



Librarians Technology Skills and Management of Electronic Information Resources in University Libraries in South-South Nigeria

Ishioma Agela Dime*, Blessings Amina Akporhonor, Esoswo Francisca Ogbomo

Department of Library and Information Science, Faculty of Education, Delta State University, Nigeria

*Correspondence: E-mail: shiangel@gmail.com

ABSTRACT	ARTICLE INFO
<p>This study investigated librarians technology skills and management of electronic information resources in university libraries in south-south Nigeria. Three research questions were developed, and one null hypothesis was formulated in relation to what the study sought to find out. A structured Questionnaire entitled Librarians' Technology Skills and Management of Electronic Information Resources Questionnaire" (LTSMEIRQ) was developed and used for data collection while three experts were engaged to validate the instrument. The reliability coefficient of the instrument was found to be 0.97 using Person Product Moment Correlation Coefficient. The questionnaire was used for collecting data from 242 respondents made of librarians in University libraries in South-South Nigeria. The data collected were analyzed using descriptive and inferential to answer the raised research questions and the formulated hypothesis. The study affirmed that librarians in University libraries in South-South Nigeria possessed high level technology skills, also the study found that relationship exists between librarians technology skills and management of electronic information resources in university libraries in south-south Nigeria. The study recommended constant upskilling and reskilling of librarians in the University to remain relevant in the scheme of global development.</p> <p>© 2024 Edulib</p>	<p>Article History: <i>Submitted/Received 12 Jan 2024</i> <i>First Revised 03 Feb 2023</i> <i>Accepted 22 Apr 2024</i> <i>First Available online 08 May 2024</i> <i>Publication Date 31 May 2024</i></p> <hr/> <p>Keyword: <i>Library,</i> <i>Librarians,</i> <i>Technology,</i> <i>Skills,</i> <i>Management.</i></p>

1. INTRODUCTION

Universities especially in the twenty-first century promote teaching, learning, mentoring, and character development of scholars, as well as high-quality research and innovation that have significant impact on knowledge and society at large. The university plays an important role in preparing future generations to use the knowledge they gain to fulfill their civic responsibilities to the society. A university can be described as an ivory tower of knowledge that houses the library and other community buildings. In almost all cases, the university is founded alongside a library to further human inquiry, knowledge acquisition, learning, and research (Aboyade & Aboyade, 2017; Brew, 2003; Boateng et al., 2014). Just as builders construct buildings, universities build scholars to solve problems in the society and world at large. As the world faces novel challenges, new fields emerge with scholars striving to solve the challenges to make the world a better place for us all to live. Universities usually have several departments that enable them to function effectively in fulfilling their purpose, notable among them are personnel, bursary, health centers, audit, and library departments to mention only a few.

Universities serve three functions: teaching, research, and community service (Lertputtarak, 2008; Brinkley-Rubinstein et al., 2016; Belayneh, 2021). The library among the various departments available in universities has been regarded as the heart of its parent institution because it aids in teaching, learning, research, and recreational needs of every member of the community. Okiki (2013) noted that the main goal of libraries is to support teaching, research, and community service. University libraries serve a wide range of users, including students, faculty, administrators, staff, and other community members with varying information needs. One of the goals of these libraries is to create and maintain collections of information resources in all formats and make them accessible to people of all backgrounds. An academic library's mission is to create and maintain a collection that will support and enhance the institution's instructional needs. University libraries are made up of professionals rendering services to ensure that the library meets up to the purpose of their parent institution. As experts, librarians are in charge of giving different user groups current, thorough, and pertinent information. Librarians have become well-known for their distinct roles in storing and disseminating information to researchers and knowledge seekers for their utilization. The utilization of information resources in the library is the goal of every library which also brings satisfaction to the librarian. Libraries and librarians can now offer a variety of library and information services to their customers by utilizing information networks and software programs (Kannappanavar & Manjunatha, 2010; Adeniran, 2013).

