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Information And Communication Technology Infrastructures And Staff Competence As Correlates Of Effective Resource Sharing In University Libraries In North Central, Nigeria

Abstract

The paper examined Information and Communication Technology (ICT) Infrastructures and Staff Competence as Correlates of Effective Resource Sharing in University Libraries in North Central, Nigeria. Objectives of the study was to find out the Information and Communication Technology infrastructures available for effective resource sharing and to ascertain the competencies of staff in the use of ICT for effective resource sharing in university libraries in North Central, Nigeria. Two research questions and one null hypothesis guided the study. The study adopted survey research design and the population comprised sixty (60) librarians. Descriptive and inferential statistics were used to analyse the data collected. Findings revealed that Internet facilities, electronic mail, e-library computer systems and library automation are the Information Communication Technology Infrastructures available library system analysts are proficient in data mining, literature search and referencing, web searching and computer management, the reference librarian can render electronic reference services, library staff can catalogue and classify electronically, librarians are competent in electronic information input, retrieval system and in electronic storage of information. The study recommended that the university librarians should ensure that computer systems are adequately provided to the libraries and should work toward improving existing Information and Communication Technology (ICT) infrastructures, trainings and retraining programmes should be organized for the library staff in lieu of raising the bar of their Information and Communication Technology (ICT) competencies.

Keywords: Information and Communication Technology (ICT), Infrastructures, Staff Competence, Resource Sharing, University Libraries, North Central, Nigeria.

Introduction

It is pertinent to note that no university library by result has any hope of being self sufficient. It is neither possible nor feasible for the university library irrespective of its size, to be self reliant in terms of collection. The only way evolved by university libraries to improve their services to the library user, is by broadening the base of information availability through resources sharing.

The term resource sharing, partnerships, co-operation and consortium networking could be used inter-changeably to refer to strategic alliances amongst libraries with the aim of meeting the

demands of patrons for services that are delivered quicker and dependably. Resource sharing is a vital practice in every library especially academic libraries, this is as a result of the fact that no library can boast of self-sufficiency because learning has continued to grow over the years due to the high rate at which researches are conducted and their findings published for the purpose of educating people. Library resource sharing is not a new phenomenon, it was earlier known as library cooperation, which sometimes is confused with resource sharing. Its history could be traced back to the 13th century where cooperation was in vogue among monastery libraries (Kumar, 2013).

Resource sharing is seen as fuel to participating libraries in the following ways: online indexes, electronic books and texts, electronic journals, electronic catalogues (library catalogues), reference sources, statistical sources, sound recordings, image databases (arts, maps, medical), games, etcetera. Electronic resources can only be accessed via computers. The reality of this is that, for a library to render e-resource service, it must have computer facilities and the infrastructure to support such. These include consistent electricity, air-conditioned rooms/halls, computer literate staff and library users, maintenance culture, fund for subscription, etcetera.

Staff competence is a major correlate of effective resource sharing in university libraries, as efforts are being made by some universities to provide Information and Communication Technology (ICT) facilities in their libraries, however, to successfully exploit the Information and Communication Technology (ICT) facilities for full benefits, the library members of staff are the indispensable intermediary between the library materials and users. As a result, members of staff must be able to use the facilities effectively. With the Information and Communication Technology (ICT) facilities, the professional librarians, paraprofessionals and other staff working in the university libraries who are the custodian and purveyors of information are challenged with new information to store, process and disseminate. The implication is that the library staff who are at the forefront of information provision in these university libraries must possess adequate Information and Communication Technology (ICT) competencies to be able to maximize the facilities to full benefits.

With Information and Communication Technology (ICT), resource sharing could be made easier through digital library. Aina (2013), opined that digital library is an automated or electronic library, known to be an information center without a physical location for the end users.

Resource sharing cannot be possible when resources are as limited as to be only adequate for the immediate use of local clientele, as this is the most common characteristics of university libraries in Niger State, Nigeria. The success of any resource sharing arrangement depends not only on having appropriate goals and objective, but also on creating and operating a service within the right legal, administrative and fiscal frame work.

