



## **APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN ACADEMIC LIBRARIES IN KWARA STATE, NIGERIA: PROGRESS AND CHALLENGES**

By

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### **ABSTRACT**

*The study investigated application of Information and Communication Technology (ICT) in selected libraries in Kwara State. The descriptive survey design was adopted for the study and population comprised of seven (7) academic libraries in Kwara State. The study adopted purposive sampling technique to collect data required from the selected academic library staff in Kwara State. The total number of academic librarians in the selected academic libraries was 83. A census approach was used to cover all academic librarians. A self-developed questionnaire titled survey questionnaire on the application of information and communication technology on academic library services (SQAICTSAL) was used to collect data. Data were analysed using percentage and frequency count to answer the research questions. Result from the study shows that most academic libraries in Kwara State are in developed stage in terms of provision of ICT facilities. Despite this fact, the study reveal that majority of the surveyed academic libraries were lack computerized security door with 0.0% and smart board with 9.6% while the availability of all other ICT facilities was rated high especially computer system, CD/DVD, internet connectivity and slide projector with 100%, CCTV camera with 95.2%, electronic database with 92.8%, library automation software with 91.5% and barcode sensor reader with 73.5%. The study concluded that provision of adequate ICT facilities in academic libraries will revolutionised effective information service delivery and the advancement in the use of ICT in day-to-day operations in academic libraries will dramatically enhanced information provision to the library users. Therefore, the concerned library authorities*



*should provide proper support to the library professionals in the application of ICT and also provide opportunities for staff development on the use ICT through attendance to seminars, workshops and short courses to enhance their technical skills for proper implementation and provision of effective and efficient services to the library users.*

**Keywords:** Information and communication technology, Library services, Information services, Academic libraries, Kwara State, Nigeria

## **Introduction**

Information and Communication Technology (ICT) can be defined as the application of computers and other technologies for easy acquisition, organisation, storage, accessibility, retrieval, and dissemination of information. ICT is one of the greatest inventions of mankind which played unprecedented role in changing the landscape of human and organisational activities around the globe including libraries. ICT is also a revolution that provides the platform and technical means of handling information and communication for the benefit of mankind. The impact has been vital in all activities of humans such as banking, health, transportation, education and libraries. ICT has immensely changed the system of traditional library services; that were hitherto laborious, repetitive and boring. Obotu, Chukwuka and Gambo (2019) regard ICT as the acquisition, analysis, manipulation, storage and distribution of information; and the design and provision of equipment and software for these purposes. Omosor and Nelson (2017) defined ICT as computers and other technologies that are used in the acquisition, organisation, storage and dissemination of information in libraries. No doubt, ICT is a catalyst for generating, processing, storing and disseminating information (Kwofie, Aigbavboa & Thwala, 2020).

The convergence of ICT in academic libraries has brought about the maximum utilisation of all the technologies that enable the handling of information of various formats within the library. Onuoha and Obialor (2015) argued that ICT has influenced the traditional library services in the process of identifying, acquiring, processing, organizing, storing, retrieving and dissemination information. Supporting the assertion, Anunobi and Edoka (2010) reported that user expectations from any information providing system is to make resources available directly or remotely in real time and appropriate format. Notwithstanding, library routines are the major activities done in the library through the divisions or unit, such as acquisition, processing, storing, disseminating and preservation of information resources among others. While library operations are functions librarians carry out in the library on daily basis, such as selection, ordering, classification, cataloguing, charging and discharging of information resources in the various division of the library. Omini and Esin (2019) identified library operations that could be carried out with ICT, these include; acquisition, cataloguing, circulation, serials control, selective dissemination of information services and preparation of management information. According to Sokari, Olayemi and Abba Haliru (2019) using technologies on operations peculiar to the library has improved efficiency in resource organization service delivery and dissemination of information making them effective and easy while at the same time eliminating repetitive and routine tasks in the library.

According to Ogunsola and Aboyade (2015) librarians have begun to adopt new designations to reflect their new roles, i.e, information scientists, system librarians, digital librarians and information managers etc. Uzohue and Yaya (2016) observed that the common theme behind ICT application in the library is to enhance library functions and make service delivery such as selection, acquisition, arrangement, storage, retrieval, dissemination of information relevant to users. The library is the nerve centre of information activities; it is a depository of knowledge with varied and useful information in numerous formats. The core functions of all kinds of libraries are; acquisition, cataloguing, circulation, serials control, interlibrary loan, management and delivery of information in both electronic and traditional format. They assist in achieving the goals and objectives of their parent institutions through the provision of current and relevant information resources that are necessary for sustaining the learning, teaching, research, other functions and activities within the institutions.