The advent of information communication technologies (ICTs) has resulted in the acquisition of electronic information resources (electronic books, journals, e-zines, databases, etc.) in university libraries in line with the curriculum and needs of members of the university community. Srivastava (2020) espoused that the term "electronic information resource" refers to any computer-accessible information source or electronic product that provides a set of data, whether it be text or numerical, graphical, or time-based information published as a for-profit business. These electronic information resources require connected peripherals to be able to access them, such as CD-ROMs or internet networks.

The National Institute of Open Schooling (2021) stated that online information resources are referred to as electronic resources which include bibliographic databases, electronic reference books, full-text search engines and digital data collections. They are electronic information resources that make information available and storable through electronic systems and networks (Adeleke & Nwalo, 2017; Bankole, et al., 2015). They contain both

"born digital" and "directly online-produced" content. From this definition, it is glaring that electronic resources can either be born as digital information resources or online produced resources and university libraries acquire both forms of information resources.

University libraries have access to a wide range of electronic information resources, including electronic books, journals, newspapers, magazines, abstracting, full-text, reference, and statistical databases, image collections, multimedia products, electronic theses, clippings, patents, and standards. Almost all print information resources from the twenty-first century are now available electronically. These resources include books, journals, reference books, reports, dissertations, theses, and projects, to name a few. (Manjunath, 2013; Quadri et al, 2014; Kenchakkanavar, 2014; Ankrah & Atuase, 2018; Kavithanjali, 2019). Academic librarians and university library patrons have multiple opportunities to utilize electronic information resources. Electronic resources are easy to share and use simultaneously for various academic and information needs. Apart from providing easy access to important information, the main advantage of electronic resources in the university library is that they may be accessed remotely by academic staff at their offices/laboratories or home, eliminating the need for a physical visit to the library. As a result, electronic resources improve the efficiency with which information is disseminated for research objectives in universities (Thanuskodi, 2012; LIS BD Network, 2018; Ternenge & Kashimana, 2019).

As university libraries acquire electronic resources, they also need to consider how best to effectively manage them for posterity and future use. According to Stephen (2017), the processes and techniques employed by librarians and other library staff to keep track of the selection, acquisition, licensing, access, upkeep, usage, appraisal, retention, and de-selection of a library's electronic information resources are known as electronic resource management (ERM). As posited by Wani (2018), libraries must have a system in place to maintain their electronic resources. Providing accurate information to users at the appropriate moment and ensuring efficient use of the resources is the library's main objective. It's a matter of time until the library can switch to new technology. Electronic publication and e-resources are examples of new technologies that allow consumers to access content quickly and easily. Wani (2018) further listed the important things to consider in the management of e-resources to include discovery, trial, selection, acquisition, access, and decision. Scholars have viewed the management of electronic information resources from various viewpoints. Pinfield (2001) asserted that electronic resource management necessitates competence in systems that are more complicated than library administration systems. It is important for e-resources librarians to translate technical terms for public services staff and visitors, because e-resources management affects nearly every department within the library and is used by nearly all library visitors. Electronic resources librarians must also have good communication skills. In addition to knowing who to contact and what questions to ask, they also need to be able to answer to a wide range of queries from other librarians and end users. (Verminski & Blanchat, 2017). Khullar (2018) asserted that the capacity to manage all electronic resources without consulting numerous files and folders is the primary benefit of an electronic resource management system. Many libraries have begun to use electronic resource management systems to track and analyze their online offerings in recent years.

However, despite the benefits of the deployment of electronic information resources in university libraries, librarians may not be able to effectively manage these resources if they lack the required technology skills. A person's ability to use computers and other associated technologies to engage and accomplish tasks is referred to as their technology skills. Hardware skills are the most common classification of technology skills. That is, they are regularly taught in a school setting or through other means. McKinsey and Company (2020)

noted that technology will continue to advance in the future years and decades, including an increasing number of human labor functions. In university libraries, technology skills are vital for the use of electronic resources. [Ogunsanya and Buraimo \(2021\)](#) affirmed in a study that the technology skills required in the utilization of electronic resources include internet searching skills, proficiency in sending and receiving messages via an e-mail, competencies required in booting and shutting down computer systems, proficiency in the use of ICT to efficiently communicate on the internet between individuals, abilities to download information from different databases, skills required to exhaustively utilize computers without assistance from anyone, proficiency in the use of Google and other search engines, skills required in the use of computer application software, skills in Flash drive and other external drive usage, among others. To this end, it becomes imperative in this study to explore librarians technology skills and management of electronic information resources in university libraries in south-south Nigeria.

