

Determinants of Electronic Information Services (EISs) Provision by Librarians in Public Universities in South-East Nigeria

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Abstract

The study examined determinants of electronic information services provision by librarians in public universities in South-East Nigeria. The correlational research design was adopted for the study, with a population of 84 librarians (who are heads of their university libraries and library departments). The entire population was studied through the census sampling technique. Data was collected using two researchers-made questionnaire and one semi-structured interview schedule. Data was analyzed quantitatively and qualitatively. The findings of the study revealed that while word processing and online search skills have strong positive relationships with electronic information services provision by librarians, web 2.0 skills have a strong negative significant relationship with electronic information services provision by librarians in the public university libraries in South-East Nigeria. Problems of subscription, poor internet connectivity, inadequate power supply, lack of dedicated Web 2.0 tools and lack of regular training of librarians were identified as factors militating against electronic information services provision by librarians in public university libraries in South-East Nigeria.

Keywords: Electronic Information Services, Technology Skills, University Librarians, Public universities

Introduction

Electronic information services are seriously taking root as veritable information services in university libraries, readily available and easily accessible by information users, irrespective of their geographic location and time zone. University libraries in developed countries are taking full advantage of this service innovation for enhanced teaching, learning, research and information sharing. This is based on the premise that providing electronic information services has many advantages over print-based sources such as speed, easy search function, ease of use, flexibility, convenience, portability, and cost-effectiveness (Aregbesola & Oguntayo 2014; Bar-Ilan et al, as

cited in Nwone & Mutula, 2019; Iquo et al., 2022). However, studies show that providing electronic information services in university libraries is practically skill-dependent, especially technology literacy skills (Abbas & Siddique, 2020; Emiri 2015; Umeji et al., 2013). Meanwhile, from existing literature and personal observation of the researchers, much attention is focused on either availability, accessibility and utilization of electronic information resources and services in university libraries, without commensurate research efforts on what actually determines electronic information services provision by librarians in the public universities in South-East Nigeria. This therefore is the gap this study intends to fill.

Research Questions

The purpose of this study is to examine the determinants of electronic information services (EISs) provision by librarians in public universities in South-East Nigeria. To achieve this, the following research questions are posited:

- i. What is the correlation between word processing skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria?
- ii. What is the correlation between online search skills of librarians correlate to electronic information services provision in public university libraries in South-East, Nigeria?
- iii. What is the correlation between Web 2.0 skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria?

Hypotheses

Three (3) null hypotheses were tested at 0.05 level of significance.

H₀₁: There is no significant relationship between word processing skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria.

H₀₂: There is no significant relationship between online search skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria.

H₀₃: There is no significant relationship between Web 2.0 skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria.

Literature Review

Electronic information services provision as a concept, is described by Okongo (2014) as the function through which librarians and other information professionals assist information seekers to have access to information using electronic infrastructures. It is a paradigm shift in the university libraries traditional mode of operations with emphasis on online provision of access for enhanced information dissemination with restrictions to time and location (Iquo et al., 2022). Provision of electronic information services in university library helps users access library resources and services online through networks from their offices or homes without going to the library physically

(Aregbesola & Oguntayo 2014; Mallikarjuna, & Padmamma, 2020; Nwone & Mutula, 2019). It also assures of many advantages such as speed, easy search function, ease of use, flexibility, convenience, and portability of information services against their print-based counterparts (Aregbesola & Oguntayo 2014; Bar-Ilan et al., as cited in Nwone & Mutula, 2019).

Electronic information services provision is dependent on librarians ability to use computers, knowledge of content availability and the ability to articulate search terms intelligently (Odunewu & Aluko-Arowolo, 2018). It has a strong relationship with librarians Internet search skill and technology-related skills as successfully retrieval of web information is a product of sound technology literacy skills and confidence (Abdulkadir & Mohammed, 2016). It is also dependent on internet services availability and compatible facilities (Udoh et al., 2020). It reduces pressure on university libraries for physical storage space for books and journals, while creating unlimited access to users (Lefuna, 2017). It also helps in achieving relative accuracy and timely access to information in order to advance research activities and collaboration with other researchers around the world for intellectual growth (Ukpebor, as cited in Fasugba & Udoudo, 2022). Electronic information services provision also promotes convenience, more user-friendliness, faster, reliable and ready access to electronic information services across times and locations.

