Academic Librarians ICT Competency and Its Effect on Management of Information Resources in Selected Federal Nigerian Academic Libraries

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Abstract

Purpose- *The study aims to examine, availability of ICTs facilities, academic librarians ICT competency and its effect on library information resources management in selected academic libraries.*

Design/methodology/approach- *A survey research method was adopted for the study, six (6) academic libraries in federal universities in the six geo-political zones of Nigeria were selected for this study. Questionnaire, interview and observation were instrument used for data collection. A total of 336 (92.3 %) copies were returned duly completed and found usable for this study, analyses and discusses of data collected for this study are frequencies and percentages. To further clarification the researchers interviewed one staff each from the selected academic libraries.*

Findings- *All the libraries studied except Ramat library have computers, DVD, CD, internet facilities and integrated library software and are very effective ICTs facilities use in the management of library information resources. However, lack of electronic shelves and computerised exit doors expose the library to danger of information resources mutilations theft. Similarly the study revealed utilisation of ICTs for marketing of library and information products and services and communication with staff within and outside the library are minimal.*

Practical implications- *Having resources in the library is one thing and managing them for effective service delivery is another, for any library to ensure that timely, accurate and relevant information is available for her users, there is need for academic librarians to be ICT competent in managing the information resources.*

Originality/value- *This study encourage academic librarians to maximize ICT facilities utilisation for better management of their library information resources to adhere to the mission and objectives of the respective libraries.*

Keywords - *Academic librarians, Information and Communication Technology (ICT), management of library information resources, Academic libraries, Nigeria.*

Paper type- *Research paper*

Introduction

Information and Communication Technology (ICT) has made a significant impact in every human endeavour. The impact has been rather prominent in areas of service activities such as banking, health, transportation, education and libraries.The primary purpose of university libraries is to support the university functions of teaching, learning, research and community services in ways consistent with, and supportive of, the institution's mission and goals. In order to achieve these, the library must manage its information resources effectively. Chauhan (2004) posited that the benefits of use of ICT in services can be broadly explained in terms of

economy, ease, extension (or expansion) and efficiency. The term, Information and Communication Technology (ICT) as it relates to library and as noted by deWatteville and Gilbert (2000), is the acquisition, analysis, manipulation, storage and distribution of information; and the design and provision of equipment and software for these purposes. Mayer (2006) added that ICT in libraries is a term that covers the acquisition, processing, storage and dissemination of information in textual, numerical, pictorial and audio-visual formats. The development and availability of Information and Communication Technologies (ICTs) in libraries have today not only increased

and broadened the impact of information resources and brought them to their doorsteps, but also placed more emphasis on effective and efficient services. Their applications in libraries have indeed continued to ease and promote quick and timely access to and transfer of information resources that are found dispensed round the globe.

Library information resources include not only traditional print-on-paper media like books, journals, newspapers, and maps, but also audio-visual materials like cinematograph film records, audiocassettes, video cassettes, projectors, microfiches, Compact Disk Read Only Memory (CD-ROM), computer software, online databases, electronic books and e-journals and other media via the Internet. Halsey (2006) added that libraries maintain collections that include not only printed materials but also art reproductions, maps, photographs, etc. In addition to maintaining collections within library buildings, libraries often offer telecommunications links that provide users with access to information at remote sites.

University library has to manage its resources for effective service delivery to its patrons. Iya *et al.* (2005) asserted that the basic tasks in managing library resources include acquisitions, processing, storing, maintenance, preservation, loaning and general administration. Other management issues include the planning of the construction of new libraries or extensions to existing ones and the development and implementation of outreach services and reading-enhancement services. Akintunde (2006) noted that having resources in the library is one thing and managing them for effective service delivery is another.

