

## **Information and Communication Technology Resource Support Availability, Utilisation and Proficiency Skills among University Libraries: The Lagos State University Experience**

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**Abstract:** The emergence of information and communication technology has served to integrate higher education programs into a global village. Such that anyone or any organisation, the library in particular who ignores ICT in this century is likely to be sidetracked, irreparably outdated and grossly limited in the acquisition of skills needed for sourcing information. This study involved a survey to examine the ICT resource support availability, utilisation and proficiency among university libraries in Nigeria, with special reference to Lagos State University (LASU). The population for the study consisted of 240 sample respondents. Data were collected through a 20 items questionnaire constructed and validated with a reliability coefficient of 0.68. The data collected were analysed using the frequency count and  $\chi^2$ -test. The findings revealed that the ICT resource support availability in the university was adequate; the actual use of ICT was to search for journal articles, to access reference materials, to conduct research and to send e-mails. However, patrons proficiency was inadequate. The constraints on the use of ICT resource support were also significant. It is therefore recommended that libraries in Nigeria take advantage of these technologies, invest more on latest ICT resources, organise training programs and catch up with the technological world.

**Key words:** Emergence, communication, frequency, significant, libraries, invest

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### **INTRODUCTION**

A recent trend in higher education programs is the increase in the range of Information and Communication Technology (ICT) knowledge, skills and experience which are generally higher than those in other subject areas. This may be partly explained by the greater emphasis on ICT use in education. ICT integration in higher education programs during this new century is a concept is not new in international organisations although on the world scene, it has been known by different names. Those who are familiar with the industrialisation of Europe and America will recall that writings of Adam Smith in the wealth of Nations. When the doctrines of globalisation and liberalisation were the order of the day. As governments all over the world increased their interest in the development and expansion of education, health, security, commerce and trade, ICT became the norm following the worldwide integration among countries. It also became a popular concept in the final two decades of the last century and its emergence could be attributed to a number of interrelated factors. i.e., social, economic and technological changes of the past decades are providing

more education and training for all than ever before. Yet education systems worldwide are struggling to afford educational opportunities to all, to provide their graduates the necessary knowledge and skills for evolving marketplaces and sophisticated living environments and to prepare citizens for the challenges of global learning initiatives.

To meet these challenges, countries must currently focus on expanding access, improving internal efficiency, promoting the quality of teaching and learning and improving system management (Haddad and Junch, 2007). Accordingly, quality education is regarded as the main instrument for social, political and economic development of a nation. Thus, the strength, security and well-being of a nation rest squarely on the quality of education provided to its citizens. Education has therefore continued to be a great asset to many as well as a steady source of manpower for the national economy, especially in the West; education is seen and accepted as an effective instrument for success. Therefore, it is essential that we recognise that learners are an indispensable part of the ICT teaching and learning process that is necessary to improve the standards of education.

In Nigeria, changes in higher education and globalisation have caused a radical change in university libraries within the past 5 years. There has been a dramatic adoption of ICT in Nigerian libraries and this has led to widespread globalisation of library services in the country. The term globalization is used to describe the ability to access information using telecommunication based Internet resources. It provides the ability to create, organise, manipulate and access information from remote locations across the globe in a matter of seconds. The importance of information infrastructures and networks such as the Local Area Networks (LAN), virtual libraries and other virtual structures in accelerating the globalization of library services and the attendant transformation of library practices in the country cannot be over-emphasised. Stevens (2006) highlighted Oxford University, Cambridge University, Harvard University, the University of Illinois at Urbana-Champaign, the University of Ibadan and the then University of Ife (now Obafemi Awolowo University, Nigeria) as centres of academic research at which traditional librarianship was practiced. Oyinloye (1999) stated, Libraries of today have shifted from the conventional libraries where basically books and other printed texts are acquired, arranged, consulted and borrowed (ICT) is responsible for the changing role of the traditional library setting from the handling of information packaged in books to that of the computer network dealing with all forms of knowledge across international boundaries (Ani, 2005).