Advancement in the provision of library services through the use of ICT have dramatically changed the system of information provision (Afolabi & Abidoye, 2011). The tasks of these libraries have been simplified by the use of ICT facilities in the acquisition, organization, management, and preservation of library resources among others. Oketunji (2012) noted that the library tasks have not been fully exploited because of its numerous challenges such as power failure, inadequate funds, computer system failure, staff attitude towards use of ICT, lack of ICT policies and shortage of competent staff to manage the ICT facilities, which hinder the application of ICT in many Nigerian academic libraries. Okiy (2015) asserted that libraries, as centres for learning, teaching and research can no longer cope with information management through the use of traditional methods; where the process of acquisition, processing and organisation of information resources may take up to six months before the patrons use them. Igun and Adogbeji (2017) stated that human capacity building is critical to the success of the ICT use. Even where funds and resources are readily available, libraries are expected to upskill their staff in order to enable them to perform better. Based on the identified gaps, the study seeks to investigate the application of ICT in selected academic libraries in Kwara State.

### **Objectives of the Study**

The general objective of the study is to assess the progress and challenges of information and communication technology in selected academic libraries in Kwara State, Nigeria. The specific objectives of the study are to:

1. ascertain the types of ICT facilities available in selected academic libraries in Kwara State;
2. examine the extent of ICT use in the selected academic libraries in Kwara State.
3. to identify operation performed with ICT in the selected academic libraries in Kwara State
4. identify the challenges of ICT use in selected academic libraries in Kwara State.

### **Review of Related Literature**

The development and availability of ICT in academic libraries today have not only increased and broadened the impact of information service but also brought services to users' doorsteps. Also, application of ICT in libraries placed more emphasis on effective and efficient information services. Their applications in libraries have indeed continued to



ease and promote quick and timely access to and transfer of information services that are found dispensed round the globe. In his study on the availability and use of ICTs in collection management, Egharevba (2018) listed the following ICT facilities used in the management of library resources to include computers, DVDs, CDs, Internet and telephones. deWatteville and Gilbert (2010) noted that the ICT includes; Computer, Internet, Digital camera, Webcam, Smart Card, Scanner, E-Books, Printers, Electronic Journals, WEB-OPAC, Animation, E-Mail, CD-ROM, DVD, RFID Technologies. Abdulwahab, Agun, Usman, Aliyu (2011) noted that in libraries, several systems have been developed for their various house-keeping chores and more still are being designed and refined due to the technology of large-scale integration. These are known as microcomputers; designed to handle any of the library processes like acquisitions, cataloguing, serials control, circulation control, bibliographic control, or Selective Dissemination of Information (SDI).

ICT is applied to the operation of libraries and information centres to ensure that information delivered is timely, accurate, precise and relevant (Adegoke, 2015). Abdulwahab et al., (2011) explained the concept of library automation that, in the traditional manual library system, staff performs the various tasks required to complete each operation, but if a computer is used to perform some processing operations, an automated library results. Adamou and Ntoka (2017) defined library automation as the use of computers and associated technology to do exactly what has been done in libraries with the justification of reduced cost and or increased performance. Thus, automation helps in the acquisitions, organisation, storage and dissemination of information in libraries. Generally, IT applies to library services in a number of ways, which include: Acquisition, Cataloguing, Circulation, Serials and User Services.

The demand for distant access to information in Nigeria is increasing, although this is still based on the traditional technology of print media. Thus, there is the need to integrate ICT into the library operations. Ogunsola (2014) noted that majority of higher institutions in Nigeria; even those with good Internet connectivity are still at a low level of integration of ICT in teaching, learning, research, library services, information and managerial services. Ekong (2015) pointed out, that in some of the first generation academic libraries (University of Benin Library, Benin, Kashim Ibrahim Library (ABU), Zaria, University of Nigeria Nsukka Library, Nsukka, and a few others), digitalisation is in place and library information networks are established with connectivity through the university campus network to the Internet. The Centre for Learning Resources (CLR) Covenant University, Ota, has been placed on the platform of full application of ICT because funds are made available for such innovation. Ogunsola (2014) explained that some Nigerian university campuses are now jam-packed with IT facilities. It is no longer strange to see lecturers and students doing their research and other works using various ICT devices like-mail and the Internet.