The justification for resources sharing is hinged on the fact that no university library, however large, could be completely self-sufficient.

Objectives of the study

The main objective of the study is to examine Information and Communication Technology (ICT) infrastructures and staff competence as correlates of effective resource sharing in university libraries in North Central, Nigeria. The specific objectives are to:

1. find out the Information and Communication Technology (ICT) infrastructures available for resource sharing in university libraries in North Central Nigeria.
2. ascertain the competencies of staff in the use of Information and Communication Technology (ICT) for effective resource sharing in university libraries in North Central, Nigeria.

Hypothesis

One null hypothesis was tested at 0.05 level of significance.

H₀₁: There is no significant relationship between Information and Communication Technology (ICT) infrastructures and effective resource sharing in university libraries in North-Central Nigeria.

Literature Review

The major rationale guiding resource sharing is that there is no library that can provide for all the needs of its clientele. For this singular reason, resource sharing is used to obtain materials not available in one library from another library. Although the concept of resource sharing has been traced back as far as the library collection development impulse toward cooperative collection

development, in the sense of actual coordinated and collaborative activities, had emerged comparatively recently among libraries of all types in Nigeria. University libraries in Nigeria believed in principle that sharing is a sound practice. Adam & Usman (2013) noted that the need for resource sharing stems from three underlying trends of modern society. The growth of all forms of literature, the increasing reliance on information to enable society function effectively, inflation in the cost of materials coupled with the increasing availability of technology.

Aina (2013) is of the view that “no library can effectively satisfy its users from the resources within its walls”. Aina (2013) further emphasized that we are living in a time where the level of utilization of information resources has become the yardstick to determine a country’s economic advancement and strength.

Electronic library approach for resource sharing is becoming a common request among academic and research institutions. Electronic resources can only be accessed via computers. Academic libraries are not just physical or structure building anymore. They are vast collections of online resources that users can access from anywhere and everywhere around the world. They are not independent, stand-alone collections. Their holdings are interdependent with those of partner libraries in order to bring the broadest possible range of materials to share, often overlapping pool of users. They are not static repositories of published information, whether print or virtual; they are active initiators or new collecting areas, new publishing paradigms and new preservation formats.

In his contribution, Aina (2013) asserted, “Cognizant of the opportunities provided by developments information dissemination and exchange made possible by Information and Communication Technology, some libraries in Nigeria have made efforts to digitize their collections to make it available to the world knowledge”. Electronic resources could only be accessed by via an electronic device such as a computer. For an academic library to render e-resource services, it must have computer facilities and the necessary infrastructure like consistent electricity, air conditioning rooms/halls, computer literate staff and library users, fund for subscription, maintenance culture, et cetera to support such. The adoption of Information and Communication Technology (new technology), has opened up different option for educational pedagogy, methodology and learning paradigms with which librarians and academic library services must contend with, if they must remain relevant in the discharge of their duty.

As equitable quality education involves the libraries, the academic library becomes the key that unlocks the development of any nation through its service delivery to the students and staff. The various learning and research supported by the Information and Communication Technology (ICT) section of academic libraries enable problem solving which translates to national development (Osuchukwu & Ayeni, 2017). Hence, the academic libraries assemble ICT devices of hardware and software, internet, e-mail; teleconferencing, telefacsimile, CD-ROMS among others and make them available for utilization (Adebisi, 2011).

Conversely, studies have enunciated the challenges of effective Information and Communication Technology (ICT) availability and usage (Ogbomo, 2010; Aliyu, 2011 and Eguavon & Adeyemi, 2012). The studies reported the lack of funds to acquisition, maintenance and training/ retraining of Information and Communication Technology (ICT) staff of academic libraries as the most fundamental challenges confronting the African universities. Similarly,

Lack of strong government support in advancing Information and Communication Technology (ICT) availability and usage in education as a broad social and economic development enterprise and prioritization of Information and Communication Technology (ICT) investments as a means for development pose serious challenges to effective Information and Communication Technology (ICT) use by library staff. This is indeed a pronounced problem in academic libraries, (Otubelu, 2010).

