

A Survey of Application of Information Technology in Nigerian Private University Library: A Case of Eastern Palm University, Imo State, Nigeria

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Abstract This study surveyed the deployment of information technology in the library of eastern palm university (EPU), Imo State. Total enumeration survey of 178 registered users and 7 library staff were surveyed through questionnaire and 142 (76-75%) of the questionnaire were retrieved for analysis. Simple percentage and relative importance index were adopted to analyze the gathered data. The study found that information technology is being deployed at the university library and that majority of the users and staff are vested in the use of information technology facilities in the library. The study also found that the deployment of information technology in the library has enhanced user satisfaction, improved staff productivity, registration of library users and dissemination of information. The study among other things, suggested speedy completion, equipping and utilization of the new library and provision of alternative power supply such as solar power to mitigate the erratic public power supply to the library.

Keywords Library, Information, Technology, Internet, Computer

1. Introduction

The world today is often described as a global village because of the impact of technology. Technology has revolutionized access to information such that with a tap of finger any information can be accessed. There is hardly any aspect of human endeavor that has not been impacted by the revolution in information technology. This revolution has affected the library. Gone are the days when library was just seen as a mere stockroom of knowledge. Information technology has re-organized library routines. Issa, Ayodele, Abubakar and Aliyu (2011) see information technology in libraries as comprising all the electronic infrastructure and facilities employed by libraries to improve and provide efficient services. The authors further opined that library should not merely store documents and preserve them; it must also devise means by which the contents of such documents can be rapidly and effectively transmitted for use.

Ebunweke, Ola and Uduebor (2014) sees information technology in library as one where computer systems are used to manage one or several library routine systems such as acquisition, serial control, cataloguing and classification and the online public access catalogue. They divided information technology application in library into three categories of

computer, storage media and telecommunications. Ubogu (2019) stated that information technology has changed the system of acquisition, technical processing and circulation activities in library, in a way that library patrons can gain access to their information requirement with no great efforts. This change is obvious in the adaptation of printed bibliographic sources into CD-Rom databases, direct access to distant database online and the copious move in information search strategies.

Today library resources can be accessed from homes and offices through terminals. Thousands of monographic materials, journals, learning resources, and databases are now available in electronic formats, which can be accessed from any location. Khan (2016) enumerated the advantages of information technology in library to include making library work easier, faster, cheaper and more effective; helping to manage information overload as information retrieval is made easier in computerized systems; remote access is being enabled through networked systems; and saving of space and reduction of paper. While Krubi and Osawaru (2011) opined that the emergence of information technology in libraries has changed the role of library and information science professionals from intermediary to facilitator thereby creating new tools for dissemination of information and shift from physical to visual services environment. According to them this has resulted in the extinction of some conventional information services and emergence of new and innovative web based alternatives.

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The potential benefits of information technology in libraries as discussed above, are enormous but not without challenges. Issa *et al* (2011), Mkpojiogu and Udoma (2018) and Ubogu (2019) have discussed problems facing the use of information technology to include dearth of competent man power to handle all aspects of automation, poor funding, constant change of software and hardware, erratic power supply, insufficient bandwidth etc. Studies such as Ubogu (2019) have examined application of information technology in university libraries in south- south of Nigeria, Ezema and Gbushi (2019) in South-East Nigeria, Aba, Idoko and Ascor (2017) in north central, Nigeria, Issa *et al.* (2011) in Ondo State, and Kruba and Osawaru (2011) in Edo State. However little or no studies have been conducted in private universities in the south East, hence this study.

2. Review of Related Literature

Several studies have been conducted on the application of information technology in university library. This section shall x-ray some of these studies with a view to identifying gaps and need for the present study.

In a study of application of information technology to library services, Issa *et al.* (2011) in Akure used convenient sampling to survey two hundred and two (202) students of federal university of technology, Akure out of the total population of nine hundred and twenty nine (929) users of the library. Simple percentages were adopted to analyze the gathered data. The study found that information technology facilities such as internet, computer, audio-visual and fax were available in the library and majority of the respondents used internet and computer, while audio visual and fax facilities were not commonly used. The authors also found that information technology facilitates, lessens and/or hastens the work of the Librarian. The study further revealed that majority of the respondents encounter problems such as frequent power failure, network failures etc., in using information technology facilities in the library. The authors recommended increased library funding, alternative sources of power supply and training of students on the use of information technology facilities. The sampling technique is not probabilistic in nature and can not be a true representation of the population and its finding may not be generalized. Besides it was conducted in Akure, thus there is need for a corresponding study in another region.