Within a relatively short period of time, the internet has become a resource for information on every conceivable subject. It is also seen as the means to bridge the knowledge gap between the developed and developing world and promote the equal distribution of information. According to Okebukola (2002), the need for the globalisation of library services in Nigeria arises because no single library can be completely sufficient in terms of its acquisitions and he posits that the networking of libraries (library cooperation and integration) will ensure that network members make up for their own shortfalls with the strengths of others. That is collections that are not available locally can be accessed from other libraries having such collections within the framework of network or library cooperation. The implication of this phenomenon is that library patrons in any given library can have access to the resources or information from other libraries, both within and outside the country (where there is interaction) through the use of relevant ICTs.

For instance, some university and research libraries in Nigeria have recently been registered with AGORA (Access to Global Online Research in Agriculture). A researcher in any of these libraries can access relevant research information from the AGORA database. Because of the existing cooperation among the AGORA publishers and other database providers or publishers (e.g., CAB,

AGRIS, HINARI, BLACKWELL, ELSEVIER, etc.), it is possible for researchers to have access to these database through AGORA from any of the registered libraries. Academics and researchers in Nigeria now also have access to academic resources in the National Virtual Library which is run by the National Universities Commission (NUC). It is hoped that when other virtual libraries effectively evolved in Nigerian universities, there will be more global interaction among them in order to best serve their clientele (Ani *et al.*, 2005). Nevertheless, significant progress will have to be made before Nigeria higher education students reach the main-stream of the digital revolution because library services require more global networking, ICT resource support availability and training in the delivery of the provided. In light of these needs, libraries have a major role to play in the development of higher education by providing access through library networks to the tremendous potentials for sharing knowledge. In education, ICT has become a tool for pedagogical practices for obtaining learning resources and for the personal development of users including the academic staff. It is the responsibility of system librarians to ensure that the methods with which patrons are taught to use library ICTs are firmly rooted within the relevant subject' for academic purposes, the ICT requirements involve more than just skill acquisition: users need to develop understanding of a wide variety of pedagogical experiences. ICT standards have to be interpreted within the context of teaching and learning process and a course must be planned and developed to meet these (new) requirements. Librarians and patrons must therefore be aware of the potentials and limitations of ICT, as well as skills required to use ICT, librarians must be able to assist library users to search for and find high-quality information in a quick and effective way.

Despite the opportunities and benefits there is no doubt that there are a many challenges facing the ICT integration of global library services in Nigerian universities at this century. According to Idowu (2009), it is imperative that all library staff be skilled in web technology and adopt these new skills to assist library users in an ICT environment. In addition, librarians must be more assertive and confident in their professional duties. Training and retraining of staff would go a long way in redressing these challenges. These problems which are not unique to the Lagos State University Library exist in many Nigerian libraries in different degrees; the knowledge of ICT for library operation in this global age implies familiarity with the workings of ICT resources support for the provision of high-quality effective library information services via the internet. Students who are not familiar with the routines of ICT are usually frustrated and anxious and exhibit avoidance behavior. Because Nigeria university students likely exhibit some of these problems associated with ICT

because of the resource support availability, utilisation and skills required, we can learn from the results of this study and prevent against such shortcoming in our environment. Therefore, Nigerian academic libraries must improve themselves and compete effectively in order to remain relevant.

#### State of ICT facilities in the Lagos State University (LASU) library:

The Lagos State University (LASU) library system comprises the following libraries: Fatiu Ademola Akesode, the main library on the Ojo campus, four other branch libraries i.e., The-Taslim Olawale Elias Law library on the Ojo campus, Adebola Adegunwa School of Communication (AASOC) library on the Surulere campus, the Engineering library on the, Epe campus and the Medical library on the Ikeja (LASUCOM) campus. There are nine other external system libraries namely, the Agege, Ikorodu, Isolo, Festac, Badagry, Lekki, Ikoyi, Anthony and Jibowu libraries. The LASU main library is a hybrid i.e., it has collections in various formats. These include electronic resources and databases and the other print formats. The whole campus has wireless internet access. Staff and students can access the library from any part of the campus. According to Idowu (2009), the fatiu Ademola Akesode academic and research libraries (LASU main library) began deploying ICT in 2000. A chronology of activities is shown in Table 1.