Providing electronic information services has placed librarians with new set of tasks, challenges and requirements. It characteristically requires librarians to develop new set of skills and competencies, especially information technology literacy skills such as word processing skills, internet search skills, Web 2.0, which is commonly known as social media skills, uploading and downloading skills, creative expressions through multimedia tools such as podcasts and videos, library automation skills, digital library competencies, computer hardware competencies, etc. (Akwang, 2021; Bajpai & Margam, 2019; IFLA, 2019). Particularly, word processing skills are the ability to operate a computer and perform basic tasks such as typesetting, editing, formatting, and reformatting of texts, images, files, and documents as well as form-filling. It is a fundamental set of skills in providing professional, intellectual and non-routine services, with great impacts in enhancing the ability of the librarians in providing electronic information services to support teaching, learning and research activities of library users in the university libraries. Equally, online or Internet search skills refer to the proficiency to search, browse, surf, navigate, uploading, downloading, and understanding how the Internet works in transferring electronic data and information. It is very significant for easy and rapid access and retrieval of accurate and reliable information, and for various information management processes such as analysis, evaluation and decision-making (Kurt & Emiroğlu, 2018). Web 2.0 skills embeds the potentials to create more interactive and powerful environments in which librarians create, produce, edit, and evaluate information services (Akwang, 2021). The use of Web 2.0 skills can support librarians in creating and sharing information services in various formats such as text, pictures, music, videos, and images using available social

media platforms like Facebook, LinkedIn, Academia.com, Google Scholar, Instagram, MySpace, Wikis, Blog, Wordpress, Podcasts, YouTube, Flickr, social bookmarking services, WhatsApp, Twitter, etc., to enhance interactivity for sharing electronic information services to library patrons.

As a matter of fact, electronic information services provision offers numerous benefits to university libraries. It offers university libraries and librarians greater opportunity to expose students, lecturers and other information users to academic and scholarly materials to enhance their academic performances, and improve quality teaching and research outputs (Iquo et al., 2022; Uwaifo & Azonobi, 2014). It serves as cost-effective measures, as well as helps in minimizing space and reduction in user-traffic in the university libraries. It also ensures multiple and simultaneous remote access to electronic information services, reduces physical deterioration, mutilation and theft of library information resources such as books, journals, as well as enhances distant learning programmes while promoting resource sharing (Khan et al., 2016). Electronic information services provision also facilitate librarians support towards elimination of the digital divide, increased use of information, improved communication and timely access to information, improved information exchange facilities, and search and information manipulation (Anasi, 2012). In a nutshell, electronic information services provision by librarians typifies improvement in quality library and information services delivery, as a result of enhanced, faster and quicker information sharing, accessibility, and utilization by various users at the same time, from various geographical locations.

Meanwhile, studies show that many factors militate against electronic information services provision by librarians in public university libraries in developing countries such as Nigeria. Particularly, Emiri (2015); and Umeji et al (2013) identified poor digital literacy skills of librarians. Igbo and Imo (2020) also identified unsatisfactory library support services and lack of adequate training of librarians in electronic information services as challenges facing electronic information services provision in public university libraries in Nigeria. This is even as Ajayi et al (2014); Okongo (2014); Echezona et al (2015); and Ekwelem et al (2018) on their parts, while pointing out poor information technology tools such as cutting edge technologies like optical fibre network with required number of work stations, low Internet connectivity and bandwidth and server instability, frequent interruption of electricity, frequent machine breakdowns, and lack of top management support (evident in non-existence of supportive formal policies), noted that the major hiccups affecting electronic information services provision in university libraries in Nigeria is insufficient skilled and experienced librarians exacerbated by low level of information technology and computer literacy skills. Therefore, based on the above background, this study investigates the determinants of electronic information services (EISs) provision by librarians in public universities in South-East Nigeria.

However, Iquo et al (2022) investigated the provision of digital information resources in Nigerian university libraries. The study adopted a descriptive survey design, with a population of 744 certified academic librarians working in federal, state, and private universities obtained from the Librarians Registration Council of Nigeria (LRCN). The instrument for data collection in the study was questionnaire, and the data collected were analyzed quantitatively through the Statistical Package of the Social Sciences (SPSS), using percentages, mean scores, and standard deviation. The study revealed that access to electronic/digital information resources in libraries was low due to non-implementation of real time provision of information resources to users, emanating from lack of library management software that would drive the process, professionals lack of skills in implementing digital information services, and lack of relevant formal institutional digital information provision policies. The study concluded that embracing electronic library information services is essential to ensure effective provision of access to information for users. It recommended improved subscription to library management software and development of capacity of the librarians for effective implementation of electronic information services.