In a book entitled Foundation of Management by Robbins and David (2004) looked at management as it relates to libraries as the ability of a librarian to manipulate library staff, users and material resources in order to achieve its organisational goals and objectives. It is also the act to exploiting the resources of a library efficiently in cost-effective ways to facilitate efficiency in decision making through planning of what to select and acquire. Management of library resources includes organizing orientation, staff training, workshop and seminar for staff and patrons and making sure that the information resources shelved for users are easily accessible. More so, leading other library staff in the management of information resources,

controlling the library staff to see that they perform their duties and ensure that users obliged to obey rules and regulations governing the library. Management in libraries also involves recruitment of new staff and developing the old ones. It also entails reporting what the library has achieved quarterly, biannually or annually to the management and preparing annual budget on the type of information resources the departments need based on requests made by users or funds available to the library, what they will need to meet the demand of the users and other administrative duties (Robbins, & David, 2004). In his paper, "Introduction to Modern School and College Library Management, Ekoja (2010) summarised library management as:

> *Working with and through people using material and other resources to achieve set goals, in other words, management is the synchronization of people and resources to achieve organisational goals. Management thus involves planning (deciding on future activities and putting in place plans for action); organisation (implementation of plans by making maximal use of required resources to achieve them); staffing (job analysis, recruitment and hiring of the appropriate staff to discharge the appropriate functions); leading/directing (determining what needs to be done in work situations and getting the people to do them); controlling/monitoring (checking progress against plans); and motivation (providing incentive to get the personnel to work effectively and efficiently).*

The implication of the statement above is that no individual can work alone to achieve the organisational goals and objectives without working with other staff in the library to effectively manage the resources to meet the user's need.

Statement of the problem
The advent of ICTs has given librarians a face lift in the organization and management of information in libraries. Digital media have revolutionized information sources and advances in ICT have dramatically changed information provision. Already there is a proliferation of Information and communication technology in Nigerian libraries, which according to Gbaje and Okojie, (2010) was facilitated by the

deregulation of the telecommunication industries. The process of collection management has become very challenging and complex. Singh (2004) noted that acquisition, processing, organisation, storage, preservation relegation and withdrawal of library resources will continue to evolve with new ICT products and services. Gone is the era in which housing a large collection that spans linear miles was a matter of great pride for a library. At that time, libraries were able to meet most user requirements with the resources they owned. Today, physical location of libraries is less important as long as the information is accessible. Akintunde (2006) posited that having resources in the library is one thing and managing them for effective service delivery is another. Information and Communication Technology (ICT) has been argued to have the capability of improving the management of information resources in library, as supported by Faboyinde (2006), Devchoudhary (2007), Ezeani (2010), and Afolabi and Abidoye, Aderele and Adelokun (2011).Bozimo (2006) and Igun and Adogbeji (2007) observed that human capacity building is critical to the success of ICT use. Even where funds and resources are readily available, except there are competent and committed staff, very little can be achieved. The researchers therefore wonder if academic librarians ICT competency can affect the management of information resources in libraries.

Objective of the study

1. To identify the type of ICT facilities available and being used for the management of library information resources in the Nigerian federal university libraries.
2. To identify the effects of ICTs on the management of information resources in the selected academic libraries.
3. To identify how librarians ICT competences affect the management of information resources in the selected academic libraries.

Literature review

This paper review literature on the type of ICT facilities are used for the management of library information resources, the effect of ICT on the management of library information resources in the Nigerian federal university libraries and how librarians ICT competences affect the management of information resources in the

selected academic libraries. The development and availability of Information and Communication Technologies (ICTs) in libraries have today not only increased and broadened the impact of information resources and brought them to their doorsteps, but also placed more emphasis on effective and efficient services. In his study on the availability and use of ICTs in collection management, Nwalo (2005) listed the following ICT facilities used in the management of library resources to include; computers, DVDs, CDs, internet and telephones. deWatteville and Gilbert (2000) 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.

The use of information technology, especially, in libraries cannot be over-emphasized because an automated library has the potentials for satisfying library patrons' needs beyond the capabilities of the manual system. Idowu and Mabawonku (1999) surveyed information technology facilities and applications in some Nigerian research and university libraries; the general objective of the survey was to investigate the types of hardware and software available for use in the libraries. The survey found out that 92.3% of the thirteen (13) federal universities studied were using the TINLIB library management software for their automation projects, while 15.4% of the universities were using CDS/ISIS. Igben and Akobo (2007) studied the state of Information and Communication Technology (ICT) in libraries in Rivers State, Nigeria. The general objective of the study was to establish the number of computers, the existence of local area networks, the extent of automation and types of software in use. They found that 75% of the libraries studied used computers for the operations of their libraries. Daraman (1997) as cited by Azubogu and Madu (2007) and Adeniji *et al* (2011) concluded in their studies that the Internet was the most used ICT resource in academic libraries in Nigeria.