Krubu and Osawaru (2011) in Edo examined the impact of information and communication in Nigeria using John Harris Library and Benson Idahosa University Library. A total enumeration Survey of 49 staff of both libraries was conducted. Questionnaire was their main instrument of data collection and percentages were used to analyze the data. The study found that the Libraries were automated and strategic library automatic management (SLAM) was used. It also revealed that only three divisions of both university libraries were automated viz reader's services, technical services and collection development divisions. The study

found that automation has eased library operations and that inadequate funding, epileptic power supply, lack of search skills etc. are the major factors militating against the application of ICT in Nigerian University Libraries. The study then suggested more generous financial support of libraries and orientation programs on the use of computers. The findings of the study are quite relevant and need to be replicated elsewhere with a survey of not only the staff but also the students to arrive at a holistic result.

In a non-empirical paper, Vijayakumar and Vijayan (2011) discussed the application of information technology in libraries. The authors listed areas of libraries where information technology is needed to include library management, library automation, library networking, audio-visual and technical communication. They also listed advantages of information technology in libraries to include easy combination of different library activities, collaboration and creation of library networks, saving the time of library users, increased efficiency, among others. The views and conclusions reached in this study can best be described as the author's opinion since no survey was carried out.

Dhanavandan and Tamizhchelvan (2014) in another non-empirical study examined the role of information technology in academic libraries. The paper highlighted challenges encountered in libraries to include expanding electronic information environment, development of information infrastructure, need for quality based services, digital preservation etc. According to the authors, the needed changes in academic libraries include changes in higher education, demands for accountability and assessment, digitization of unique library resources, growth of mobile devices and applications among others. The paper advocated for reorientation of librarians and acquisition of new skills using the new technology in the field of information science in academic libraries. Again, this paper is without survey and its findings and conclusions cannot be generalized.

Ebunuwele, Ola and Uduebor (2014) in a non-empirical study, examined the application of information communication technology in academic libraries in Nigeria. The authors opined that ICT is useful in academic libraries in that it allows easy integration of various activities, it eliminates some uninteresting and repetitive work, it increases efficiency, it provides more up to date information etc. They suggested the criteria for automation of libraries to include repetitive routines, templates, calculations, file management activities, and user menus. The study can best be described as the author's opinion since no field survey was conducted.

Whong (2014) in Nigeria surveyed a cross-section of three hundred and thirty-six (336) library technical staff from six (6) federal universities in a study of information technology in libraries. The data was analyzed using descriptive and inferential statistics. The study revealed that books, newspapers, and magazines were the major types of library information resources available, while computers and internet facilities were the most available ICT facilities available for the management of library information

resources. The study found that there was significant difference among the universities libraries studied in the type of ICT facilities available and used for the management of their library information resources. The findings in this study are quite relevant and more recent study will present the current position.

Xiaoding (2015) in china examined application of computer technology in library resources management. The author reasoned that with advanced science and technology in place of human labor, the library resources management becomes more scientific, accurate, efficient, and effective to reduce problems of service quality caused by human errors in the process of library resources management. However, the applications of computers in library services are not without problems. These problems include the challenge of updating software and perfection of hardware, erratic power supply etc. In a similar study, Khan (2016) listed problems facing application of information technology in libraries to include poor funding of ICT infrastructures, constant change of software and hardware, erratic power supply, insufficient bandwidth, lack of technical IT knowledge by library staff, copyright and intellectual property rights management etc. However, no survey was carried out to arrive at the conclusions in both papers.

In another non-empirical study, Shukla and Sialai (2016) examined the application of ICT tools and techniques in academic libraries. The paper examined the starting point of ICT application in Libraries and its history among world libraries. Relevant technologies under computer technology, communication technology, optical technology, multimedia technology etc. in libraries environment was also discussed. The authors concluded that due to wider application of ICT in libraries, library professionals' roles have changed. This study is descriptive in nature, lacking any empirical survey and its conclusions are unverifiable.