The use of ICT is inevitable for any library in modern times. The problems associated with adopting ICT in Nigerian Libraries are numerous but are not insurmountable for the determined LASU library. LASU library management has been making a concerted effort to automate its operation and provide electronic library services to its clients. The library achievements in this direction so far include the following:

- The provision of an uninterrupted power supply system for the library
- The procurement of quality computer hardware resources to boost the library operations and the installation of Alice for Windows and OPAC library software for patrons
- The training of patrons in the-use of the library's e-resources
- The networking of library departments, offices and units within the university main library
- The establishment of 92 and 25 seat capacity e-Library sections consisting of state of the art facilities with internet services designed with the furniture
- Subscriptions to over 25 academic website to support teaching, learning and research purposes
- The provision of information librarians and technicians to manage e-resources and equipment for better effective and improved performance

Table 1: A brief chronology of the use of ICT in the LASU Library

Periods	Activities
2000	Deployment of computer hardware and software system to aid library operations in different units, departments and offices
2002	Facsimile electronic document delivery system in use at the library
2003	On line Public Access Catalogue (OPAC) in use at (LASU) library
2004	Management Information System (MIS) Room and server secured for library operations and services
2005	On-line registration of students
2007	Establishment of 92 and 25 seaters e-Library aquatically designed for undergraduate and post-graduate students within the library
2008	Bibliographic Network (world wide web WWW) internet-in progress
2009	Creation of the LASU library web-site
<b>Other initiatives in the pipe line</b>	
2009	Establishment of a virtual campus (e-campus) using Web Based Technology (WBT)
2009	E-mail account for all registered students
2009	Subscribing to e-books via Elsevier etc.

Survey conducted February in 2010

A list of ICT facilities in use at the LASU library, as revealed by a survey carried out in February 2010 (Table 2).

**Statement of problem:** The challenges of ICT resource support for library services in this century are not unique to the Lagos State University. They are likely found to different degrees in many academic libraries of higher learning in Nigeria. It is of great concern of this study to address the above challenges from the following viewpoints:

- ICT resource support accessible to patrons of the LASU Library
- The purpose of ICT resource support services
- Required ICT utilisation skill for information sourcing
- Constraints encountered in the use of ICT resource support

**Research questions:** The following research questions have been formulated to guide this study:

- What resource support is accessible to patron for the use of ICT for library services?
- What is the competency level of patrons in ICT utilization for information sourcing and retrieval purposes?
- For what purpose(s) do patrons used library ICT support services?
- What constraints are encountered in the use of ICT services?

Table 2: ICT facilities in use at the LASU Library

Department, offices and sections	Computer	Printer	Photocopy machine	LAN	Internet service	Multi media projector	Smart board	TV	Software
UL office	4	2	1	-	4	1	-	2	-
DUL office	2	1	1	-	2	-	-	1	-
Admin office	2	1	-	-	1	-	-	-	-
Acquisition and Dev. office	1	1	-	-	1	-	-	-	-
Technical services	6	1	1	3	6	-	-	1	Alice for window
Readers services	6	2	2	6	-	-	-	-	Alice and OPAC
E-Library section	92	-	-	-	92	-	-	-	-
Conference room	6	-	-	-	6	1	1	-	-
PG library	25	1	1	-	25	-	-	-	-
Total	144	09	6	09	133	02	01	04	02

Survey conducted February, 2010, ULI-university librarian, ULI-deputy university librarian

### Research hypotheses:

- Availability of ICT resource support for library operations has no significant effect on patrons' accessibility to global information
- Competency level of patrons will not significantly affect ICT utilization for information sourcing and retrieval
- Purpose for which library patrons uses ICT resource support will not have any effect on the library services
- Constraints encountered by patrons in the use of Library ICT will not have any effect information sourcing and retrieval

## MATERIALS AND METHODS

**Design:** The design adopted in the study was a descriptive survey aimed at evaluating the ICT resource support availability, proficiency, utilisation and constraints encountered by patrons in academic institution libraries.