2. METHODS

This study used a descriptive survey research design. The population of the study was 242 librarians working in the federal and state university libraries in South-South, Nigeria. The total enumeration sampling technique was adopted for the study and the entire 242 librarians were sampled for the study. The instrument that was used for data collection was a questionnaire titled "Librarians' Technology Skills and Management of Electronic Information Resources Questionnaire" (LTSMEIRQ). The instrument was divided into three sections. The Section A part of the instrument is based on the technological skill possessed by librarians. It was designed on a nominal scale of "Agree" and "Disagree" representing 2 and 1 for the weighting respectively, Section B focused on the extent librarians' use technology skills possessed in their university libraries. It was designed on a Likert Scale of 5 points ranging from Very High Extent (VHE), High Extent (HE), Low Extent (LE), Very Low Extent (VLE), and Not at All representing 5, 4, 3, 2, and 1 for the weighting. While Section C focused on the Management of EIRS designed on a Likert Scale of 5 points ranging from Very High Extent (VHE), High Extent (HE), Low Extent (LE), Very Low Extent (VLE), and Not at All representing 5, 4, 3, 2, and 1 for the weighting. The instrument was subjected to both face and content validity. The reliability of the instrument was ascertained using Pearson Product Moment Correlation Coefficient reliability r statistics. And a coefficient of 0.97 was obtained. The instruments were administered on the respondents by the researcher with the aid of 10 research assistants. Due to adequate monitoring and guidance of the instrument, out of the 242 copies distributed, 206 were duly returned indicating 85% return rate.

The data collected were statistically analyzed using descriptive and inferential statistics as appropriate. Specifically, frequencies, mean (criterion mean at 3.00) and multiple regression were used to analyse the data

3. RESULTS AND DISCUSSION

3.1. What are the technology skills possessed by librarians in the university libraries in South-South, Nigeria?

Table 1. Technology Skills Possessed by Librarians in University Libraries

S/N	Technology Skills of Librarians	A		D		Total	
		No.	%	No.	%	No.	%
1.	Information retrieval skills	184	89.3	22	10.7	206	100.0

2.	Computer hardware skills	109	52.9	97	47.1	206	100.0
3.	Computer software skills	122	59.2	84	40.8	206	100.0
4.	Computer operating system skills	141	68.4	65	31.6	206	100.0
5.	Content development software skills	136	66.0	70	34.0	206	100.0
6.	Programming language skills	136	66.0	70	34.0	206	100.0
7.	Database management system skills	149	72.3	57	27.7	206	100.0
8.	Content management system skills	186	90.3	20	9.7	206	100.0
9.	Plagiarism detection software skills	186	90.3	20	9.7	206	100.0
10.	Reference management software skills	139	67.5	67	32.5	206	100.0
11.	Digital library/ digital repository system skills	172	83.5	34	16.5	206	100.0
12.	Library management system skills	166	80.6	40	19.4	206	100.0
13.	Web application skills	190	92.2	16	7.8	206	100.0
14.	Security software skills	167	81.1	39	18.9	206	100.0

From Table 1, that the library personnel agreed that they possess technology skills such as Web application skills 190(92.2%), Content management system skills and Plagiarism detection software skills 186(90.3%) respectively, Information retrieval skills 184(89.3%), Digital library/ digital repository system skills 172(83.5), Security software skills 167(81.1%), Library management system skills 166(80.6%), Database management system skills 149 (72.3%), Computer operating system skills 141 (68.4%), Content development software skills and Programming language skills 136 (66%) respectively, and Computer software skills 122 (59.2%). It can be concluded that the technology skills possessed by librarians' in university libraries in South-South Nigeria are Web application skills, Content management system skills, Plagiarism detection software skills, Information retrieval skills, Digital library/ digital repository system skills, Security software skills, Library management system skills, Database management system skills, Computer operating system skills, Content development software skills, Programming language skills, Computer software skills and computer hardware skills.