Aba, Idoka, and Akor (2017) studied application of computer technologies to reference services in university and research institute libraries in North central Nigeria. Total enumeration of 234 librarians was conducted and data collected were analyzed using frequency counts, percentages, mean and standard deviation. The study found that computer technologies was used to a little extent for reference services in university libraries, while in research institute libraries. It was highly used. It also found that the problem that hindered the application of computer technologies to reference services were irregular supply of power in university libraries. This study only examined the reference section of libraries without other sections. Thus there is need to examine other sections of the library and in other regions of the country.

In a study of availability and utilization of information communication technologies facilities by students in libraries, Agim, Iroze, Osuji and Obasi-Haco (2018) in Owerri, Imo State surveyed a cross section of 290 students of Federal Polytechnic Nekede, Owerri. Chi-square and percentages were used to analyze the gathered data. The study found that scanning machines, printers, CD-ROMs,

computers, flash drives, land area network (LAN) and inverters were available but few. It also revealed that majority of the respondents use ICT to retrieve information, conduct research and download files. They further showed unreliable telecommunication network, insecurity in the library, epileptic power supply, high cost of ICT hardware and software as major challenges of availability and utilization of ICT in the library. The sample size was intuitively determined and therefore not completely acceptable.

Ezema and Crbuushi (2019) in a study of Federal University libraries in South East Nigeria, examined the use of ICT facilities in collection development. Purposive sampling technique was adopted for the study and data were analyzed using mean and standard deviation. The study indicated that collection practitioners utilize some of the facilities to a high extent. It also revealed a significant difference in the mean response among the three sampled universities collection development practitioners on the extent to which ICT facilities are used in federal universities libraries in southeast Nigeria. The study concluded that university library management needs to provide an enabling environment for ICT facilities. The study failed to state the study population, and sample size; hence the data can be seen as the author's fabrication which cannot be verified.

Ubogu (2019) studied federal university libraries in south –south Nigeria. A total enumeration survey of 105 librarians in six (6) federal universities was conducted. Data were analyzed using frequency count and simple percentage. The study found that ICT are mostly used for acquisition and cataloging processes and circulation routines. It revealed that ICT facilities are used in the library because they are easier and faster and save the time of Librarians. The study also revealed that Librarians performance in ICTs skills is very low. The study advocated for training and retraining in ICT skills for librarians and increased funding of the Libraries. The study was conducted in public universities, hence there is need to conduct same in private universities to obtain a holistic view of application of information technology in university libraries.

3. Study Area

Eastern palm university (EPU) is situated at Ogboko, Ideato south local government area of Imo state. It was founded in 2016 by the Imo state Government and managed by the Rochas foundation. It commenced academic activities in 2017/2018 academic session following recognition by the National University Commission of Nigeria. Eastern palm university (EPU) has 14 (fourteen) programmes cutting across seven (7) schools. The library is presently housed in one building, while a much bigger, one-story building has been completed awaiting partitioning and furnishing. The current library has facilities such as tables, chairs, air conditioners, fans, lighting, audiovisuals, photo copying machines, printers, smart boards and one hundred (100) computers for the e- library section etc. The library has

staff strength of seven (7) made up of the university Librarian, deputy university Librarian, reference Librarian, head of technical section and library assistant. It has also one hundred and seventy-eight (178) registered users as at December, 2020.

4. Research Methodology

Registered users and staff at the eastern palm university constituted the study population. Available records at the library indicates that there are one hundred and seventy eight (178) registered users and seven (7) staff at the eastern palm university library, giving a total study population of one hundred and eighty five (185). Since the total population was not large, a total enumeration survey of the population was conducted to allow for equal opportunity in the survey. Closed-ended questionnaire was the main instrument of data collection. The questionnaires were administered on the respondents through personal contacts and assistance from some students and librarians. The researcher was able to retrieve one hundred and forty two (142) questionnaires representing 76.75% of the total population. The resultant data was analyzed and interpreted using simple percentages and relative importance index. The index is a 5 –point scale with the mean value of 3.00, thus any index that is less than the mean value is considered insignificant.