Resource sharing with the use of Information and Communication Technology (ICT) is inevitable, for this reason, Uwaifo (2010) ascertained that except the academic library staff are trained, they cannot be relevant in the use of Information and Communication Technology (ICT) resources.

Aina (2013) was of the view that there is need for acquisition of skills and competence in the use of Information and Communication Technology (ICT) by library staff for quality and efficient information service delivery. Competence is critical in Information and Communication Technology (ICT) utilization for achievement of resource sharing goals because lack of Information and Communication Technology (ICT) skills by library staff is part of the causes of negative attitude towards the use of Information and Communication Technology (ICT) in academic libraries which inadvertently affect contribution and participation in national development indices. Information professionals are now expected to be aware of and capable of using and demonstrating emerging Information and Communication Technology (ICTs).

Gunjal and Dhamdhere (2013), asserted that there is a serious need for technical support library staff with high level expertise in maintenance aspects of Information and Communication Technology (ICT). The researcher observed that the problem of technical expertise is two faceted. In the first place, there are not enough people qualifying or attaining Information and Communication Technology (ICT) specialist skills at the speed at which the technologies are adopted. Secondly, the problem of brain-drain whereby the few experts available opt for better paying jobs overseas.

Sufficient Information and Communication Technology (ICT) skill/competence in library staff is very essential for the successful application of Information and Communication Technology (ICT) for resource sharing in libraries. The application of Information and Communication Technology (ICT) to store and process vast amount of information coupled with the ability of information professionals to transmit this information from one location to another has tremendous impact on the storage, retrieval, and dissemination of information in libraries.

Anyaoku (2012), opined that there is low level Information and Communication Technology (ICT) skill among librarians in Nigeria, as most collection development librarians have little or no skills to work with computers and the internet, this statement tends to be corroborated with empirical reports.

It is a known fact that no single library could boast of satisfying demands of its users but when libraries cooperate and make their resources accessible to one and another, we see results.

The justification for resources sharing is hinged on the fact that no library, however large, could be completely self-sufficient

Methodology

This study adopted descriptive survey research design. The researcher chooses to adopt survey research method because it enables a researcher to collect data from a population of interest systematically. It tends to be quantitative in nature and aims to collect information from a sample of the population such that the results are representative of the population within a certain degree of error. The purpose of a survey is to collect quantitative information, usually through the use of a structured and standardised questionnaire (Ibrahim, 2013). The population comprised a total of sixty (60) librarians' twenty (20) universities libraries in North Central Nigeria. The target

population, that is, subjects of the study comprises the University librarian, Collection Development librarian and Readers Services librarian in university libraries of public and private institutions in six states, Benue, Kogi, Kwara, Nasarawa, Niger, Plateau and FCT Abuja in North Central Nigeria.

Research Instrument

The researcher used a structured questionnaire used in data collection. A self-designed questionnaire titled “**Information and Communication Technology Infrastructures and Staff Competence as Correlates of Effective Resource Sharing in University Libraries Questionnaire**” (ICTISCCERSULQ) was developed for the university libraries respectively with a four-point rating scale divided into number of research questions, to indicate their level of agreement or disagreement with statements. The questionnaire was structured based on research questions with provisions for the respondents to tick where appropriate. Questionnaire was considered appropriate for the study based on Ibrahim (2013) recommendation that in a study, it is advantageous for respondents to answer at their convenient time. According to Kothari and Garg (2014) using questionnaire in a study is quite popular and there is low cost even when the population is large and is widely spread geographically.

Validation and Reliability of the Research Instrument

The instrument was validated by five senior lecturers in the Department of Library and Information Technology in Federal University of Technology Minna, Niger State, Nigeria.