3.2. To what extent do librarians use technology skills possessed in the university libraries?

Table 2. Extent of Librarians Possession of Technology Skills

S/N	Technology Skills of Librarians	VHE	HE	LE	VLE	NAA	Mean	Std.
1.	Information retrieval skills	73	96	20	11	6	4.06	5.96
2.	Computer hardware skills	81	57	60	5	3	4.01	0.96
3.	Computer software skills	96	63	36	10	1	4.18	0.92
4.	Computer operating system skills	32	40	42	46	46	2.83	1.34
5.	Content development software skills	71	91	14	15	15	3.91	1.17
6.	Programming language skills	19	11	97	73	6	2.83	0.93
7.	Database management system skills	49	80	71	4	2	3.83	0.85
8.	Content management system skills	51	16	101	30	8	3.35	1.12
9.	Plagiarism detection software skills	96	82	10	10	8	4.20	1.01
10.	Reference management software skills	76	82	32	11	5	4.03	0.98
11.	Digital library/ digital repository system skills	71	86	40	5	4	4.04	0.90
12.	Library management system skills	71	80	49	4	2	4.04	0.87
13.	Web application skills	73	82	10	10	31	3.76	1.38
14.	Security software skills	34	46	93	30	3	3.38	0.97
Grand Mean/Std.							3.75	0.96
Criterion Mean							3.00	

Table 2 shows that with an aggregate mean of 3.75 (Std. = 0.96) which is greater than the criterion mean of 3.00, it can be concluded that the extent librarians use technology skills possessed in the university libraries in South-South Nigeria is high. Although, their use of Computer operating system skills and Programming language skills (mean = 2.83) is to a low extent.

3.3. To what extent do librarians manage EIRs in their university libraries?

Table 3. Librarians' Management of EIRs in University Libraries

S/N	Management of EIRs in University Libraries	VHE	HE	LE	VLE	NAA	Mean	Std.
1.	Electronic Books	81	70	49	4	2	4.09	0.89
2.	Electronic Journals	96	82	21	4	3	4.28	0.84
3.	Abstracting and Indexing Databases	31	13	92	71	9	2.83	0.98
4.	Reference Databases	60	57	77	10	2	3.79	0.95
5.	Full text databases	73	80	20	4	29	3.80	1.33
6.	Websites	55	75	45	30	1	3.74	1.03
7.	Electronic Newspapers	55	83	38	18	12	3.73	1.12
8.	Electronic Magazines	32	40	42	49	43	2.85	1.37
9.	Image Collections	93	46	44	20	3	4.00	1.09
10.	Electronic Clipping	18	13	94	70	11	2.79	0.96
11.	Multi-media products	71	86	40	3	6	4.03	0.93
12.	Electronic Standards	19	12	96	72	7	2.83	0.94
13.	Electronic thesis and dissertations	82	81	20	17	6	4.05	1.04
14.	Institutional Repository	73	93	10	15	15	3.94	1.16
15.	Online Public Access Catalogue (OPAC)	93	59	30	4	20	3.98	1.25
16.	DVD-ROMs	67	69	46	20	4	3.85	1.05
17.	Academic Software	96	77	33	0	0	4.31	0.73
18.	Overseeing the functionality of A-Z lists	57	69	50	29	1	3.74	1.03
19.	Overseeing the functionality of federated search engines	61	57	48	33	7	3.64	1.16
20.	Keeping tracks of EIRs	49	71	39	27	20	3.50	1.26
21.	Attention to budget management	37	48	62	30	29	3.17	1.28
22.	Provision of administrative services	68	78	41	9	10	3.90	1.07
23.	Monitoring of license agreements	80	81	25	11	9	4.03	1.06
24.	Planning, policy and workflow problems	19	12	96	72	7	2.83	0.94
25.	Providing appropriate information to the right people at the appropriate time	55	75	45	30	1	3.74	1.03
26.	Formulation of committee of library management of its e-resources	21	13	91	72	9	2.83	0.99
27.	Links from the online catalogue	82	84	10	10	20	3.96	1.23
28.	E-journal locator resources	73	80	20	4	29	3.80	1.33
29.	Linking to full text	71	86	40	6	3	4.05	0.89
30.	OpenURL-based link resolvers	32	40	43	42	49	2.83	1.40
31.	Federated search	18	13	94	9	72	2.50	1.27
	Sub-Total						3.43	1.22
32.	Traditional online catalogue approach	61	67	40	8	30	3.59	1.34
33.	E-journal holdings data services	43	91	48	14	10	3.69	1.03
34.	Electronic resource management applications	93	53	37	20	3	4.03	1.08
							3.77	1.15
35.	Choosing EIRs to be acquired	73	97	19	12	5	4.07	0.95
36.	Acquiring EIRs to be added to the library collections	96	82	20	5	3	4.28	0.85
37.	Organizing EIRs (Cataloguing)	81	57	59	6	3	4.00	0.97