5. Data Presentation and Discussion

This section presents data gathered through the administration of the questionnaire on the respondents. First the respondents were asked about the frequency of usage of available information technology facilities in the university library and table 1 below present their responses.

Table 1. Frequency of usage of IT facilities in the library

Option	Frequency	Percentage
Internet	78	54.93
Computer	46	32.39
Audio-visual	11	7.75
Facsimile	7	4.93
Total	142	100.00

Source: Author’s field survey.

The table 1 above shows the frequency of usage by the respondents of the various information technology facilities available in the university library. It reveals that majority of the respondents made use of internet most often as 78 representing 54.93% were of this view. 46 respondents representing 32.39% made use of computer often, while 11 respondents representing 7.75% made use of audio visual and 7 respondents representing 4.93% made use of facsimile. The above data indicates that most of the respondents do not use audio visual and facsimile often, while internet and

computer facilities were the most commonly used facilities in the library. The studies of Ebinuwele *et al.* (2014), Aba *et al.* (2017), Ezema and Gbuushi (2019) and Ubogu (2019) buttressed this finding that most students/users of university libraries use computer and internet as the most frequent and commonly used information technology facilities.

Having established that the respondents made use of the available information technology facilities in the university library, next they were asked to rate their skills in the use of the facilities. Their responses are in the table 2 below.

Table 2. Rating of ICT Skills

Option	Excellent	Very good	Good	Fair
Internet	9(6.34)	32(22.54)	79(55.63)	22(15.49)
Computer	7(4.93)	28(19.72)	77(54.23)	30(21.13)
Audio-visual	2(1.41)	15(10.56)	42(29.58)	83(58.45)
facsimile	2(1.41)	11(7.75)	37(26.06)	92(64.79)

Note: The figures in the bracket are percentages
Source: Authors field survey.

The above table 2 reveals that only 9 respondents 6.34% rated themselves as excellent in internet usage, while 32 respondents representing 22.54% rated themselves as very good and majority of the respondents 79 representing 55.63% rated themselves as good. Also, 22 respondents representing 15.49% saw themselves as being fairly skillful in using ICT facilities. The table further indicates that 7 respondents representing 4.93% rated themselves as excellent in computer usage, 28 respondents representing 19.72% as very good, 77 respondents representing 54.23% as good, and 30 respondents representing 21.13% as fair in computer usage. Only 2 respondents representing 1.41% considered themselves as excellent in audiovisual facilities usage, 15 respondents representing 10.56% as very good, 42 respondents representing 29.58% as good, and 83 respondents representing 58.45% as fair. The table also shows that 2 respondents representing 1.41 rated themselves as excellent in the use of facsimile, 11 respondents representing 7.75% as very good, 37 respondents representing 26.06% as good and 92 respondents representing 64.79% as fair. From the data in table 2 above, it can be inferred that majority of the respondents are good in the usage of computer and internet facilities, while majority of them also had fair knowledge and skill in the use of audio – visual and facsimile facilities. The findings in the studies of Issa *et al.* (2011), Whong (2014), Aba *et al.* (2017), Agim et al (2018), and Ubogu (2019) have collaborated the above findings in this study.

Next, the respondents were presented with series of potential benefits of application of information technology in university libraries and were asked to rate using one (1) as the least important and five (5) as the most important. The resultant data was analyzed using relative importance index (RII). Table 3 below recorded their responses and the analysis.

Table 3. Benefits of application of information technology in university library

S/no	Item/Statement	1	2	3	4	5	RII	Rank
1	It has improved staff productivity	2	16	29	51	44	3.84	2 nd
2	It enhances user satisfaction	1	14	35	34	58	3.94	1 st
3	It facilitates acquisition of library resources	17	36	37	31	21	3.02	9 th
4	It has enhanced the preservation of library resources	15	29	44	34	20	3.11	7 th
5	It facilitates quick retrieval of information	18	31	31	26	36	3.22	4 th
6	It helps in ordering of information resources	9	34	47	22	30	3.21	5 th
7	It facilitates registration of library users	2	14	28	59	39	3.84	2 nd
8	It has made access to library resources easy	15	36	35	34	22	3.08	8 th
9	It enhances dissemination of information	6	28	49	36	23	3.30	3 rd
10	It enhances storing of information resources	10	31	49	25	27	3.20	6 th

Source: Author's field survey.

