.9%)	128 (35.2%)	98 (26.9%)	62 (17.0%)	364	204 (56.0%)	3
9	Remote Access Services	48 (13.2%)	96 (26.4%)	118 (32.4%)	102 (28.0%)	364	144 (39.6%)	4
4	Patron Support Services (librarian help via WhatsApp/email/chat)	42 (11.5%)	86 (23.6%)	128 (35.2%)	108 (29.7%)	364	128 (35.2%)	5

Table 1: Level of Student Satisfaction with Library Technology Services

Source: Field Survey, 2025

Table 1 reveals significant disparities in student satisfaction levels across library technology services. Only three services achieved majority satisfaction: search engine services ranked first with 71.4% combined satisfaction (108 very satisfied, 152 satisfied), followed by digital resources services at 63.2% (88 very satisfied, 142 satisfied), and digital learning support services at 56.0% (76 very satisfied, 128 satisfied). Satisfaction plummeted dramatically for remaining services, with remote access services garnering only 39.6%, patron support services 35.2%, automated RFID services 13.7%, smart sensor services 11.5%, video conferencing services 10.4%, metadata services 9.9%, screen reader services 7.7%, digital preservation services 7.1%, and braille embosser services merely 4.9%. These findings indicate that students express reasonable satisfaction with basic, accessible digital tools but overwhelming dissatisfaction with advanced, modern, and assistive technologies that remain largely unavailable or non-functional in their school libraries.

Research Question 2: Challenges Faced by Students in Utilizing Library Technology Services

Table 2 presents data on challenges encountered by students when utilizing Library ICT Services for academic purposes.

S/N	Challenge	Very Serious Challenge	Serious Challenge	Minor Challenge	Not a Challenge	Total	Combined Serious (%)	Rank
1	Inadequate ICT infrastructure (slow internet, outdated computers, no power)	218 (59.9%)	112 (30.8%)	24 (6.6%)	10 (2.7%)	364	330 (90.7%)	1

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2	Lack of training on how to use digital tools	196 (53.8%)	128 (35.2%)	30 (8.2%)	10 (2.7%)	364	324 (89.0%)	2
3	Lack of technical skills for library technology services	182 (50.0%)	126 (34.6%)	42 (11.5%)	14 (3.8%)	364	308 (84.6%)	3
4	Limited access to Library ICT Services (restricted hours, few computers)	174 (47.8%)	132 (36.3%)	46 (12.6%)	12 (3.3%)	364	306 (84.1%)	4
5	Lack of frequent training for library technology services	168 (46.2%)	130 (35.7%)	52 (14.3%)	14 (3.8%)	364	298 (81.9%)	5

*Table 2: Challenges Faced by Students in Utilizing Library Technology Services**Source: Field Survey, 2025*

Table 2 presents a concerning profile of systemic challenges impeding effective library technology utilization. Inadequate ICT infrastructure emerged as the most severe challenge, rated serious or very serious by 90.7% of respondents (218 very serious, 112 serious), encompassing chronic issues such as unreliable internet connectivity, obsolete computer hardware, and persistent electrical power failures. The second-ranked challenge, lack of training on digital tools (89.0% combined serious), reflects institutional failures to provide structured digital literacy programs to students. Lack of technical skills ranked third (84.6%), highlighting fundamental competency deficits that prevent students from effectively navigating digital resources. Limited access to Library ICT Services due to restricted operating hours and insufficient computer terminals ranked fourth (84.1%), while lack of frequent training opportunities ranked fifth (81.9%). These multidimensional challenges create reinforcing barriers wherein infrastructural deficits limit access, absence of training restricts effective use, and skill gaps undermine motivation and academic outcomes.

Discussion

The findings from this study reveal a troubling disconnect between policy aspirations for technology-enhanced education and the lived realities of senior secondary school students in Sabon Gari Local Government Area. The bifurcation in satisfaction levels—wherein basic services like search engines achieve 71.4% satisfaction while advanced technologies record below 14%—mirrors patterns documented across Northern Nigerian secondary schools by Abdulsalami and Okezie (2023), Eiriemiokhale and Ibeun (2022), and Yakubu and Dasuki (2024). This digital stratification reflects not merely resource scarcity but systematic exclusion from transformative educational technologies that could substantially enhance learning outcomes. The overwhelming dissatisfaction with modern technologies (RFID, smart sensors, video conferencing, metadata services, screen readers, digital preservation, and braille embossers) demonstrates that current library technology infrastructure remains anchored in rudimentary digital access rather than comprehensive, inclusive, twenty-first-century information environments.