Information and Communication Technology application in libraries requires that those who are going to operate the electronic systems possess a certain level of knowledge and skill to be effective in the expectation of what ICT application has to offer. Librarians have found themselves in a new environment, otherwise

known as digital environment. The environment is characterised with uncertainties and increasing complexities of digital technology (Nwakama, 2003). Librarians need ICT skills for a number of reasons. The new working environment has become a competitive one and many players are now involved in information provision which include, Internet cafe, mobile communication medias, ICT staff, and many others in the information profession (Wittmer, 2001). Some of these players especially the internet café providers lack the necessary librarian skills to provide quality information to academic library customer (Stubbings and McNab, 2001). Thus, librarians need to continuously update their skills to be able to function maximally in an ICT environment especially in academic libraries.

Librarians need skills that will enable them use ICT for management of library and information resources. However a significant ICT skill gap among information professionals in Nigeria has been identified by Aschroft and Watts (2005). They went further and posited that the skill gap has resulted in serious under-utilisation of electronic resources in many libraries in Nigeria. Morgan (1998),Warmwin (1998), Islam and Islam (2007), Levine (2007) Pairy (2007) and Nyamboga (2007) noted that librarians are expected to possess the following ICT knowledge and skills: operating system, packages and programming languages, web awareness, technical skills, knowledge of online services, technical skills, subject knowledge, elementary programming languages skills, project management skills, CD-ROMs/OPAC search skills, web and other electronic databases search skills, database management, web development, management of multiple media, metadata skills, knowledge of standards such as Z39.50 and Dublin Core, word processing skills, spread sheet skills, database skills, electronic presentation skills, web navigation skills, website design skills, e-mail, management skills, Windows Explorer skills, operating systems, repackages of information, knowledge of ILS, web awareness, knowledge of online

facilities/services, managerial skills and public relation skill. Also library staff need to have library function skills to enable them manage the library information resources effectively and efficient, such as selection, ordering, acquisition of information resources, cataloguing and classification of information with the use of ILS, converting local information contents into digital formats, creating backup of library information resources to storage medias, and use of barcode sensor or reader in securing the library information resources.

Research Methodology

Survey research method was adopted for the study, six (6) academic libraries in federal universities in the six geo-political zones of Nigeria were selected for this study, they libraries are; Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Kaduna State; University of Ilorin Library, Kwara State; Nnamdi Azikiwe Library, University of Nigeria, Nsukka, Enugu State; University of Lagos Library, Lagos State; University of Uyo Library, AkwaIbom State and Ramat Library, University of Maiduguri, Borno State respectively. Questionnaire was instrument used for data collection. Out of the 364 copies of the questionnaire distributed to the respondents, a total of 336 (92.3 %) copies were returned duly completed and found usable for this study, analyses and discusses of data collected for this study are frequencies and percentages. To further clarification the researchers interviewed one staff each from the selected academic libraries.

Analysis and Discussions

In order to identify the type of ICT facilities available, their adequacy and functioning for the management of information resources in the library, the researchers interviewed one staff each form the selected academic libraries on what is available, how adequate and if the ICTs facilities are functioning for the management of library information recourses in the library, their responses in presented in tables 1

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Table 1   **Type of ICTs facilities available, adequate provided and functioning for the management of information resources in the federal universities studied**

ICTs facilities	Institution					
	KIL ABU	UNI ILO LIB	NAL UNN	UNI UYO LIB	UNI LAG LIB	R. LIB UNI MAID
Scanners	N	N	N	N	A	X
Computers	A	A	A	A	A	N
DVD	A	A	A	A	A	N
CD	A	A	A	A	A	N
Digital cameras	X	N	N	N	N	X
Barcode sensors or readers	N	N	N	N	N	X
Internet facilities	A	A	A	A	A	N
Office telephone lines	A	N	N	N	N	X
Office memory cards	X	X	X	X	X	X
Flash drives	N	X	X	X	X	X
Library website	N	A	A	A	A	N
Electronic shelves	X	X	X	X	X	X
Computerised exit doors	X	X	X	X	X	X
Integrated library software (ILS)	A	A	A	A	A	X
CCTV surveillance security system	N	N	N	N	N	X