Table 4. Constraints / challenges to application of information technology in university library

S/No	Item/Statement	1	2	3	4	5	RII	Rank
1	Irregular power supply	0	15	25	73	29	3.82	1 st
2	Inadequate computer knowledge of the user	18	21	31	48	24	3.27	3 rd
3	Inadequate finance for procurement and maintenance of facilities	17	24	38	37	26	3.22	5 th
4	Outdated computer technology equipment and software	12	26	49	30	25	3.21	6 th
5	High cost of accessing the internet	9	17	56	37	23	3.34	2 nd
6	Poor planning and implementation polices	33	42	38	21	8	2.71	9 th
7	Complex nature of the ICT facilities	11	18	59	34	20	3.24	4 th
8	Frequent change in technology	10	27	68	25	12	3.01	8 th
9	Low internet bandwidth	29	47	29	19	18	2.65	10
10	unconducive environment	8	14	96	13	11	3.04	7 th

Source: Author's field survey.

A cursory examination of table 3 above reveals that all the items/statements are significant; however, a detailed examination will further reveal that some items /statements are rated higher than others. User satisfaction is ranked highest with an index of 3.94 as a benefit of application of information technology in university library, followed by improved staff productivity and registration of library users in a tied second position with an index of 3.84 respectively. In the third position is dissemination of information with an index of 3.30, while quick retrieval of information is ranked fourth with an index of 3.22 and ordering of information resources is ranked fifth with an index of 3.21. The respondents ranked storing of information resource as sixth with an index of 3.20, while preservation of library resources was ranked seventh with an index of 3.11. The table also reveals that easy access to library resources was ranked eighth with an index of 3.08 by the respondents, and acquisition of library resources was ranked last in ninth position with an index of 3.02. The above data shows that all variables/items are important. It is also revealed that user satisfaction and staff productivity are the most important benefits of application of information technology in the university library. The application of information technology has also enhanced dissemination of information, quick retrieval of such information and ordering of information in library as revealed by the above data. Thus it can be inferred

from the above table and data that application of information technology in the university library has resulted in several benefits as shown in the above table 3. This finding and position is collaborated by the findings of Krubu and Osawaru (2011), Issa *et al.* (2011), Whong (2014), Abia *et al.* (2017), Agim *et al.* (2018), Ezema and Gbuushi (2019), and Ubogu (2019) where application of information technology was shown to have several benefits to both the students and staff.

Despite the above identified benefits of application of technology to the university library, there are constraints and challenges to its application. Several challenges as identified in the literature were presented to the respondents on a scale of 1 to 5, with 1 as the least challenging and 5 as the most challenging. Their responses were analyzed using relative importance index and Table 4 above presents their responses and the analysis.

From Table 4 above, the respondents ranked eight (8) of the constraints/challenges as significant to the application of information technology in the university library. Irregular power supply is ranked as the most challenging to application of information technology in library with an index of 3.82, and high cost of accessing the internet is in a distant second position with an index of 3.34. Users inadequate computer knowledge is ranked third with an index of 3.27, followed by complex nature of the ICT

facilities in the fourth position with an index of 3.24 and inadequate finance for procurement and maintenance of facilities in the fifth position with an index of 3.22. The table further revealed that outdated computer technology equipment and software was ranked sixth with an index of 3.21, while unconducive environment was ranked seventh with an index of 3.04 and frequent change in technology came eighth with an index of 3.01. The respondents did not consider poor planning and implementation policies and low internet bandwidth as significant challenges /constraints to application of information technology in the university library. The above table shows that the respondents rated them ninth and tenth respectively with indices of 2.71 and 2.65 each. The university being a new one with most of the planning and policies being newly implemented, it can be understood why the respondents did not consider them to be significant challenges to application of information technology in the library. However, the other eight challenges /constraints as ranked by the respondents can be inferred to significantly affect the application of information technology in the university library. This findings collaborate the findings in the studies of Issa *et al.* (2011), Agim (2018), Ezema and Gbuushi (2019), and Ubogu (2019).