Akwang (2021) conducted a study of librarians' perceptions and adoption of Web 2.0 technologies in academic libraries in Akwa Ibom State, Nigeria. The study adopted descriptive research design with a population of 60 professional librarians. It considered the census sampling technique. Data for the study was collected using the researcher-developed questionnaire, while the data collected were analyzed with descriptive statistics of frequency counts, simple percentage and charts. The study revealed that majority of librarians perceived that Web 2.0 technologies are useful and could enhance their job performance as Web tools are clear and easy to understand. The study further revealed a low level of web technologies adoption across the academic libraries studied. It showed that the major constraints to adoption of Web 2.0 technologies in academic libraries include high cost of technologies, poor access to web tools, budget constraints, inadequate training of librarians to acquire requisite skills in adopting Web technologies and restrictive ICT policies. The study recommended that proper funding, staff training and re-training, as well as update of library facilities including Web 2.0 technologies should be giving priority consideration in the academic libraries.

Udoh et al (2020) examined digital literacy skills of undergraduate students of Library and Information Science on the utilization of electronic information resources in federal university libraries in Nigeria. The study adopted a descriptive survey design approach with a population of 250 final year students from comprising 182 and 68 students from the Departments of Library and Information Science, Michael Okpara University of Agriculture, Umudike, and University of Uyo. The accidental sampling technique was used to select 120 undergraduates for the study. Data were collected using the researcher-structured questionnaire, and the data collected was analysed using descriptive statistics of frequency counts and mean scores. The study revealed that Internet search engines, e-research reports, online databases, e-journals, e-books,

etc., were available the university libraries but utilization was low. It revealed the digital literacy skills of the students to include: electronic mailing skills, Internet surfing skills, social networking skills, basic computer operations skills, and email skills. The study showed that the students used digital literacy skills for typesetting, formatting, and printing of documents; downloading of e-resources, sending of assignments and term-papers online for assessment by lecturers and for social networking. It identified the factors militating against digital literacy skills and utilization of electronic information resources to include: epileptic electricity supply, poor access to internet, inadequate digital facilities, lack of conducive digital literacy learning environment, etc. The study recommended that universities should design and implement digital literacy programmes to educate and train students to develop knowledge and practical skills on the use of digital technologies.

Similarly, Nwone and Mutula (2019) conducted a study on the determinants of use of electronic information resources by the professoriate in Nigerian universities. The study employed a descriptive survey and questionnaire to collect quantitative data from two hundred and forty-six (246) professors from three universities. The data collected were analysed with descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS). It revealed that performance expectancy, effort expectancy, attitude and social influence significantly influenced the professoriates intention to use electronic resources in comparison to self-efficacy, anxiety and facilitating conditions. It showed high self-efficacy and low anxiety means scores as the determinants of use of electronic information resources by the professors in Nigerian universities.

Abdulkadir and Mohammed (2016) examined the influence of search skills on Web information searching and retrieval among academic staff and students in Nigerian universities. The study adopted a survey research design with a total of population of one hundred and eleven thousand, two hundred and nineteen (111,219), which comprised six thousand, two hundred and nineteen (6,219) academic staff and one hundred and five thousand (105,000) students from Ahmadu Bello University, Zaria, University of Nigeria Nsukka, and University of Ibadan. The sample of the study was three hundred and eighty-four (384) selected using proportionate stratified sampling technique. Data for the study was collected with the use of questionnaire instrument, and the data collected were analysed with descriptive statistics of percentages, means and standard deviation while corresponding hypothesis was tested using inferential statistics of one-way analysis of variance (ANOVA). The study revealed that there was a strong strategic Internet skill in all the users. It indicated that for academic staff and students to successfully retrieve web information, they require technology skills and confidence. Whereas, the null hypothesis formulated was retained, which suggested no significant difference among the academic staff and students in the universities investigated. It recommended that for users to succeed in searching and retrieving information and improve their retrieval skills, the information literacy programmes organized in the libraries should lay more emphasis on hypermedia, the art of critical thinking and web-based searching.

Ejomafuvwe (2017) investigated the determinant of the use of electronic information resources by LIS postgraduate students in universities in the South-south and South-west region of Nigeria. The study adopted a descriptive survey design five (5) research questions and four (4) hypotheses tested at 0.05 level of significance. The population of the study was 156 masters degree students from four (5) public universities offering Library and Information Science at postgraduate level in the region. The total enumeration sampling technique was employed for the study, which resulted in using the entire study population as the sample. The instrument for data collection was the questionnaire, which was subjected to face and content validity with a reliability coefficient of 0.84. The data collected were analyzed using descriptive statistics of frequency and percentage to answer the research question, while independent sample t-test was used to test hypothesis one and three, ANOVA was used to test hypothesis 2, while Pearson Product Moment correlation coefficient was used to test hypotheses four. The study revealed that the postgraduate students used e-book, e-journal, e-thesis/e-dissertation, e-dictionary, online databases, CD-ROM, etc. It showed that majority of the masters degree students are computer literate, with high level of information skills, operational skills and strategic skills. The study indicated that though a positive relationship exists between postgraduate students perception and attitude toward the use of electronic information resources, but the postgraduate students have negative attitude and perception towards the usage of electronic information resources. It recommended that curriculum planners should formulate policies that will support the frequent use of electronic information resources both at the undergraduate and postgraduate levels in order to change their perception and attitude, as well as equip them in this 21st century.