S/N	Management of EIRs in University Libraries	VHE	HE	LE	VLE	NAA	Mean	Std.
38.	Dissemination of EIRs						4.00	0.97
39.	Usage monitoring of EIRs	93	46	44	20	3	4.00	1.09
40.	Maintenance of EIRs (Preservations)	57	67	38	40	4	3.65	1.14
Grand Mean/Std.							3.67	1.00
Criterion Mean							3.00	

Table 3 shows that with a grand mean of 3.67 (Std. = 1.00) which is greater than the criterion mean of 3.00, it can be said that the extent librarians manage EIRs in university libraries in South-South Nigeria is high especially for institutional repository (Mean =3.94), linking to full text (Mean =4.05) among others. Although, the management of electronic magazines (Mean = 2.85), abstracting and indexing databases, electronic standards, planning policy and workflow problems, formulation of committee of library management of its e-resources and OpenURL-based link resolvers on a low extent (Mean = 2.83) respectively and federated search (Mean = 2.50) were on a low extent.

4. DISCUSSION

Table 4. Model Summary Table of Relationship between Librarians' Utilization of Technology Skills and Management of Electronic Information Resources

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 ^a	.985	.985	.12350

Predictors: (Constant), Technology Skills Utilized by Librarians

Table 5. ANOVA Summary Table of Relationship between Librarians' Utilization of Technology Skills and Management of Electronic Information Resources

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.270	1	203.270	13326.330	.000 ^b
	Residual	3.112	204	.015		
	Total	206.381	205			

Dependent Variable: Management of EIRs
Predictors: (Constant), Technology Skills Utilized by Librarians

Table 6. Coefficient Summary Table of Relationship between Librarians' Utilization of Technology Skills and Management of Electronic Information Resources

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.211	.035		-6.086	.000
	Technology Skills Utilized by Librarians	1.036	.009	.992	115.440	.000

a. Dependent Variable: Management of EIRs

From Tables 4 – 6, a simple linear regression was used to predict librarians' utilization of technology skills and the management of electronic information resources. Librarians' utilization of technology skills explained a significant amount of the variance in the management of electronic information resources, $F(1,204) = 13326.330$, $p = .000$, $R^2 = .985$, $R_{\text{adjusted}} = .985$. The regression coefficient ($B = 1.036$) indicated that an increase in librarians' utilization of technology skills, corresponds on average, to an increase in the management of electronic information resources. Therefore, the null hypothesis is rejected implying that there is a significant relationship between librarians' utilization of technology skills and the management of electronic information resources in university libraries in South-South, Nigeria. This means that librarians' utilization of technology skills can predict the management of electronic information resources.