**Target population:** The target population employed consisted of all academic libraries at higher institutions in Nigeria.

**Population and sample:** The purposive random sampling technique was used by the researcher to select the sample. In all, a total of 240 respondents were sampled and used for the purpose of this study.

**Research instrument:** The researcher adopted a structured questionnaire to obtain relevant information about the topic of the study. A five point Likert scale was used. The validation and reliability of the instrument were achieved by expert criticism and correction while frequent count and Chi-square test were used for data analysis.

**Data analysis:** Data from the questionnaire were used to test the formulated hypotheses.

Table 3a: Observable response

Status	No. of respondents
SA	72
A	104
UND	12
D	28
SD	24

E = 240/5 = 48

Table 3b: Chi-square contingency table

O	E	(O-E)	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
72	48	-12	144	3.00
104	48	- 06	36	0.75
12	48	-42	1764	35.75
28	48	-34	1156	24.10
24	48	-36	1296	27.00

X<sup>2</sup> call = 91.6, X<sup>2</sup> tab = 9.49, DF = 4, SL = 0.05

Table 4a: Observable response

Status	No. of respondents
SA	77
A	92
UND	30
D	25
SD	16

E = 240/5 = 48

Table 4b: Chi-square contingency table

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
77	48	29	841	17.50
92	48	44	1936	40.30
30	48	-18	324	6.75
25	48	-23	529	11.00
16	48	-32	1024	21.30

X<sup>2</sup> call = 96.9, X<sup>2</sup> tab = 9.49, DF = 4, LS = 0.05

### Test of hypotheses

**Hypotheses 1:** The availability of ICT resource supports for library operations has no significant effect on the patrons' accessibility to global information (Table 3a, b).

**Hypothesis 2:** The competency level of ICT resource support services will not have any significant effect on the utilisation level for effective information sourcing and retrieval (Table 4a, b).

**Hypotheses 3:** The purpose for which library patrons use ICT resource support will not have any effect on the library services.

**Hypotheses 4:** Constraints on the use of library ICT support services will not have any significant effect on information sourcing and retrieval.

## RESULTS AND DISCUSSION

**From Table 1:** The future of the LASU library is being shaped today by the adoption of emerging technology that has been transforming the way information is created and disseminated since 2000.

**In Table 2:** The provision of computing facilities in the LASU library must be appropriate, the hardware and software adequate and the bandwidth accommodating to the population of users.

Careful planning, well thought-out investments and the concerted effort of the university librarian are the only requirements for a good ICT deployment (LASU) library services at this global age.

**Hypotheses 1:** Because the calculated  $\chi^2$ , 91.6> was greater than the table  $\chi^2$  9.49 (Table 3b), therefore the null hypothesis was rejected and accepted the alternative that the availability of ICT resource supports for library operations has a significant effect on students accessibility to global information sourcing and retrieval. Thus showing that the success of higher education globalization depends on the ICT resource support for library operations for users is of utmost importance.

**Hypotheses 2:** In Table 4b, the calculated  $\chi^2$  was greater than the table  $\chi^2$ , we therefore rejected the null hypothesis ( $H_0$ ) and accepted the alternative hypothesis ( $H_1$ ) which states, the utilization of (ICT) resource support has a significant effect on the competency skills of library patrons for effective information source and retrieval. Thus, this demonstrates that efficiency skill and effectiveness increases the productivity of patrons for information sourcing in the library.

**Hypotheses 3:** The calculated  $\chi^2$  was 142.8 while the table  $\chi^2$  was 9.49. Therefore, the null hypothesis was rejected. This demonstrates that the purpose for library patrons uses e-library resources support, namely, to search for journal articles, access reference material, conduct research and send e-mails is greatly influenced by the use of ICT for library services in the LASU organisation.

**Hypotheses 4:** Because the calculated  $\chi^2$  was 133.5 and the table  $\chi^2$  was 9.49, the null hypothesis was rejected.