Ojeniyi and Adetimirin (2016) evaluated the ICT literacy skills and electronic information resources use by lecturers in two private universities in Oyo State, Nigeria. The study employed descriptive survey design, with a population of two hundred and thirty-four (234) lecturers Ajayi Crowther University (ACU) and Lead City University (LCU). A total enumeration sampling technique was used for the study, while the questionnaire instrument was deployed for data collection. Data collected were analyzed using frequency counts and percentages, while the hypothesis was tested with Pearson Product Moment correlation coefficient. The study revealed that e-journals, e-books, CD-ROM databases, search engines, online databases, etc., were available in the universities. It indicated that the lecturers had high ICT literacy skills level in general computer operations, internet browsing, internet searching, computer appreciation like word processing, spreadsheet, internet navigation, and desktop publishing. It revealed a positive significant relationship between ICT literacy skills and electronic resources use by the lecturers. It showed that limited access to computers, poor internet connection, erratic power supply, inadequate relevant e-resources, difficulty in using search terms, lack of conducive environment, etc., were the challenges militating against ICT literacy skills of the lecturers and use of electronic resources in the universities. The study recommended that university

administrators and library management should endeavour to improve power supply and internet bandwidth for the enhancement of internet connectivity to facilitate easy access and utilization of electronic information resources in the university libraries.

Emiri (2015) further conducted a study on digital literacy skills among librarians in university libraries in the 21st century in Edo and Delta States, Nigeria. The study adopted a descriptive survey design, with a population of seventy-seven (77) librarians from eight (8) university libraries in Edo and Delta States. The census sampling technique was used with a structured questionnaire as instrument for data collection. The data collected were analyzed using descriptive statistics of simple percentage and frequency counts. The study revealed that the librarians level of digital literacy skills from the university libraries was low. It showed that the major digital literacy skills of the librarians are: electronic mailing, mobile phones usage, and internet surfing; with poor digital literacy skills on the use of electronic conferencing, PDAs, computer accessories navigation, computer operations, social networking, media projecting and electronic bulletin board. It showed that librarians acquired digital literacy skills mostly through personal IT programmes, colleagues support, and formal education. It discovered that the constraints to librarians digital literacy skills include: attitude of librarians, age, financial incapability, technophobia, cost of digital skill training, lack of digital resources, inaccessibility of facilities, lack of conducive environment, poor internet network, poor electricity supply, and poor funding of university libraries. The study recommended that management of university libraries should provide training for librarians in order to enable them update their knowledge in the application of digital skills, while digital literacy competency should be considered as a core skill for recruitment of librarians.

Umeji et al (2013) also conducted a survey on information/ICT literacy levels and skills among librarians in Madonna University library, Okija, Anambra State, Nigeria. The study adopted the descriptive survey research design method, with a population of eleven (11) librarians. It made use of the structured questionnaire and oral interview as instruments for data collection, while the data collected were analyzed using the simple percentage statistics. The study revealed that the information/ICT literacy skills level of the librarians was poor. This was attributed to the lukewarm attitude of librarians to the profession and the emerging technology literacy skills, lack of passion for new knowledge. The study showed that though ICT facilities are available in the library, but they are not very much interested in using or mastering ICT skills for effective library services delivery. It indicated that the factors affecting librarians in the acquisition of information/ICT literacy skills in the library include: poor funding of the library and time for librarians to undergo training and workshops, as well as lack of conducive working environment. The study recommended that librarians should make effort to undergo training and retraining to acquire ICT related skills and competencies, read wide to increase their knowledge and participate in seminars, conferences and workshops on emerging information communication technology skills.

In sum, electronic information services provision is assumed to be determined by certain types of information technology or digital literacy skills, which must be possessed by librarians. This is because electronic information services, by nature are the products of technological advancement and cannot be accessed, manipulated or even provided outside digital technology environment.