KEY:
A	=	Adequate
N	=	Not Adequate/functioning
X	=	Not available
KIL ABU	=	Kashim Ibrahim Library, Ahmadu Bello University, Zaria
UNI ILO LIB	=	University of Ilorin Library
NAL UNN	=	Nnamdi Azikiwe Library University of Nigeria, Nsukka
UNIUYO LIB	=	University of Uyo Library
UNILAG LIB	=	University of Lagos Library
R. LIB UNIMAID=		Ramat Library University of Maiduguri

Table 1 indicated that Kashim Ibrahim Library, Ahmadu Bello University, Zaria have adequate and functioning computers, DVD, CD, internet facilities, official telephone lines and VTLS integrated library software. Scanners, barcode sensor or readers, flash drives, only link to the university website and CCTV surveillance security system are available but not adequate and functioning, it also revealed that there are no digital cameras, memory cards, electronic shelves and computerized exit doors in the library.

University of Ilorin library, Nnamdi Azikiwe Library University of Nigeria, Nsukka and University of Uyo library indicated the availabilities of computers, DVD, CD, internet facilities library website and integrated library software were the most available and functioning ICT facilities. Scanners, digital cameras, barcode sensors or readers, telephone lines and CCTV surveillance security system were available but not adequate and functional. The table also revealed that memory cards, flash drives electronic shelves and computerised exit door were not available in their library.

University of Lagos library shows that scanners, computers, DVD, CD, internet facilities library website and integrated library software were the most available and functioning ICT facilities. Digital cameras, barcode sensors or readers, telephone lines, and CCTV surveillance security system are not adequately available and many functional. It also shows the none availability of memory cards, flash drives electronic shelves and computerized exit doors.

The table also revealed that computer, DVD, CD, Internet facilities are not adequately/ functioning ICTs facilities in Ramat library, University of Maiduguri, there is a library link to the university website. Scanners, digital cameras, electronic shelves and computerized exit doors were not available in Ramat library.

The implication of the table 1 shows that the university libraries studied lack maintenance of ICTs facilities and lack of electronic shelve to accommodate more printed information

resources in the library as alternative to electronic information resources, and lack of computerised exit doors will put library information resources in danger of mutilation form library staff and users.

From observation the researchers noted that University of Ilorin, University of Nigeria Nnsuka and University of Uyo libraries were using KOHA open source library automation software, Ahamdu Bello University library and University of Lagos were using Virtua and Millennium Library automation software respectively for the management of its library resources. University of Maiduguri is yet to adopt any library automation software. None of the libraries studied uses X-LIB the Nigerian indigenous ILS developed by the Raw Materials Research and Development Council (RMRDC). The interview also revealed that the libraries which opted for Open Source Software (OSS) do so due to financial constraints.

Effects of ICT facilities utilization in the management of library information resources in the federal university libraries studied

In order to ascertain the effect of ICT facilities utilisation on the management of library information resources in the Nigerian federal university libraries studied, the respondents were first provided with a list of possible ICT facilities used in the management of library information resources using the five likert scale of measurement: very effective, effective, undecided, rarely effective and not effective for the respondents to choose from. Table 2 presents the result of the findings using the mean scores for discussion.

Table 2   Effects of ICT facilities utilisationin the management of library information resources in the federal university libraries studied