Students can access more information and take less time to do so with the use of ICT. Ogunsola (2004) declared that librarians or members of the community at Obafemi Awolowo university library can now easily find information concerning any book in the Library of Congress in the U.S. Libraries can be transformed into a new information services unit, providing electronic cataloguing, OPAC, electronic acquisition/serials control, electronic inter-library loan and calculation functions (Ogunsola, 2014). Nigerian academic libraries should not be left out of this global educational revolution. Ekong

(2015) pointed out that one is also happy to note that both the Federal Government of Nigeria and international funding agencies are very interested in the general development of ICT in Nigerian universities. The Federal Ministry of Education embarked on the establishment of the National Virtual (Digital) Library Project, to provide, in an equitable and cost-effective manner, enhanced access to national and international library and information resources and to share locally available resources with libraries all over the world using digital technology; among other objectives. A model Virtual (Digital) Library at the National Universities Commission (NUC) will be the laboratory of Nigerian university libraries.

Academic libraries in the Third World, including Nigeria are gradually but steadily converting from manual to computerised routines. The benefits of using ICT in a library system are both self-evident and overwhelming (Whong & Zakari, 2014). Library operations are the activities the librarians do on daily basis, such as selection, ordering, cataloguing and classification of information resources etc. In this age of information era, the library needs ICT in order to give efficient services to its users. Not only is the speed of its operation high, the volume of its output is correspondingly large. When ICT is used in the library, there is economy of labour and operating cost. In short, its application in the activities of the libraries will enhance information delivery and the overall performance of the library services.

### **Empirical Studies**

Odionye (2016) investigated the ICT usage and application in university of Nigeria, Nsukka library, with the aim of finding out the availability and usage of ICT facilities in this university, the study revealed that ICT facilities are available in UNN library but some are more available than others. The facilities mostly used are OPAC, internet and virtual library, which are used to source for reference materials, complete project work, up-date knowledge and lecture notes. The major challenge encountered in the use of ICT facilities as revealed by the findings, was irregular power supply and irregular cooling environment. Upon these findings, the study recommended among others the constant acquisition and provision of ICT facilities in the library by government and university management, and the provision of constant power supply in UNN library which will enhance effective functioning and usage of the ICT facilities.

A study by Enakrire (2015) focused on identifying the IT facilities available in KwaZulu-Natal and University of Ibadan libraries, revealed that (84.2%) of the universities in Nigeria had personal computer, (72.7%) used CD-ROM, (57.9%) used Local Area Network (LAN), Internet and e-mail facilities. The population of university libraries using Wide Area Network (WAN), fax machine and online public access catalog (OPAC) is below (50%). The implication for this is that communication technology has evolved in libraries which have led to the convergence of information and communication technologies to enhance effective library services.

The findings of Solarin (2013) on availability of ICT resources and services for uses by both faculty and students, showed that Covenant University library has very good ICT resources and Internet service has greater usage. This is also confirmed by Ilo and Ifijeh (2010), study that 94% of final year students at Covenant University indicated that the internet had greater impact on their projects. The Internet and its technology available in academic libraries continues to have a profound effect in promoting the sharing of



information especially in academic world, making possible rapid transactions among businesses and supporting global collaboration among individuals and organizations. Learning Resource Centres now often contain learning materials published on CD-ROM and most colleges and universities are connected to the Internet. But Ogunsola in his (2004) study confirmed that many academic libraries in Nigeria are yet to take advantages of modern ICT.

The study carried out by Ugwuanyi (2012) revealed that there are ICT facilities in the south-east universities studied as indicated by more than 75% of the respondents in each university. The facilities available are: computers, interconnectivity, LAN, CD-Writer, cataloguing software power point projector and scanner. The respondents equally agreed that they are functional where they are available but those who indicated not available automatically indicated not functional. The results for the analysis by Nwagbo and Ugwuanyi (2011) revealed that more than 75% of the respondents agreed that most of the ICT facilities are available and functional in University of Nigeria, Nsukka.