To begin with, one of the findings revealed that librarians in university libraries in South-South Nigeria possessed Web application skills, Content management system skills, Plagiarism detection software skills, Information retrieval skills, Digital library/digital repository system skills, Security software skills, Library management system skills, Database management system skills, Computer operating system skills, Content development software skills, Programming language skills, Computer software skills and computer hardware skills. This finding corroborated that of [Ogunsanya and Buraimo \(2021\)](#) who affirmed that the technology skills possessed by librarians in the utilization of electronic resources include internet searching skills, proficiency in sending and receiving messages via an e-mail, competencies required in booting and shutting down computer systems, proficiency in the use of ICT to efficiently communicate on the internet between individuals, abilities to download information from different databases, skills required to exhaustively utilise computers without assistance from anyone, proficiency in the use of Google and other search engines, skills required in the use of computer application software, skills in Flash drive and other external drive usage, among others.

This finding is in conformity with the positions of [Bajpai and Margam \(2019\)](#) who posited that professionals in the field of Library and Information Science (LIS) must learn how to use a variety of ICT tools, such as automation, bibliographic standards, ICT-based library services, mobile information services, Library Management Systems, Citation, Institutional Repository, and so on, to perform their jobs effectively.

This finding also supported that of [Koya and Gopakumar \(2018\)](#) who noted that all library professionals acquired IT skills, mainly in three areas of information technology, i.e. hardware, software, and web applications. Koya and Gopakumar further noted that the information technology skills expected to be possessed by librarians to use electronic information resources include hardware, software, operating, content development software, programming language, database management skills. Others are plagiarism detection software, reference management software, digital library/digital repository system, web

application, and security software. In addition, the findings is corroborated by that of Dority (2017) which asserted that academic librarians must be knowledgeable about software for bibliographic instruction, instructional design products, a variety of classroom software programs, Apple and Microsoft operating systems, software for managing electronic reserves and serials, integrated search tools, and intellectual property/copyright management systems. Academic librarians may need to use a variety of online research tools, including scholarly databases, government e-resources, and overseas sources, depending on the nature of their work. The implication of these findings is that librarians in university libraries in South-South Nigeria irrespective of institutions and location possessed technology skills.

In addition, another finding showed that the extent at which librarians use technology skills possessed in the university libraries in South-South Nigeria is high. This finding is in conformity with the positions of Eromosele et al (2021) who surveyed librarians' ICT competency in the 21st century in Federal University Libraries in Southern Nigeria. The results showed that librarians must possess ICT skills to effectively use 21st-century ICT facilities, including the ability to turn on and off computers, browse the web, download files from the Internet, navigate and use library automation software and its modules (such as OPAC), send and receive emails, copy to and from a CD-ROM and flash drive/hard discs, among other necessary skills. The Librarians competency level in the university libraries were high. It is however glaring that technology skill is a key requirement for the effective use of electronic information resources. Also, the finding is consistent with that of Odede and Nsibirwa (2018) who noted that is necessary to have tool literacy, critical literacy, social-structural literacy, emerging technology literacy, publication literacy, and the ability to use electronic information resources appropriately. This finding is in consonance with the study conducted by Kumar (2017) who identified that librarians had above average skills for ICT-based knowledge retrieval" (accessing, searching, and use of e-journals). Electronic document distribution and interlibrary lending over a network, online indexing and abstracting services, digital reference services, development of institutional repository, selective dissemination of information (SDI) services, and electronic fresh extra alert are included among respondents' average skills.

Similarly, Sankari and Chinnasamy (2014) noted that to a considerable extent, librarians must have certain ICT skills in addition to academic and professional credentials, such as operating system proficiency, application software package use, database and programming knowledge, familiarity with webpage design, library automation software, technical skills, and managerial abilities.

Yet, another finding revealed that the extent librarians manage EIRs in university libraries in South-South Nigeria is high. The findings of the study is consistent with the study of Ankras and Atuase (2018) who noted that academic libraries offer a variety of electronic resources, including databases, journals, data archives, e-manuscripts, maps, books, magazines, dissertations, the World Wide Web, e-newspapers, e-research summaries, and e-bibliographic databases among others and the extent at which they are managed is also very high. Similarly, the findings agreed with the study of Tiemo (2016) who applauded the high extent at which EIRs in University libraries in South-South Nigeria are managed. By implication, managing electronic resources involves a methodical approach to maintenance that is used from the time a resource is chosen and purchased until it is used by the intended users.