The lecturers were requested to examine the content, clarity of expressions used and also the appropriateness of language. The comments, observations and criticism made were used to correct and strengthen the instrument.

The reliability of the research instrument was tested by conducting a pre-test to determine the reliability coefficient of the instrument. The pre-test was carried out with 30 copies of the questionnaire administered to 30 librarians in Federal University Oye-Ekiti library, Ekiti State as respondents through a split-half method. The results from the pre-test of the instrument was analysed using Cronbach Alpha Coefficient and the values of the Alpha Coefficient were 0.92 and 0.76 for the first and second research questions respectively. If the average of Cronbach Alpha Coefficient of the research question is <0.5 , the instrument is unacceptable (Tavakol and

Dennick 2011). The average score of the reliability test is 0.84 thus, the research instrument is acceptable.

Method of Data Analysis

Mean, standard deviation and PPMC were used to analyse the research questions and test the null hypothesis.

Findings and Discussion

Response Rate

A total of sixty (60) copies of the questionnaire were administered to University Librarians, Collection Development Librarians and Readers Services Librarians in the twenty universities studied. The response rate is provided in Table 1

Table 1: Response Rate

S/No	Universities	Administered	Retrieved and Usable	Percentage %
1	Benue State University Library, Makurdi, Benue State	3	3	5
2	Francis Suleiman Idachaba Library, University of Agriculture , Makurdi, Benue State	3	2	3
3	University of Mkar Library, Gboko, Benue State	3	3	5
4	Baze University Library , Abuja, F.C.T	3	3	5
5	Nile University of Nigeria Library, Abuja, F.C.T	3	3	5
6	Samuel Osaigbovo Ogbemudia Library, University of Abuja, F.C.T	3	3	5
7	Veritas University Library, Abuja, F.C.T	3	3	5
8	Federal University Lokoja Library, Kogi State	3	3	5
9	Kogi State University Library, Anyingba, Kogi State	3	3	5
10	Salem University Library, Lokoja, Kogi State	3	3	5
11	Al-Hikma University Library, Ilorin, Kwara State	3	3	5
12	Kwara State University Library, Malete, Kwara State	3	3	5
13	Landmark University Center for Learning and Resources, Omuaran, Kwara State	3	3	5
14	University of Ilorin Library, Ilorin, Kwara State	3	3	5
15	ECWA Bingham University Library, KaruNasarawa State	3	3	5
16	Federal University Lafia Library, Nasarawa State	3	3	5

17	Nasarawa State University Library, Keffi, Nasarawa State	3	3	5
18	Abubakar Gimba Library, Ibrahim Badamasi Babangida University, Lapai, Niger State	3	3	5
19	Ibrahim Badamasi Babangida Library, Federal University of Technology, Minna, Niger State	3	3	5
20	University of Jos Library, Jos, Plateau State	3	3	5
Total		60	59	98%

Table 1, revealed that 59 (98%) out of the total 60 copies of the questionnaire distributed were completed, returned and useful for the study. Thus, the response rate was very high.

Research Question One: What are the types of Information and Communication Technology (ICT) infrastructures available for resource sharing in university libraries in North Central Nigeria?

Table 2: Types of Information and Communication Technology (ICT) Infrastructures Available for Resource Sharing in University Libraries in North Central Nigeria

S/No	ICT Infrastructures	Available F(%)	Not Available F(%)	Remark
1	E-library	58(98.3)	1(1.7)	Available
2	Provision of Internet facilities	57(96.6)	2(3.4)	Available
3	Computer systems	56(94.9)	3(5.1)	Available
4	Electronic mail	55(93.2)	4(6.8)	Available
5	Library automation	41(69.5)	18(30.5)	Available
6	Teleconferencing and video conferencing facilities	17(28.8)	42(71.2)	Not Available