ICT facilities	Effect of ICT facilities utilisation										Mean
	Very effective		Effective		Undecided		Rarely effective		Not effective		
	F	%	F	%	F	%	F	%	F	%	
Scanners	101	30.1	83	24.7	88	26.2	28	8.3	36	10.7	3.2411
Computers	204	60.7	67	19.9	59	17.6	2	0.6	4	1.2	4.0565
DVD	72	21.4	92	27.4	80	23.8	31	9.2	61	18.2	3.1339
CD	75	22.3	94	28.0	82	24.4	28	8.3	57	17.0	3.1548
Digital cameras	55	16.4	87	25.9	104	31.0	36	10.7	54	16.1	2.8601
Barcode sensors or readers	73	21.7	79	21.7	110	32.7	31	9.2	43	12.8	2.9226
Internet facilities	178	53.0	68	20.2	65	19.3	15	4.5	10	3.0	3.8304
Office Telephones	122	36.3	78	23.2	105	31.3	14	4.2	17	5.1	3.2917
Office Memory card	85	25.3	65	19.3	115	34.2	37	11.0	34	10.1	2.9048
Flash drives	145	43.2	80	23.8	71	21.1	18	5.4	22	6.5	3.6250
Library website	162	48.2	100	48.2	48	14.3	6	1.8	20	6.0	3.8393
Electronic shelves	43	12.8	38	11.3	180	53.6	35	10.4	40	11.9	2.1910
Computerised exit doors	33	9.8	30	8.9	56	16.7	49	14.6	168	50.0	2.3810
Integrated Library Software (ISL)	113	33.6	80	23.8	65	19.3	52	15.5	26	7.7	3.3363
CCTV surveillance security system	56	16.7	43	12.8	21	6.3	36	10.7	180	53.6	2.2827

Table 2 provides information on effect ICT facilities utilization in the management of information resources in the libraries studied. The responses show that computers with mean score of 4.0565 and Internet facilities with mean score of 3.8304 were found to be effective utilised in the libraries studied. Computerised exit doors and electronic shelves were not effective used ICT facilities with the mean score of 2.3810 and 2.1910 respectively. This is because; none of such ICT facilities are available and utilised in the libraries studied.

Disappointingly, it was discovered that most of the Nigerian university libraries studied are not using computerised exit doors and Closed-Circuit Television (CCTV) surveillance security system to safe guard their information resources despite the security challenges in the country and users or library staff may be caught removing information resources out of the library. This finding agrees with Womboh and Abba (2008) who in their study also discovered that lack of computerised security system in polytechnic libraries made students and library staff get away with information resources which they never

returned. And this has done a lot of harm to the quality of information resources available in the libraries.

Competence of library staff in the application of ICT facilities for the management of

Library information resources

Human capacity building is crucial to the success of ICT utilisation. In order to ascertain the staff ICT competences in the management of library information resources in the Nigerian federal university libraries studied and also to find out the competence of the library staff in the application of ICT, the researchers provided a list of hypothetical statements for the respondents to choose using the five Likert scale of measurement: strongly agree; agree; undecided; disagree and strongly disagree. Table 3summarises their responses:

Table 3   Staff competency in the application of ICT facilities to the management of library information resources

Type of staff Competences	Extent of staff ICT competency										Mean
	Strongly agree		Agree		Undecided		Disagree		Strongly disagree		
	F	%	F	%	F	%	F	%	F	%	
I can select, order and acquire library information resources online through the online publisher catalogue	130	38.7	118	35.1	45	13.4	14	4.2	29	8.7	3.8482
I can catalogue/classify information resources with the use of library application software	132	39.3	146	43.5	14	4.2	8	2.4	46	10.7	3.9137
I can save, retrieve and disseminate library information resources with the library integrated software	157	46.7	124	36.9	15	4.5	9	2.7	31	9.2	4.0208
I can scan information resources in the library using scanners	101	30.1	151	44.9	32	9.5	20	6.0	32	9.5	3.7351
I can digitise library information resources available in the library	92	27.4	126	37.5	56	16.7	18	5.4	44	13.1	3.5089
I can create backup of information resources into the storage devices like DVDs, CDs, Memory card, flash drive e.t.c.	99	29.5	149	44.3	34	10.1	19	5.7	35	10.4	3.6815
I can use digital cameras to digitise library information resources	49	14.6	128	38.1	78	23.2	28	8.3	53	15.8	3.1488
I can use barcode sensor or reader in securing the library information resources.	94	28.0	94	28.0	61	18.2	24	7.1	63	18.7	3.2708