Also, Emojorho (2010) in a study on ICT and collection management in public libraries, found that only a few public libraries in the south-south, Nigeria are computerized and do make use of internet. Moreover, they are not adequately funded. Blakes (2006) in discussing the availability of ICT facilities and resource sharing noted that the ICT facilities in the Nigerian academic libraries are not adequate. The availability of ICT facilities is crucial in the present globalized world. However, it has been observed that most of the ICT facilities are lacking in most Nigeria universities. Onyeneke (2007) cited in Nwagbo and Ugwuanyi (2011) pointed out that the unavailability of some ICT resources such as internet, E-mail, computer conferencing, fax machines, digital cameras, digital scanner, online information sources, and others is the major problem and challenges facing the use of ICT in tertiary institutions in Nigeria. The researcher further noted that inadequate technological infrastructure to support the integration of ICTs in the library services manifests in poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of personal computers and their peripherals and low bandwidth.

Many Nigerian libraries, especially public and academic, face various challenges in their attempts to digitalize their library operations. These problems are not really of the library's making but it is the usual problem confronting most of the computer installations all over the country today, the shortage of manpower and lack of spare parts. However, the findings of Krubu and Asowaru (2011) revealed that inadequate training and retraining of staff by management; inadequate funding, epileptic power supply and lack of search skills are the major factors militating against the effective use of ICT in Nigerian academic libraries. Amongst others, inadequate funding, capacity building, regular power supply were recommended. Also Aina, Adigun and Ogundipe (2010) identified the negative laissez-faire attitude of lecturers, students, and libraries as other factors militating against the development and use of ICT in academic libraries in Nigeria. This researcher further pointed out the high cost of ICT training but opined that library staff and users should do something on their own to improve their IT skills. Womboh and Abba (2008) noted that a laissez-faire attitude of lecturers, students and even librarians by feeling that their employers should train them in ICT hinders ICT development in academic libraries.

Similarly, Krubu and Osowaru (2011) reveals some factors hindering the impact of ICT use in Nigerian academic libraries as lack of search skills, epileptic power supply,

expensive software and hardware, and huge amount of money spent to fuel generators. More so, the findings of Nwagbo and Ugwuanyi (2011) revealed that financial problems and poor ICT infrastructure are the most serious hindrances to the acquisition of ICT literacy skills as revealed by the study. Fagbami and Ogunjobi (2009) examined the availability of Information and Communication Technologies (ICTs) in Agricultural Research Institute in Ibadan. Findings showed that research scientist in the research institute have access to some ICT facilities like laptops and personal computers. Other ICT facilities were not available due to inadequate funding, poor infrastructure, lack of ICT trained personnel to manage ICT centres. Anunobi, Nwankwo and Benard (2011) surveyed eight academic libraries in South Eastern Nigeria to determine the state of ICT application including the availability of the hardware, software, e-resources and their challenges. The authors found out that many of the libraries especially those funded by the state government have no Internet, or LAN work station but have standalone computers. Though a few of the libraries subscribe to online electronic resources such as EBSCO host, Access to Global Online Research in Agriculture (AGORA), Health Internet work Access to Research Initiative (HINARI), Online Access to Research in the Environment (OARE) and The Essential Electronic Agricultural Library (TEEAL), most of their electronic resources are on CD-ROM.

The literature reviewed have shown that the inherent benefits and opportunities provided by information and communication technologies (ICT) which among other things has facilitated information service delivery as well as enhanced the library operations. The empirical studies conducted in various libraries in Nigeria, which were not related to any of the academic libraries in Kwara State, revealed the ICT availability, purpose of usage, the general impact of ICT on library service and user as well as the challenges encountered in the use of ICT facilities in Nigeria academic libraries. However, there are little or no literature on the operations performed with ICT facilities and the challenges associated with it in the selected academic libraries in Kwara State. It is therefore, this gap in literature that this study intended to provide through empirical research findings.

## **Methodology**

This study adopted the descriptive survey design which is the most appropriate when studying a phenomenon that tends to seek the opinion of the respondents without the researcher attaching his value (Siedlecki, 2020). It involves the collection and analysis of data about people or materials with the intention to compare existing and required standards and to identify information which is likely to be used to improve the existing condition of people or things. The descriptive survey is the most appropriate for the study because it enable the researcher to investigate the application of information and communication technology in academic libraries in Kwara State. The selected academic libraries surveyed are Kwara State University Library, University of Ilorin Library, Kwara State College of Education Library, Kwara State Polytechnic Library, Landmark University Library, Summit University Library, and Crown-Hill University Library.