Table 2 presents the frequency count and percentages of respondents that indicated availability and non-availability of ICT infrastructures for resource sharing in the university libraries studied, fifty eight (58) (98.3%) of the respondents indicated availability of e-library in their university library, fifty seven (57) (96.6%) of the respondents indicated Internet facilities, fifty five (55) (93.2%) of the respondents indicated electronic mail, fifty six (56) (94.9%) of the respondents indicated the availability of computer systems and forty one (41) (69.5%) of the respondents indicated library automation while forty two (42) (71.2%) of the respondents indicated non availability of teleconferencing and video conferencing facilities in their library. The researcher

observed that teleconferencing and video conferencing facilities in most of the university libraries were not available as the technology of videoconferencing is based upon a combination of various determining factors which transfer video and audio across a network (interactivity). The major reason for the non availability of these facilities is the huge fund involved in setting up and maintenance of these facilities.

Research Question Two: How competent are the library staff in the use of Information and Communication Technology (ICT) for effective resource sharing among university libraries in North Central Nigeria?

Table 3: Competencies of staff in the use of Information and Communication Technology (ICT) in the two university libraries in Niger State, Nigeria

S/N	Statements	SA 4	A 3	D 2	SD 1	\bar{X}	StD	Dec.
1.	I am competent in electronic information input and retrieval system	31(52.5)	17(28.8)	9(15.3)	2(3.4)	3.31	0.86	Accepted
2	I am competent in electronic storage of information	26(44.1)	24(40.7)	8(13.6)	1(1.7)	3.27	0.76	Accepted
3.	I can catalogue and classify electronically	31(52.5)	20(33.9)	5(8.5)	3(5.1)	3.34	0.84	Accepted
4.	I can render electronic reference and information services	30(50.8)	23(39)	5(8.5)	1(1.7)	3.39	0.72	Accepted
5.	I am proficient in web searching and computer management	38(64.4)	19(32.2)	1(1.7)	(1.7)	3.59	0.62	Accepted
6.	I am proficient in data mining, literature search and referencing	33(55.9)	20(33.9)	4(6.8)	2(3.3)	3.42	0.79	Accepted
Grand Mean						3.39		

Key: SA = Strongly Agreed, A = Agreed, D =Disagreed, SD = Strongly Disagreed, \bar{X} =Mean and (Benchmark mean = 2.50)

Table 3 revealed the competency of library staff in the studied universities. The six items examined have a mean score greater than the benchmark mean of 2.50 on a 4 point likert scale. They are item 1: I am competent in electronic information input and retrieval system

(\bar{X} =3.31;SD=0.86), item 2: I am competent in electronic storage of information (\bar{X} =3.27; SD=0.76), item 3: I can catalogue and classify electronically (\bar{X} =3.34; SD=0.84), item 4: I can render electronic reference services (\bar{X} =3.39; SD=0.72), item 5: I am proficient in web searching and computer management (\bar{X} = 3.59; SD=0.62) and item 6: I am proficient in data mining, literature search and referencing(\bar{X} = 3.42; SD=0.79). A sectional mean of 3.39 was obtained. This depicted that there is a high level of staff competency in the use of ICT for effective resource sharing in universities in North Central Nigeria.

Hypothesis Testing

H₀₁ There is no significant relationship between Information and Communication Technology (ICT) infrastructures and effective resource sharing in university libraries in North-Central Nigeria.

Table 4: Relationship between Information and Communication Technology (ICT) infrastructure and effective resource sharing

Variable	N	df	Mean	SD	R	P
Information and Communication Technology (ICT) infrastructure	59		8.14			
		Pearson Correlation			0.035	0.05
		Sig. (2-tailed)				
Effective Resource Sharing	59		3.38			

Table 4 showed that the correlation coefficient = 0.035 $P > 0.05$ that is critical value R 0.035 is lesser than P 0.05. Therefore, the null hypothesis which stated that there is no significant relationship between Information and Communication Technology (ICT) infrastructure and effective resource sharing in university libraries in North-Central Nigeria is accepted. This shows that Information and Communication Technology infrastructure availability in the library might not increase effectiveness of resource sharing.