Table 3 reveals that most of the library staff agreed that they are more competent in saving, retrieving and disseminating library information resources with the ILS in use with a mean score of 4.0208, catalogue/classification of information resources with a mean score of 3.9137; Selection, ordering and acquisition of information resources with a mean score of 3.8482 and scanning information resources with a mean score of 3.7351. The reason for this is because most of the library staff do use computer systems in the management of their information resources. Some staff indicated that they could not use barcode sensor/reader in securing their library information resources with the mean score of 3.2708. This is in agreement with Aschroft and Watts (2005) who observed that there are significant skills gap among information professionals in Nigerian libraries, which has resulted in serious underutilisation of electronic resources in many libraries in Nigeria. So, training and retraining of library staff is very essential in the use of available ICT in the management of library information resources which reduce the time staff use to enter bibliographic information of a book during charging and discharging to library clients. Attempt was also made by the researcher to find out from the respondents the extent of their satisfaction with the application of ICT facilities in the management of library information resources in their libraries. They were asked to indicate the basic library operations and routines which they are satisfied with using the Likert scale of measurement: very satisfied, satisfied, undecided, not satisfied and not very satisfied. Table 4 represents the summary of their responses:

Table 4   Staff level of satisfaction with the application of ICTs facilities to the management of the library information resources in their libraries

Type of library operations and routines	Very satisfied		Satisfied		Undecided		Not satisfied		Not very satisfied		Mean
		%	F	%	F	%	F	%	F	%	
Selection of information resources	103	30.7	161	47.9	31	9.2	19	5.7	22	6.5	3.7857
Ordering of information resources	91	27.1	157	46.7	29	8.7	27	8.0	32	9.5	3.6964
Acquisition of information resources	109	32.4	142	42.3	38	11.3	18	5.4	29	8.6	3.7173
Processing of information resources	123	36.6	142	42.3	37	11.0	11	3.3	22	6.5	3.8299
Storing of information resources	138	41.1	142	42.3	34	10.1	13	3.9	9	2.7	3.9286
Retrieval of information resources	146	43.5	124	36.9	28	8.4	17	5.1	21	6.3	3.9583
Dissemination of information Resources	111	33.0	145	43.2	32	9.5	16	4.8	32	9.5	3.7798
Preservation and conservation of information resources	97	28.9	148	44.0	33	9.8	24	7.1	34	10.1	3.6845
Marketing of library and information products and services	63	18.8	144	42.9	53	15.8	33	9.8	43	12.8	3.3006
Registration of library users	106	31.5	122	36.3	39	11.6	27	8.0	42	12.5	3.6071
Storage of staff record	96	28.6	136	40.5	51	15.2	17	5.1	36	10.7	3.5327
Communication with staff within and outside the library	94	28.0	107	31.8	63	18.8	25	7.4	47	14.0	3.2976

Table 4 reveals that most of the library staff are very satisfied with using ICT facilities in retrieving information resources with a mean score of 3.9583, followed by storing of information resources with a mean score of 3.9286 and processing of information resources with mean score of 3.8299. These library operations and routines were the library functions where ICT facilities were utilised for the management of library information resources. The respondents were also satisfied with the application of ICTs in selection, dissemination and acquisition of information resources with mean scores of 3.7857, 3.7798 and 3.7173 respectively. The implication of the above findings is that the Nigerian federal university libraries need to continue to apply of ICTs especially in the area of communication with staff, preservation and conservation of information resources and storage of information resources. This can be achieved through training of the staff and utilisation of the available ICT facilities in the libraries. Levine (2007) noted in his study that 40% to 70% of the staff in Kerala, India possessed skills of selection, database skills, electronic presentation skills, web navigation skills, website design skills, e-mail, management skills, Windows Explorer skills,

etc. which helped the library staff to manage their information resources.

Conclusion and Recommendations

ICT facilities without any contradiction recognized as a powerful tool for management of information resources in the library. Based on the findings of this study, it could be concluded that staff competency on Information and Communication Technologies (ICTs) go a long way in ensuring the effective use if ICTs in the management of information resources in the library. This also translated to an improved storage and retrieval, processing, acquisition, dissemination, selection and ordering of information resources. However, the study revealed that the use of ICTs for marketing of library and information products and services are minimal. The following recommendations are therefore postulated:

1. The need to continue to training and re-training librarians both locally and internally on on ICT skills. Specifically training on the Library Management Software acquired by the library should be provided to all library staff.
2. Academic libraries should introduce more interactive websites and

incorporate the use of web 2.0 in its management of information resources.

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