The statistics of population were obtained from the management of the selected academic libraries involved in the study and the total population of the study was 83. The study adopted purposive sampling technique to collect data required from the selected academic library staff in Kwara State. The choice of these selected academic libraries was to generalize whatever result obtained among all other academic libraries with similar

background. The total number of librarians in the selected academic libraries was 83. A census approach to cover all librarians was used. This is because the population was limited. The major instrument that was used for data collection was questionnaire titled Survey Questionnaire on the application of ICT in selected academic libraries in Kwara State (**SQAICTSAL**). All of the copies of the questionnaire retrieved were validly completed and used in the analysis. The data collected were subjected to descriptive statistical analysis in relation to the research objectives.

## Results

**Table 1:** Distribution of Questionnaire Based on the Selected Academic Libraries (N=83)

S/No.		Frequency	Percentage
1.	UNILORIN Library	51	61.4
2.	Kwara Poly Ilorin Lib.	6	7.2
3.	College of Education Ilorin Library	6	7.2
4.	KWASU Library	10	12.0
5.	Landmark University Library	6	7.2
6.	Summit University Library	2	2.4
7.	CrownHill University Library	2	2.4
Total		83	100

Source: Field Survey (2019)

### **Objective 1: To ascertain the types of ICT facilities available in selected academic libraries in Kwara State**

To achieve this objective, the researcher used eleven items to represent and measure the availability of ICT facilities in the selected academic libraries in Kwara State. The results are shown in Table 2.

**Table 2:** Available ICT Facilities in the Selected Academic Libraries (N=83)

S/No.	Type of Available ICT Facilities	HA	A	DK	NA
		F (%)	F (%)	F (%)	F (%)
1.	Computer system	63 (75.9)	20 (24.1)	0 (00)	0 (00)
2.	CD/DVD	72 (86.7)	11 (13.3)	0 (00)	0 (00)
3.	Internet Facilities	55 (66.3)	26 (31.3)	0 (00)	2 (2.4)
4.	electronic Database	75 (90.4)	2 (2.4)	4 (4.8)	2 (2.4)
5.	Computerised security doors	0 (0.00)	0 (0.00)	20 (24.1)	63 (75.9)





6.	Bar code sensors/readers	54 (65.1)	7 (8.4)	17 (20.5)	5 (6.0)
7.	Slide Projector	71 (85.5)	12 (14.5)	0 (0.00)	0 (0.00)
8.	CCTV Camera	18 (21.7)	61 (73.5)	2 (2.4)	2 (2.4)
9.	Flat Screen TV	23 (27.7)	31 (37.3)	0 (00)	29 (35.0)
10.	Smart Board	5 (6.0)	3 (3.6)	20 (24.1)	55 (66.3)
11.	Library Automation Software	26 (31.3)	50 (60.2)	2 (2.4)	5 (6.1)

Source: Field Survey (2019)

Note: Highly Available (HA) and Available (A) were collapsed to “Available” Don’t Know (DK) and Not Available (NA) were collapsed to “Not Available”

Table 2 shows the responses of the respondents on the availability of ICT facilities in the selected academic libraries in Kwara State. It indicates that computer systems and CD/DVD are highly available with 83% and the internet facilities also have 83%. This is because computer system and internet facilities work closely with one another. It can also be observed from the table that most of these ICT facilities are available at these selected academic libraries but some are more available than others as revealed by the responses. Electronic database with 92.8%, barcode sensor reader with 73.5%, slide projector with 100%, CCTV camera with 95.2%, library, library automation Software with 91.5%. flat Screen T.V with 65%, Except for computerised security door with 0.0% response and smart board with 9.6% respectively. It is interesting to know that computers system, CD/DVD, internet facilities, electronic database, barcode reader, slide projector, CCTV camera, Flat screen TV and library automation software were highly available in the selected academic libraries. This may be due to efficiency and effectiveness that it brought to library service delivery couple with ease of use and its affordability by the management.

**Objective 2: To examine the extent of ICT use in the selected academic libraries in Kwara State**

For this research objective, data collected were analysed using frequency counts and percentage ratio to determine the extent of ICT use in the selected academic libraries. A summary of the analysis of data was presented in Table 3.