6. Conclusions and Recommendations

This study examined the application of information technology in library of Eastern Palm University, Imo state. The study concluded that information technology is deployed at the university library and that majority of the students /staff used them often. The study also concluded that majority of the users of the university library are vested in the use of computer and the internet facilities. It is also the conclusion of this study that information technology in the university library has enhanced user satisfaction, improved staff productivity, registration of library users and dissemination of information. The study further concluded that irregular power supply, high cost of accessing the internet, user's inadequate computer knowledge, complex nature of information technology facilities and inadequate finance for procurement and maintenance of facilities posed significant challenges/constraints to the application of information technology in the university library.

The university management should ensure speedily equipping and utilizing the new library block to enhance users' satisfaction and conducive environment for use of library resources. Provision of alternative power supply such as solar power will help to ameliorate the erratic nature of public power supply to the library and the high cost of fuel for the generators. Deliberate provision of funds for procurement and maintenance of facilities will help to cushion the deterioration of these facilities.

REFERENCES

- [1] Aba, J.I., Idoka, N., and Akor, P.U. (2007). Application of computer technology to reference services in University and Research institute libraries in North central Nigeria. *Journal of Balkan Libraries Union*, 5(2): 1-9.
- [2] Agim, N.C., Iroze, P.C., Osuji, C.E. and Obasi-Haco, C., (2018). Level of Availability and Utilization of Information and Communication Technology Facilities by Students: A case study of federal polytechnic Nekede, Owerri, Imo State Nigeria. *International Journal of Library and Information Science studies*, 4(3): 26-39.
- [3] Dhanavandan, S. and Tamizhchelvan, M. (2014). Role of information Technology in Academic Libraries: Personal computer to cloud computing. *International Journal of Advanced Library and information science*, 2(1): 62-71.
- [4] Ebunuwele, E.G., Ola, O. S., and Uduebor, E. A. (2014). Application of information communication Technology in Academic libraries in Nigeria. *International Journal of Education and Research*, 2 (12): 423-436.
- [5] Ezema, K.C. and Gbuushi, J.A. (2019). Use of Information and Communication Technology (ICT) Facilities in collection Development in University Libraries in South East, Nigeria. *International Journal of Research and Innovation in Social Science*, 3 (8): 344-349.
- [6] Issa, A.O., Ayodele, A. E., Abubakar, U. and Aliyu, M.B. (2011). Application of information technology to library services at the federal university of Technology, Akure Library, Ondo State, Nigeria. *Library Philosophy and Practice (e-journal)* 576 <https://digitalcommons.unit.edu/libphilprac/576>.
- [7] Khan, J. (2016). Impact of information communication technology on library and its services, *International Journal of Research-Granthaalayah*, 4(9): 97-100.
- [8] Krubu, D. E. and Osawaru, K.E. (2011). The impact of information and communication (ICT) in Nigeria University Libraries. *Library Philosophy and Practice (e-Journal)*.583. <https://digitalcommons.uni.edu/libphilprac/583>.
- [9] Mkpojiogu, E. and Udoma, A. (2018). A review of the Application Libraries. *JORIND*, 16 (1): 182-194.
- [10] Shukla, A. and Sialai, S. (2016). ICT Application in Academic Libraries. Maurya, R.J. (Ed.) *Future of academic libraries: Issues & Challenges* Pp. 62-71, New Delhi: Pentagon Press.
- [11] Ubogu, J.O. (2019). Impact of information technology in Nigerian University Libraries. *Open Access Library Journal*, 6: es340.
- [12] Vijayakumar, A. and Vijayan, S.S. (2011). Application of information Technology in Libraries: An Overview. *International Journal of Digital Library Services*, 1(2): 144-152.
- [13] Whong, F.M. (2019). *Application of information and communication technologies (ICTs) to Management of Library information resources in selected Nigerian Federal University Libraries*. Unpublished M.Sc Thesis, Ahmadu Bello University. Zaria, Nigeria.

- [14] Xiaodong, S. (2015). Application of computer Technology in Library Resources Management. *In proceedings of the Information Science and Management Engineering*. pp. 287-290.

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