Discussion

This study investigated Information and Communication Technology (ICT) infrastructure and staff competence as correlates of effective resource sharing in university libraries in North Central, Nigeria. Two research questions and one null hypothesis were formulated and tested. Analysis from research question one revealed that Internet facilities, webmail, e-library, computer systems and library automation are the Information Communication Technology Infrastructure available in university libraries in North Central Nigeria. This is because these information and communication technology infrastructures are the basic requirements that make information resource such as: e-books, e-journals, etcetera sharing a reality. The availability of these information communication technology infrastructures especially in federal and state universities could also be attributed to the funds made available by the federal government through TETFUND programme to universities to support teaching and research and increase information dissemination and networks among these libraries. This finding is similar to that of Rabi (2012), who carried out a study to determine library and librarians' role in information resource sharing in the emerging information society revealed in his study that all the three selected libraries in the study area have the basic Information and Communication Technologies (ICT) based informational resources required to carry out information resource sharing effectively.

The study revealed that the university library staff are proficient in data mining, literature search and referencing, web searching and computer management. Librarians can render electronic reference and information services; the library staff can catalogue and classify electronically. Furthermore, librarians are competent in electronic information input and retrieval system and are equally competent in electronic storage of information. This shows that the librarians are highly skilled in information sharing activities. This could be connected to the series of Information and Communication Technology skills that the staff acquired at conferences, workshops, seminars, et cetera in several for a coupled with the various certifications that they possess such as Cisco Certified Network Associates, Oracle and various database management certifications. In addition to these are the frequent information communication technology retraining workshops organized by the professional bodies such as Librarians' Registration Council of Nigeria to make sure that staffers are kept abreast of trends in information and

communication technologies. The findings contradicted that of Speirs (2011), who observed low computer literacy levels among library staff and librarians in academic libraries in North-Central Nigeria. Furthermore, Gunjal and Dhamdhare (2013) asserted that there is a serious need for technical support library staff with high level expertise in maintenance aspects of Information and Communication Technology (ICT). The researcher observed that the problem of technical expertise is two faceted. In the first place, there are not enough people that are qualified or who have gotten Information and Communication Technology (ICT) specialist skills at the speed at which the technologies are adopted. Another problem is that of brain-drain whereby the few experts available opt for better paying jobs overseas. Anyaoku (2012) revealed that there is low level Information and Communication Technology (ICT) skill among librarians in Nigeria, as most collection development librarians have little or no skills to work with computers and the Internet.

Conclusion

It could be concluded that Information and Communication Technology (ICT) infrastructure and staff competence are correlates of effective resource sharing in university libraries in North Central Nigeria. Some of the resources mostly shared with cooperating libraries are textbooks, e-books, e-theses and e-dissertation, journals and human resources and that Internet facilities, webmail, e-library computer systems and library automation are the Information Communication Technology Infrastructure available for resource sharing activities in university libraries in North Central Nigeria. Competencies of library members of staff are in no doubt on the use of Information and Communication Technology (ICT) and information resources sharing as this has affected library collections positively. However, finance and lack of full library automation are still challenges affecting effective resource sharing in universities in North Central, Nigeria. With the existing situation, there is no doubt that Information and Communication Technology, as well as competencies of librarian when improved upon, will greatly enhance resource sharing in university libraries in North Central Nigeria. It is, therefore necessary that appropriate measures should be taken by university librarians in universities in North Central, to improve the current trend and be at par with their counterparts in the western world.

Recommendations

Based on the findings of the study, the following recommendations were made:-

1. The university librarian of the university libraries studied should ensure that computer systems are adequately provided to the libraries and should work toward improving existing Information and Communication Technology (ICT) infrastructures.
2. Trainings and retraining programmes should be organized for the library staff in lieu of raising the bar of their Information and Communication Technology (ICT) competencies.
3. More research and analysis is needed in this area with the view of coming up with policy measures that would be appropriate.

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