Methodology

The correlational research design was used in this study to investigate the relationship between the determining factors of electronic information services provision by librarians in public universities in South-East Nigeria. The study was conducted in South-Eastern zone of Nigeria, which is made up of five (5) states, namely; Abia, Anambra, Ebonyi, Enugu and Imo. The population of this study was eighty-four librarians, comprising ten university librarians and seventy-four heads of library departments or units from ten public university libraries. The population distribution is presented in Table 1.

Table 1: Distribution of the Study Population by Institution

Federal Universities	N0.	State Universities	N0.
Michael Okpara University of Agriculture Umudike (MOUAAU) Library, Abia State	9	Abia State University (ABSU) Library, Uturu, Abia State	6
Nnamdi Azikiwe University (UNIZIK) Library, Awka, Anambra State	8	Chukwuemeka Odumegwu Ojukwu University (COOU), formerly known as Anambra State University Library	6
Alex Ekwueme Federal University (AE-FUNAI) Library, Ndufu-Alike, Ebonyi State	8	Ebonyi State University (EBSU) Library	6
University of Nigeria, Nsukka (UNN) Library, Enugu State	14	Enugu State University of Science and Technology (ESUT) Library	7
Federal University of Technology, Owerri (FUTO) Library, Owerri, Imo State	13	Imo State University (IMSU) Library, Owerri, Imo State	7

The census sampling technique was deployed to sample the 84 librarians — that is, ten university librarians and seventy-four heads of departments or units. Data for the study was collected using three instruments, two of which are researchers-developed-structured questionnaires while the third instrument was a semi-structured interview schedule. The instruments were subjected to construct validation by five research experts, three from the Department of Library and Information Science and two from the Test and Measurement discipline for scrutiny and modifications in order to ascertain its appropriateness and suitability for the

research objectives. The two sets of questionnaires were subjected to internal consistency method of reliability estimate and administered to two university librarians and fourteen heads of departments/units from two other university libraries other than the ones used in this study. Their responses were analysed using Cronbachs alpha reliability index formula, which yielded a reliability coefficient of 0.92 for the independent variables and 0.90 for the corresponding dependent variables, and were considered high enough to measure intended outcomes with consistency. The data collected for this study was analyzed quantitatively and qualitatively. The quantitative data analysis focused on the data collected with the questionnaires using Pearsons Product Moment Correlation Coefficient (PPMCC) for questions 1, 2, and 3, while regression analysis was used to test the corresponding hypotheses at 0.05 level of significance. On the other hand, the interview responses from the university librarians were qualitatively analysed by reading and transcribing the audio recordings into notes by the researcher to interpret the associated inferences using relevant subjective headings in order to validate and give credence to the results of the quantitative analyses for better generalization and inferences.

Results and Discussion of Findings

Data collected for this study was analysed using Pearson Product Moment Correlation Coefficient (PPMC) and the corresponding hypotheses tested at 0.05 level of significance using regression analysis. The results were presented in tables and interpretations provided, accordingly. More so, responses obtained from the interview schedules on the university librarians were transcribed and interpreted qualitatively as addendums to validate the quantitative analyses of the data. This provided more information on the findings based on deeper probe on the determinants of electronic information services provision by librarians in public university libraries in South-East Nigeria.

Research Question 1:What is the correlation between word processing skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria?

Table 2: Pearson Product Moment Correlation Coefficient between Word Processing Skills of Librarians and Electronic Information Services Provision in Public University Libraries in South-East, Nigeria

				WPSs	EISs	Sig
Word Processing Skills (WPSs)	Pearsons (2tailed)	Correlation	Sig.	1	0.277	0.017
	N			74	74	

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EISs	Pearsons (2tailed)	Correlation	Sig.	0.227	1
	R ²			0.077	
	N			74	74

EISs = Electronic Information Services

Data in Table 2 revealed that there was a low extent of correlation between word processing skills of librarians and electronic information services provision in public university libraries as indicated by the correlation coefficient ($r = 0.277$) which is positive and within the coefficient limit of $\pm 0.20 - 0.40$. The coefficient of determination ($r^2 = 0.077$) indicates that 7.7% of the variance observed in electronic information services provision in university libraries is accounted for by word processing skills of librarians. It implies that the word processing skills of librarians to a low extent correlates with electronic information services provision in the public university libraries in South-East Nigeria.

Hypothesis 1: There is no significant relationship between word processing skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria.

Data in Table 2 above showed a p-value 0.017 which is less than Alpha value of 0.05. Thus, the null hypothesis which states that, there is no significant relationship between word processing skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria, was rejected. This implies that there is a strong positive significant relationship between word processing skills and electronic information services provision by librarians in public university libraries in South-East, Nigeria.