Furthermore, the hypothesis revealed a significant relationship between librarians' utilization of technology skills and the management of electronic information resources in university libraries in South-South, Nigeria. This means that librarians' utilization of

technology skills can predict the management of electronic information resources. The findings of the study is consistent with the study of [Omehia et al. \(2020\)](#) who noted that significant relationship exist between librarians' utilization of technology skills and the management of electronic information resources (EIRs) in university libraries. Omehia et al. also found that the use of emerging technologies in academic libraries, basic computer skills, and the relationship between web 2.0 and information retrieval skills among librarians were critical to the effectiveness of university libraries. Similarly, the findings buttressed that of [Basahuwa et al \(2020\)](#) who noted that the library professionals' basic and professional ICT skills are high and they use them to provide efficient library services. Also, the findings of the study, is consistent with the submission of [Ali \(2020\)](#)_who submitted that the relationship between librarians' utilization of technology skills and the management of electronic information resources (EIRs) in university libraries is crucial in today's digital age. The management of EIRs requires librarians to have advanced technology skills to ensure effective and efficient access to electronic resources for library users or clientel

4. CONCLUSION

This study has brought to limelight the relationship between librarians' technology skills and management of electronic information resources in university libraries in south-south Nigeria. The implication of this is that library services in Universities in South-South Nigeria, will merge and compete favourably with global best practices in the world over. Therefore, based on the findings of the study, it is envisaged that relevant stakeholders would see to constant upskilling and reskilling of librarians in the University to remain relevant in the scheme of global development.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

6. REFERENCES

- Aboyade, W. A., & Aboyade, M. A. (2017). *Fundamentals of libraries education*. Joymab Educational Publications.
- Adeleke, D.S. & Nwalo, K.I.N. (2017). Availability, use and constraints to use of electronic information resources by postgraduate students at the university of Ibadan. *International Journal of Knowledge, Content Development and Technology*, 7(4), 51-69.
- Adeniran, P. (2013). Usage of electronic resources by undergraduates at the Redeemer's University, Nigeria. *International Journal of Library and Information Science*, 5(10), 319-324.
- Ali, H. (2020). Challenges and opportunities in the management of collection development policy in libraries. *Middle belt Journal of Library and Information Science*, 18, 164-176.
- Ankrah, E.B., & Atuase, D. (2018). The use of electronic resources by postgraduate students of the University of Cape Coast. *Library Philosophy and Practice*, (e-journal). Paper 1632. <https://digital.common.unl.edu/libphilprac/1632>

- Bajpai, V. K., & Margam, M. M. (2019). Promoting minor millets for food and nutritional security. *ActaHorticulturae*, 1241, 571–576.
- Bankole, O. M., Ajiboye, B. M., & Otunla, A. O. (2015). Use of electronic information resources by undergraduates of Federal University of Agriculture, Abeokuta, Ogun State, Nigeria. *International Journal of Digital Library Services*, 5(4), 1-14.
- Basahuwa, C.B., Unegbu V.E., & Babalola Y.T. (2020). ICT skills and job performance of librarians in public universities in North-Central, Nigeria. *ATBU Journal of Science, Technology and Education*, 8 (1), 154–166.
- Belayneh, A. S. (2021). Science teachers' integrative practices in teaching, research, and community services: The case of three universities in Ethiopia. *Education and Self Development*, 16 (2), 10-26.
- Boateng, H., Dzigbordi Dzandu, M., & Tang, Y. (2014). An investigation into knowledge acquisition idiosyncrasies in Ghanaian universities. *VINE: The journal of information and knowledge management systems*, 44(4), 579-591.
- Brew, A. (2003). Teaching and research: New relationships and their implications for inquiry-based teaching and learning in higher education. *Higher education research & development*, 22(1), 3-18.
- Brinkley-Rubinstein, L., Doykos, B., Martin, N. C., & McGuire, A. (2016). *Academics in action!: A model for community-engaged research, teaching, and service*. Fordham Univ Press.
- Dority, K. (2017). Technologies librarians need to know. <https://www.libgig.com/technologies-librarians-need-know/>
- Eromosele, O.C., Omosokejimi, A.F. & Ogo, E.P. (2021). Librarians' ICT competency in the 21st century: A study of federal university libraries in southern Nigeria. *Library Progress (International)*, 41(2), pp.215–226. doi:10.5958/2320-317x.2021.00024.6.
- Kannappanavar, B.U., & Manjunatha KV (2010). Library use pattern by the faculty members of the engineering colleges in Karnataka. *International Journal of Library and Information Science*, 2(8), 155-163.
- Kavithanjali, J. (2019). E – Resources: Their importance, types, issues and challenges: An Analysis. *IJRAR- International Journal of Research and Analytical Reviews*, 6(1), 775-779.
- Kenchakkanavar, A.Y. (2014). Types of e-resources and its utilities in library. *International Journal of Information Sources and Services*, 1(2), 97-104.
- Koya, U., & Gopakumar, V. (2018). Information technology skills required for library professionals in digital era: An Introspection. *International Journal of Library and Information Studies*, 8(1), 43-50.
- Kumar, N. B. (2017). Use of information communication technology (ICT) and library operation: An overview. <http://eprints.rclis.org/32231/>
- Lertputtarak, S. (2008). *An investigation of factors related to research productivity in a public university in Thailand: A case study* [A PhD dissertation, Victoria University, Australia].