This demonstrates that constraints encountered in the use of library e-resources have a major role/impact adequate, prompt and effective use of library services in the university. ICT is an influential instrument for the development of quality teaching and learning in educational systems around the world and a for the fundamental transformation of existing school practices for the preparation of students for innovation in the global arena.

Achievements in ICT penetration and usage in Nigerian education programs, especially in library services are dependent on recognition by the federal and state government of the importance of ICT-applications in education for sustainable development, leading to useful policies and sufficient funding for the institution.

It is evident that student in Nigeria higher institutions are already farther behind their peers in developed countries thus widening the global digital divide (Aduwa-Ogiegbaen and Iyamu, 2005).

Therefore, the federal and state governments through the National Universities Commission (NUC), the National Commission for Colleges of Education (NCCE) and the National Board for Vocational Colleges and Technical Education (NABTECH) need to invest heavily in educational institutions.

Efforts in this area will create an environment that enables learners to become highly qualified ICT literates who assists in the successful integration and usage of ICT-based library services for the purpose of the globalisation of education.

This study examined the impact of ICT resource support availability, utilization and proficiency among patrons of universities library. The organisation case study was the Lagos State University (LASU) in Ojo Lagos. From Table 1, it was shown that the performance in the LASU library was central to the adoption and provision of ICT for library services and operations.

It was also shown from Table 2 which Lagos State University has a total of 144 computers with 09 local area network and 138 internet ready systems recorded along with nine printers of various sizes and capacities, four colour television sets, six photocopy machines, two multimedia projectors with one smart board in use in the conference room.

The Alice for Windows and OPAC software's were used to coordinate the library operation and services rendered with six systems dedicated to the On-line Public Access Catalogue (OPAC), 25 internet-ready computer systems at the Post Graduate (PG) library and 92 internet-ready systems in the e-library section, there were Internet

Table 5a: Observable response

Status	No. of respondents
SA	69
A	100
UND	25
D	32
SD	14

$$E = 240/5 = 48$$

Table 5b: Chi-square contingency table

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
69	48	21	441	9.1875
100	48	52	2704	56.3333
25	48	-23	529	10.8333
32	48	-16	256	5.3333
14	48	-34	1156	24.0833

$$X^2 \text{ call} = 142.8, X^2 \text{ tab} = 9.49, DF = 4, SL = 0.05$$

Table 6a: Observable response

Status	No. of respondents
SA	74
A	106
UND	18
D	23
SD	19

$$E = 240/5 = 48$$

Table 6b: Chi-square contingency table

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
74	48	26	676	14.1
106	48	58	3364	70.1
18	48	-30	900	-18.8
23	48	-25	625	-13.0
19	48	-29	841	-17.5

$$X^2 \text{ call} = 133.5, X^2 \text{ tab} = 9.49, DF = 4, SL = 0.05$$

services in all the departments and offices of the library to facilitate the on-line searching, cataloguing and readers services among other purposes (Table 3-6).

### CONCLUSION

The study tested four hypotheses and all four null hypotheses were rejected. It was therefore concluded that ICT resource supports availability, utilisation and proficiency among patrons of higher education institutions have significance effects on library services and operations during this age of globalisation.

### RECOMMENDATIONS

Based on the findings and conclusion of this study, the following recommendations were proffered:

- All academic libraries in Nigeria must provide patrons access to library data bases (Internet) and to ensure that information from data base flows from Nigerian institutions to the global databases for accessing via the Internet

- Library management should continue to put pressure on organisational management and Non Governmental Agency (NGO's) to invest more in the latest advances in ICT equipment which will promote the globalisation of higher education library services in this millennium This includes alternative and independent means of access to the information super-highway, through such means as the millennium library complex, quality hard-ware and software, satellite communication, uninterrupted power supplies and training programs for users/patrons
- Libraries should mount e-awareness campaigns on their campuses
- A short (2 min) Internet usage proficiency text should be designed and used by libraries to gauge the requirements and capabilities of their potential clients

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