**Table 3:** Extent of ICT Use in the Selected Academic Libraries (N=83)

Type of ICT Facilities	Extent of ICT Use			
	Very Often	Often	Undecided	Rarely
1. Computer System	71 (85.5)	12 (14.5)	0 (00)	0 (00)
2. CD/DVD	11 (13.3)	17 (20.4)	28 (33.7)	27 (32.5)
3. Internet Facilities	54 (65.0)	24 (28.9)	2 (2.4)	3 (3.6)
4. Electronic Database	52 (62.6)	18 (21.7)	9 (10.8)	4 (4.8)
5. Computerised security doors	0 (00)	0 (00)	67 (80.7)	0 (00)



6. Bar code sensors/readers	28 (33.7)	7 (8.4)	30 (36.1)	18 (21.7)
7. Slide projector	50 (60.2)	26 (31.3)	5 (6.1)	2 (2.4)
8. CCTV	16 (19.2)	12 (14.5)	32 (38.6)	23 (27.7)
9. Flat Screen TV	31 (37.3)	23 (27.7)	15 (18.0)	0 (00)
10. Smart Board	0 (00)	0 (00)	48 (9.6)	0 (00)
11. Library Automation Software	38 (45.8)	15 (18.0)	17 (20.5)	13 (15.7)

Source: Field Survey (2019)

Note: "Very Often" and "Often" were collapsed to "Often" and "Undecided" and "Rarely" were collapsed to "Rarely"

Table 3 shows the ICT facilities that are mostly used in the selected academic libraries in Kwara State. A greater number 83(100%) of respondents indicate that computer systems were often used for library operations. This was followed by internet facilities with 78(93.9%) and slide projector with 76(91.5%). The findings also show that 70% of the respondents with the frequency of 70 also indicate that electronic database were often used in the library, followed with Library Automation Software with 63.8% with the frequency of 53. The findings further reveal that 66.2 of the respondents with the percentage of 55 indicate that CD/DVD is rarely used. The findings of the result also indicate that 80% of the respondents with the frequency of 67 indicate that computerised security doors were rarely used respectively. This is because; none of such ICT facility are available for use in the libraries studied. It was also revealed in the findings that 57.8% of the respondents with the frequency of 55 indicate that barcode sensor readers were rarely used. It was discovered from the findings that 66.3% of the respondents with the frequency of 55 indicates that they rarely use Closed-Circuit Television (CCTV) surveillance security system to safe-guard the library resources despite the security challenges in the country and users or library staff may be caught removing information resources out of the library. Lastly, the findings also revealed that 57.8% of the respondents with the frequency of 48 indicate that they rarely use smart board for library operations. This is coupled with the fact that most of the academic libraries staff are not skilled in the use of such technology.

**Objective 3: To identify operations performed with ICT in the selected academic libraries in Kwara State**

To achieve the research objective, eleven items were formulated; data collected were also analysed using frequency count and percentage ratio. The results were presented in the Table 4.

**Table 4:** Library Operations Performed with ICT in the Selected Libraries (N=83)

S/No.	Types of Library Operations	SA	A	D	SD
		F (%)	F (%)	F (%)	F (%)
1.	ICT is used for selection of library resources	48 (57.8)	27 (32.5)	6 (7.2)	2 (2.4)



2.	ICT is used ordering of information resources	48 (57.8)	25 (30.1)	3 (3.6)	3 (3.6)
3.	ICT is used to review publisher catalogue	39 (47.0)	36 (43.4)	8 (9.6)	0 (00)
4.	ICT is used for purchasing information resources	28 (33.7)	37(44.6)	12 (14.5)	3 (3.6)
5.	ICT is used for cataloguing /classification of information resources	29 (34.9)	27 (32.5)	7 (8.4)	21 (25.3)
6.	ICT is used for charging and discharging of information resources	13 (15.7)	9 (10.8)	34 (41)	27 (32.5)
7.	ICT is used library information resources statistics records	28 (33.7)	42 (50.6)	8 (9.6)	5 (6.0)
8.	ICT is used for marketing library and information products and services	19 (22.9)	28 (33.7)	21 (25.3)	15 (18.1)
9.	ICT is used for registration of library users	32 (38.6)	23 (27.7)	18 (21.7)	10 (12.0)
10.	ICT is used for fire and smoke detection	18 (21.7)	11 (13.2)	32 (38.6)	24 (28.9)
11.	ICT is used for surveillance of information resources on the shelves	6 (7.2)	12 (14.5)	34 (41)	22 (26.5)

Source: Field Survey (2019)

Note: Strongly Disagree (SD) and Disagree (D) were collapsed to “Disagree” Agree (A) and Strongly Agree (SA) were collapsed to “Agree”