As deduced from the transcribed interview schedule, majority of the university librarians agreed that they possess basic word processing skills such as the ability to type, save, format, edit, print, and scan documents as well as convert files formats like Word to PDF and vice versa, which are helpful skills in electronic information services provision. On the extent of their word processing skills, it is deduced that 85% of them have moderate word processing skills while 15% have high extent of word processing skills, but they rarely provide word processing related electronic information services in the libraries since they are more preoccupied with managerial responsibilities than providing direct users services. On the availability of supporting technological facilities for electronic information services provision, they all pointed out that they have desktop computers, laptops, photocopying machines, printers, scanners, etc., for electronic information services provision. This was in line or agreement with the result of the quantitative analysis which showed that word processing skills of librarians have a strong positive relationship with electronic information services provision in the public university libraries in South-East Nigeria. This finding agrees with the study conducted by Abbas and Siddique (2020), which revealed that librarians possessed office-related ICT competencies such as email management and MS Word operations.

The finding also aligns with Hiremath and Bankapur (2019) on the awareness and proficiency in digital literacy skills among librarians, which revealed that librarians have significance value for digital technology proficiency in using software, hardware, operating system and MS operations in the provision of services.

Research Question 2:

What is the correlation between online search skills of librarians correlate to electronic information services provision in public university libraries in South-East, Nigeria?

Table 3: Pearson Product Moment Correlation Coefficient between Online Search Skills of Librarians and Electronic Information Services Provision in Public University Libraries in South-East, Nigeria

		OSSs	EISs	Sig
Online Search Skills (OSSs)	Pearsons Correlation	1	0.546	0.000
	(2tailed) N	74	74	
EISs	Pearsons Correlation	0.546	1	
	(2tailed) R ²	0.298		
	N	74	74	

EISs = Electronic Information Services

Data in Table 3 revealed that there was a medium extent of correlation between online search skills of librarians and electronic information services provision in public university libraries as in indicated by the correlation coefficient ($r = 0.546$), which is positive and within the coefficient limit of $\pm 0.40 - 0.60$. The coefficient of determination ($r^2 = 0.298$) indicates that 29.8% of the variance observed in electronic information services provision in university libraries was accounted for by online search skills of librarians. It implies that the online search skills of librarians to a moderate positive extent correlates with electronic information services provision in the public university libraries in South-East Nigeria.

Hypothesis 2: There is no significant relationship between online search skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria

The result in Table 3 above showed a p-value 0.000 which is less than Alpha value of 0.05. Therefore, the null hypothesis which says that, there is no significant relationship between online search skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria, was rejected. This implies that there is a strong positive significant relationship between online search skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria. From the transcribed interview responses on online search skills

of the librarians, majority of the librarians agreed that they surf the internet moderately and frequently without any assistance using Google, Google Chrome, Firefox, and Yahoo search engines. Majority of them also identified e-books, e-journals, e-theses and e-dissertations, online databases such as Science Direct, Research4Life, EBSCOHOST, HINARI, JSTOR, ProQuest, TEEAL, PubMed, and open access journals as some of the online search related electronic information services provided in their libraries. Some particularly mentioned the use of Routers, Local Area Network (LAN) such as FUTOnet (for Federal University Technology Owerri) as the dedicated technology and internet facilities that supported electronic information services provision in their university libraries. Meanwhile, all of them identified the problems of subscription, poor internet connectivity, inadequate power supply and lack of time as the major challenges affecting their online search skills and electronic information services provision in the public university libraries. This affirms the result of the quantitative analysis which indicated that online search skills of librarians have a strong positive relationship with electronic information services provision in the public university libraries in South-East Nigeria. This finding partly corroborates Abbas and Siddique (2020), which revealed that librarians are significantly ICT competent in using the search engines, especially simple online searching skills but lack advance level expertise in database browsing and advance searching technique due to the inadequate training opportunities, which affirmed the position of Emiri (2015), which indicated that librarians level of digital literacy skills with regards to internet surfing was low, and negatively affected their provision of library services.

Research Question 3:

What is the correlation between Web 2.0 skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria?