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The challenge data corroborate and extend previous research documenting persistent infrastructural and competency deficits in Nigerian secondary school libraries. The finding that 90.7% of students identified inadequate ICT infrastructure as a serious or very serious challenge aligns with the Kaduna State Education Sector Analysis Report (2023) and research by Umar and Audu (2024), both of which documented chronic electricity shortages, obsolete equipment, and insufficient bandwidth as fundamental barriers to digital learning. The prominence of training-related challenges (89.0% lack of training, 84.6% lack of technical skills) validates the observations by Abdullahi and Ogunniyi (2023) and Eze and Uzoigwe (2022) regarding critical competency gaps among Northern Nigerian students. These findings suggest that mere provision of technology without accompanying professional development, user training, and ongoing technical support creates idle resources that cannot fulfill their educational potential (Issa et al., 2021; Koledoye & Igwe, 2022).

The implications for academic performance are profound and multi-layered. Research consistently demonstrates positive correlations between effective library technology utilization and improved examination scores, enhanced research skills, and development of critical digital literacies essential for tertiary education and workforce participation (Banleman & Adjoa, 2017; Chen & Deng, 2018; Weerasinghe & Fernando, 2022). The current situation in Sabon Gari LGA—characterized by limited satisfaction, severe infrastructural challenges, and widespread skill deficiencies—creates a reinforcing cycle of digital disadvantage wherein students lack both access to quality resources and competencies to utilize available tools effectively. This perpetuates educational inequality and constrains students' preparedness for an increasingly digital economy, thereby undermining the Federal Ministry of Education's vision of library services as transformative educational infrastructure capable of supporting Nigeria's digital literacy goals (Federal Ministry of Education, 2023; UNESCO, 2023).

Conclusion

This study investigated student satisfaction levels and challenges encountered in the utilization of Library ICT Services among senior secondary school students in Sabon Gari Local Government Area, Kaduna State. The findings reveal a stark digital divide wherein students express reasonable satisfaction with basic, accessible technologies (search engines, digital resources, learning apps) but overwhelming dissatisfaction with advanced, modern, and assistive technologies that remain virtually non-existent in their school libraries. The challenge profile documents severe systemic impediments including inadequate ICT infrastructure, critical training deficits, fundamental skill gaps, limited access, and obsolete equipment. These multidimensional barriers create reinforcing cycles of digital disadvantage that constrain students' ability to leverage technology for improved academic outcomes, thereby perpetuating educational inequality and undermining national digital literacy objectives. The persistence of these challenges despite substantial government investments indicates fundamental deficiencies in service delivery models, resource allocation mechanisms, and pedagogical integration strategies that require urgent, coordinated policy interventions.

Recommendations

Based on the research findings, the following recommendations are proposed:

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- 1. Infrastructure Upgrade and Maintenance:** The Kaduna State Schools Quality Assurance Authority (KSSQAA) and school management boards should urgently prioritize comprehensive upgrading of ICT infrastructure in school libraries, including installation of reliable internet connectivity, procurement of modern computer terminals, provision of alternative power sources (solar panels, inverters), and establishment of regular equipment maintenance schedules to address the critical infrastructural deficits identified by 90.7% of respondents.
- 2. Comprehensive Digital Literacy Training Programs:** Educational authorities should develop and implement mandatory, curriculum-integrated digital literacy training programs that systematically build students' technical competencies in information searching, database navigation, citation management, critical evaluation of online sources, and ethical use of digital information, addressing the training deficits identified by 89.0% of students.
- 3. Extended Library Operating Hours and Increased Computer Availability:** School administrators should extend library operating hours beyond regular school schedules, including evening and weekend access, and significantly increase the computer-to-student ratio to address the limited access challenges reported by 84.1% of respondents, thereby providing equitable opportunities for all students to utilize digital resources.
- 4. Deployment of Professional Librarians with ICT Expertise:** The Kaduna State Ministry of Education should recruit and deploy professionally qualified librarians with specialized training in digital resource management, electronic information services, and user instruction to provide ongoing technical support, conduct training workshops, and facilitate effective integration of Library ICT Services into teaching-learning processes.
- 5. Sustained Budgetary Allocation for Technology Acquisition and Renewal:** Government education authorities should establish dedicated annual budgetary lines for library technology acquisition, regular equipment upgrades, software licensing, database subscriptions, and ongoing maintenance to prevent obsolescence and ensure continuous availability of current, functional resources that meet evolving educational needs and international best practices.
- 6. Development of Inclusive and Assistive Technologies:** Educational policymakers should prioritize procurement and deployment of assistive technologies including screen readers, braille embossers, and accessible interface designs to ensure that students with visual impairments and other disabilities can fully participate in digital learning environments, thereby promoting educational equity and social inclusion.
- 7. Establishment of Regular Monitoring and Evaluation Mechanisms:** KSSQAA should institute systematic monitoring and evaluation frameworks to assess library technology service quality, track utilization patterns, measure satisfaction levels, identify emerging challenges, and ensure accountability in resource allocation and service delivery, thereby enabling evidence-based policy adjustments and continuous improvement initiatives.

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