Table 4 shows the opinion of respondents on library operations performed with ICT. The result revealed that 75(90.3%) of the respondents agreed that ICT is used for selection of library resources while 8(9.6%) disagreed. The result reveals further that 73(87.9%) of the respondents agreed that ICT is used for ordering of information resources while 6(7.2%) disagreed. Furthermore, 75(90.4%) of the respondents agreed that ICT is used to review publisher’s catalogue while 8(9.6%) disagreed. The result also indicates that 65(73.8) of the respondents agreed that ICT is used for purchasing information resources while 15(18.1%) of respondents disagreed. However, 56(67.4%) of respondents agreed that ICT is used for cataloging and classification information resources while 28(33.7%) disagreed. On the other hand, 61(73.5%) of the respondents disagreed that ICT is used for charging and discharging of information resources while 22(25.5%) agreed.

The findings also revealed that 70(84.3%) of respondents agreed that ICT is used for library information resources statistics records while 13(15.6%) disagreed. Also the findings from the study further revealed that 47(56.6%) of respondents agreed that ICT is used for marketing library and information products and services while 36(43.4%) with the frequency of 36 disagreed. The finding also revealed that 55(66.3%) of the respondents agreed that ICT is used for registration of library users while 28(33.7%) disagreed. The result further revealed that 56(67.5%) of respondents disagreed that ICT



is used for fire and smoke detection while 29(34.9 %) agreed. On the other hand, (67.5%) of respondents disagreed that ICT is used for surveillance of information resources on the shelves while 18(21.7%) respondents disagreed.

**Objective 4: To identify the challenges of ICT use in the selected academic libraries in Kwara State**

To achieve this objective, respondents were asked to list the challenges they face in the use of ICT. The challenges listed were summarized into 6 major categories and were analysed based on the Friedman Test. The results are shown in Table 5.

**Table 5:** Challenges of ICT Use in the Selected Academic Libraries (N=83)

S/No.	Challenges	Frequency	Percent
1.	Lack of ICT compliance	8	9.6
2.	Inadequate suitable I.T infrastructure and system failure	18	21.7
3.	Inadequate skilled I.T personnel	19	22.9
4.	Lack of proper IT policy	11	13.3
5.	Technophobia	9	10.8
6.	Poor attitude towards ICT use	12	14.5
	Unstable power supply	6	7.2
	Total	83	100

Source: Field Survey (2019)

Tables 5 reveal the challenges of ICT use in the selected academic libraries in Kwara State. Majority of the respondents 19(22.9%) indicates that inadequate skilled I.T personnel are the highest challenge they encounter in the use of ICT. This was followed by inadequate suitable I.T infrastructure and system failure with (21.7%). Furthermore, 12(14.5%) of respondents also indicate poor attitude towards ICT as one of the challenges of ICT use. The findings also reveal that 11(13.3%) of the respondents indicate that lack of proper I.T policy is also among the challenges facing the use of ICT. It was also revealed from the findings of the study that 9(10.8%) of respondents indicate that technophobia is among the militating factor battling the use of ICT in the selected academic libraries. Lack of ICT compliance was also indicated by 8(9.6%) of the respondents, while 6(7.2%) of the respondents indicate that unstable power supply among the challenges facing the use of ICT.

**Discussion of the Findings**

From the information gathered and analysis made, it is observed that ICT facilities are available in all the selected academic libraries in Kwara State, but some are more available than others as revealed by the findings. From table 2, respondents indicated that slide projector, CCTV camera, electronic database, library automation software, computer system, CD/DVD, internet facilities, barcode sensor reader and flat screen TV are highly available while respondents indicated the provision of smart board and computerised security door were least available. This finding is in consonance with study conducted by Odionye (2016) which revealed that there are ICT facilities in the UNN as indicated by the higher percentage of the respondents. Also, personal observation and interview conducted with UNN librarian confirmed the availability of ICT facilities, though some are more available than others.



On the extent of ICT use, greater number of respondents indicate that computer systems, and internet facilities were often used for library operations, followed by slide projector, electronic database and library automation software. This finding is in consonance with the study conducted by Yusuf and Iwu (2010) that a significant percentage of respondents used OPAC. Another qualitative study conducted by Odionye (2016) revealed that there is wireless network and ubiquitous access to internet on campus. The ICT facility that has the lowest use by respondents is computerized exit door and barcode sensor reader, CCTV camera, smart board. The reason could be attributed to lack of awareness or irregular need of these facilities. This finding also corroborate with the study conducted by Obotu, Chukwuka and Gambo (2019) which revealed that the major reason why most respondents do not use ICT facilities is that they do not have access to internet usage because of phobia of using it, the study confirmed that most of the respondents are not ICT literate and there is inadequate ICT facilities in the libraries.