Table 4: Pearson Product Moment Correlation Coefficient between Web 2.0 Skills of Librarians and Electronic Information Services Provision in Public University Libraries in South-East, Nigeria

				Web 2.0 Skills	EISs	Sig
Web 2.0 Skills	Pearsons	Correlation	Sig.	1	0.204	0.081
	(2tailed)					
	N			74	74	
EISs	Pearsons	Correlation	Sig.	0.204	1	
	(2tailed)					
	R ²			0.042		
	N			74	74	

EISS = Electronic Information Services

Data in Table 4 revealed that there was a low extent of correlation between Web 2.0 skills of librarians and electronic information services provision in public university libraries as indicated by correlation coefficient ($r = 0.204$), which is positive and within the coefficient limit of $\pm 0.20 - 0.40$. The coefficient of determination ($r^2 = 0.042$) indicates that 4.2% of the variance observed in electronic information services provision in university libraries is accounted for by Web 2.0 skills of librarians. It implies that the Web 2.0 skills of librarians to a low extent correlates with electronic information services provision in the public university libraries in South-East Nigeria.

Hypothesis 3: There is no significant relationship between Web 2.0 skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria

The result in Table 4 above, showed a p-value of 0.081 which is greater than Alpha value of 0.05. Hence, the null hypothesis which says that, there is no statistically significant relationship between Web 2.0 skills of librarians and electronic information services provision in public university libraries in South-East, Nigeria, was accepted.

In addition to the quantitative analysis, the transcribed interview responses revealed that majority of the university librarians possess Web 2.0 skills but most of them indicated that their libraries did not have dedicated Web 2.0 technologies like Facebook, WhatsApp, Twitter, YouTube, or Library blog for electronic information services provision to users. Majority of them however agreed that they share files, documents and some information with their staff, colleagues and associates via personal social media accounts such as Facebook, WhatsApp, Twitter, etc., as well as using academic social media sites such as NLA WhatsApp group, AULNU WhatsApp group, Academic and Research Library WhatsApp group, Academia.com, ResearchGate, LinkedIn, Google Scholar, Web of Science, etc., for electronic information services provision for their professional and intellectual engagements. Probing deeper into why they did not have Web 2.0 platforms for electronic information services provision to users, most of them identified inadequate ICT skilled librarians and challenges associated with social media administration like abuse by users. However, the transcribed interview responses agreed with the results of the quantitative analysis which showed that Web 2.0 skills of librarians have a strong negative significant relationship with electronic information services provision in the public university libraries in South-East Nigeria. This finding slightly departs from the study conducted by Akwang (2021), which revealed that majority of librarians perceived Web 2.0 technologies as useful tools that could enhance their job performance, but manifested a low level of web technologies adoption across the libraries. It also departs from the study conducted by Abbas and Siddique (2020), which showed librarians moderate competencies in web technologies such as proficiency in using social media, discovery tools, and utilization of cloud computing as vital tools in promoting the services of university libraries and for marketing libraries products.

Implication of the Findings

The findings of this study have implications for all stakeholders in the public university library systems especially librarians. Word processing skills have a strong positive relationship with electronic information services provision by librarians in public university libraries in South-East, Nigeria. The finding showed that the word processing skills of librarians is moderate and librarians are not effectively using their word processing skills in providing electronic information services in the public university libraries due to engagement in managerial, professional and intellectual responsibilities than in providing direct users services. This implies that if they are not using their word processing skills effectively, the needs of users for electronic information services will not be adequately met and the objectives of the public universities in supporting teaching, learning, research and community services may be experiencing some lapses.

Also, online search skills have a strong positive relationship with electronic information services provision by librarians in public university libraries in South-East, Nigeria. But librarians have moderate internet or online search skills to use Google, Google Chrome, Firefox and Yahoo search engines in providing electronic information services in the public university libraries. More so, problems of subscription, poor internet connectivity, inadequate power supply and lack of time affect librarians in effectively expressing their online search skills for electronic information services provision. This implies that if online search skills are improved and necessary facilities such as internet connectivity and power supply provided, electronic information services provision by librarians in the public university libraries will at best, be enhanced for effective satisfaction of users needs.

Moreover, Web 2.0 skills have a negative relationship with electronic information services provision by librarians in public university libraries in South-East, Nigeria. The public university libraries are not equipped with dedicated Web 2.0 technologies such as Facebook, WhatsApp, Twitter, library blog, etc., for readers services due to inadequate ICT skilled librarians and challenges associated with social media administration like abuse by users. This implies that if public university libraries in the present information age do not have dedicated Web 2.0 technologies, it may not be easy to provide electronic information services by librarians to the teeming users. As a matter of fact, Web 2.0 technologies and skills provide greater advantages for ease of communication and dissemination of information through various means such as e-mail, Facebook, library blogs, etc., and the availability and dedicated utilization of these tools are necessary for electronic information services provision. Therefore, if Web 2.0 skills and technologies are lacking, it hinders the ease of information dissemination and in turn limits quality teaching, learning and research activities in the public universities.