- Manjunath, A. (2013). *Use pattern of electronic information resources and services in libraries of universities with potential for excellence up in South India: A study*. <http://hdl.handle.net/10603/225419>
- National Institute of Open Schooling. (2021). *Electronic Resources*. <https://www.nios.ac.in/media/documents/SrSecLibrary/LCh-008.pdf>
- Odede, I.R., & Nsibirwa, Z. (2018). *Information literacy skills in using electronic information resources*. <https://www.researchgate.net/publication/329327137>
- Ogunsanya, A.O., & Buraimo, O. (2021). ICT literacy skill and electronic resources utilization among lecturers in the faculty of education, OOU, Nigeria. *Journal of Information Engineering and Applications*, 11(1), 23-31.
- Okiki, O. C. (2013). Availability of information resources for research output: perception of academic staff members in Nigerian Federal Universities. *International Journal of Computer Science and Telecommunications*, 4(8), 26-33.
- Omehia, A., Okwu, E. & Nsirim, O. (2021). Librarians' ICT Competencies and Utilization of Emerging Technologies in Academic Libraries in Rivers State, Nigeria. *Library Philosophy and Practice*, 5410.
- Pinfield, S. (2001). Managing electronic library services: Current issues in U.K. higher education institutions. <http://www.ariadne.ac.uk/issue29/pinfield/intro.html>.
- Quadri, G.O., Adetimirin, A.E., & Idowu, O.A. (2014). A study of availability and utilization of library electronic resources by undergraduate students in private universities in Ogun State, Nigeria. *International Journal of Library and Information Science*, 6(3), 28–34
- Sankari, R. L., & Chinnasamy, K. (2014). ICT skills among librarians in engineering colleges in Salem and Namakkal Districts: A Study. *International Journal of Humanities and Social Science Invention*, 3(12), 9–17.
- Stephen, G. (2017). Electronic resource management in academic libraries: Tools and techniques. *International Journal for Innovative Research in Multidisciplinary Field*, 2, 82-85.
- Ternenge, T., & Kashimana, F. (2019). Availability, accessibility, and use of electronic information resources for research by students in Francis Sulemanuldachaba Library University of Agriculture, Makurdi. <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5768&context=libphilprac>
- Thanuskodi, S. (2012). *Use of e-resources by the Students and Researchers of Faculty of Arts, Annamalai University*. <http://article.sapub.org/10.5923.j.library.20120101.html>
- Verminski, A., & Blanchat, K. M. (2017). Fundamentals of electronic resources management. *Journal of Hospital Librarianship*, 17(4), 357-358.
- Wani, S. (2018). E-Resource management. *International Journal of Library and Information Studies*, 8(4), 63-65.