Also, on the library operations performed with ICT by the selected academic libraries in Kwara State. The findings revealed the opinion of respondents on library operations performed with ICT. The result revealed that majority of the respondents agreed that ICT is used for selection of library resources, ordering information resources, review publisher's catalogue, purchasing information resources, cataloging and classification information resources, library information resources statistics records, marketing of library and information products and services, registration of library users while a great significant respondents disagreed that ICT is used for fire and smoke detection, charging and discharging of information resources, surveillance of information resources on the shelves. The reason could be because users have to be ICT compliant before they can use it for any operation in the library. This finding is in compliance with the study conducted by Omini and Esin (2019), the findings of their study showed that there is a significant influence of use of ICT facilities on library operations. This is because the way librarian organizes their job operations for academic performance could be very crucial to their overall performance. Also, Krubu and Asowaru (2011) study confirmed that ICT has an enormous impact on Nigeria academic libraries and their uses are based on its effectiveness.

Apart from the benefits offered by these ICT facilities, respondents revealed the challenges encountered in using ICT in the selected academic libraries in Kwara State. Respondents indicated that inadequate skilled manpower and inadequate suitable I.T infrastructure and system failure is the highest challenge encountered in the use of ICT in the selected academic libraries in Kwara State. This was followed by poor attitude towards ICT use. The least percentage is lack of ICT compliance and unstable power supply. Attitude of library staff towards ICT use and lack of proper I.T policy are among the common challenges encountered as indicated by the respondents. The findings of the study corroborate with the study conducted by Sokari, Olayemi and Abba Haliru (2019) that unstable power supply, inadequate ICT facilities constitute among the militating factors against the application of ICT in academic libraries, another study conducted by Balarabe (2015) confirmed that Inadequate ICT infrastructure, inadequate ICT literacy skills and lack of proper IT policy are the most serious hindrance of application of ICT in libraries. The implication of these challenges is that the applications of ICT in academic libraries in Kwara State are commendable but more has to be done to improve on the



provision and use of the facilities by the academic libraries, especially in this era of technological innovation.

### **Conclusion**

Despite huge benefits provided by ICT, some academic libraries are yet to be fully equipped and where they are fully equipped, the extent of some of these ICT use is low. It is obvious from the study that ICT set a greater pace by playing a prominent role in the promotion of library and information services. While the success of most academic libraries is largely dependent on the effective and efficient use and implementation of modern ICT facilities, it is indeed important for academic libraries to fully deploy its usage. The present study indicates that most academic libraries in Kwara State are already in developed stage in terms of provision of ICT facilities, its extent of use, implementation and operation of library services. Although, the surveyed selected academic libraries have some of these facilities in place but not all were fully exploited for library operations. Some of the surveyed selected academic libraries are yet to fully exploit available ICT facilities which include CD/DVD, computerized security door, barcode sensor reader, CCTV camera and smart board. Based on these findings, the study concluded that provision of adequate ICT facilities in academic libraries in Kwara State will revolutionise effective information service delivery and the advancement in the use of ICT in day-to-day operations in libraries which will dramatically enhance information provision to the library users.

### **Recommendations**

Based on the findings, the following recommendations were made:

1. The academic libraries should acquire relevant ICT facilities to enhance the library operations and the parent institution should increase their budget to libraries in order to enable them provide and maintain their ICT facilities.
2. Library authorities should intensify effort on the constant acquisition and provision of ICT facilities to libraries, especially academic libraries in Kwara State.
3. The academic library authorities should provide proper support to the library professionals in the application of ICT and also provide opportunities for staff development on the use of ICT through attendance to seminars, workshops and short courses to enhance their technical skills for proper implementation and provision of effective and efficient services to the library users.
4. The concerned authorities should also formulate helpful ICT policies and increase their budgets to libraries in order to enable them provide and maintain their ICT facilities.
5. Proper initiative should be taken on the part of the policy makers for making stable policies for libraries for implementation of ICT and its maintenance.
6. There should be provision of constant power supply in academic libraries in Kwara State and others which will enhance the effective use of ICT facilities. This is the only way through which the effective usage of ICT in Nigerian academic libraries can be guaranteed.



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