Conclusion

Electronic information services are vital complements of print information sources provided in university libraries with vast advantages such as enhanced, faster and

quicker information sharing, accessibility, and utilization across geographical locations and time. However, electronic information services provision is determined by how technologically skilled the librarians are in planning, selecting, accessing, evaluating and effectively sharing the information via electronic media. In this study, it has been discovered that word processing skills and online search skills have strong positive significant relationships with electronic information services provision by librarians in public university libraries in South-East Nigeria. It is also found out that Web 2.0 skills have negative significant relationship with electronic information services provision by librarians, as majority of the librarians lack adequate Web 2.0 skills and dedicated Web 2.0 tools such as library blogs, Facebook, WhatsApp, LinkedIn, YouTube account, etc. for electronic information services provision in the public university libraries in South-East Nigeria. It is therefore, concluded that if librarians are effectively trained to acquire requisite skills such as Web 2.0 skills and provided with dedicated-institution-Web 2.0 technologies, the provision of electronic information services will be enhanced and quality teaching, learning and research in the public universities improved.

Recommendations

From the foregoing therefore, this paper recommends, first, that the management of universities should make technology literacy skills mandatory requirements for appointment of librarians because if librarians are not technologically literate, provision of electronic information services will not be given considerable and deserved attention. Secondly, management of universities should provide adequate funds to university libraries to facilitate the provision of electronic information services through subscription to real-time databases, internet bandwidth and other associated facilities. Thirdly, management of universities should provide constant power supply including dedicated power source as well as internet accessibility to university libraries in order to enhance reliable and steady provision of electronic information services as the services are always dependent on availability of power supply and internet connectivity. Fourthly, university libraries should prioritize the training of librarians in emerging technologies in order to equip them with necessary skills for quality services delivery. Lastly, librarians should take full advantage of the changes in the modern information systems and up-skilled themselves to meet up changing tasks such as electronic information services provision.

References

- Abbas, M. A. & Siddique, N. (2020). A study of ICT competencies among university library professionals of Punjab, Pakistan. *Library Philosophy and Practice (e-journal)*. 4000. <https://digitalcommons.unl.edu/libphilprac/4000>

- Abdulkadir, A. & Mohammed, Z. (2016). Influence of search skills on web information searching and retrieval among academic staff and students in Nigerian Universities. <https://www.researchgate.net/publication/304138706>
- Ajayi, S. A., Shorunke, O. A. & Aboyade, M. A. (2014). The influence of electronic resources use on students reading culture in Nigerian universities: A study case of Adeleke University, Ede, Osun State. *Library Philosophy and Practice (e-journal)*. Paper 1182. <https://digitalcommons.unl.edu/libphilprac/1182>
- Akwang, N. E. (2021). A study of librarians' perceptions and adoption of Web 2.0 technologies in academic libraries in Akwa Ibom State, Nigeria. *The Journal of Academic Librarianship*, 47(2), 102299. <https://doi.org/10.1016/j.acalib.2020.102299>
- Anasi, S. N. I. (2012). Digital libraries and higher education in Nigeria in the 21st century. *DESIDOC Journal of Library Technology*, 32(4), 353-357. <https://publications.drdo.gov.in/ojs/index.php/djlit/article/view/2531/1311>
- Aregbesola, A. & Oguntayo, S. (2014). Use of electronic resources by faculty members in Landmark University. *Computing, Information Systems, Development Informatics & Allied Research Journal*, 5(2), 53 — 58. 4. <http://www.cisdijournal.net/uploads/V5N2P5-CISDIARJOURNAL.pdf>
- Bajpai, V. K. & Margam, M. (2019). ICT skills and competencies of library and information science professionals working in college libraries, University of Delhi: A study. *Library Philosophy and Practice (e-journal)*. 2275. <https://digitalcommons.unl.edu/libphilprac/2275>
- Echezona, R. I., Ibegbulem, I. J. & Nwegbu, M. U. (2015). *Bring back the users in academic libraries in the digital age*. Paper presented at the 53rd National Conference and Annual General Meeting of Nigeria Library Association (NLA), Oshogbo, Ogun state of Nigeria, 26-31 July.
- Ejomafuvwe, E. (2017). *Determinants of the use of electronic information resources by postgraduate students of Library and Information Science in South-South and South-West Nigeria*. A dissertation submitted to the Postgraduate School in partial fulfillment of the requirements for the award of Master of Science (M.Sc.) degree in Library and Information Science, Delta State University, Abraka. <https://www.delsu.edu.ng/clt/>
- Ekwelem, V. O., Okpala, H. N., Igbokwe, J. C. & Ekwelem, C. (2018). Evaluation of online reference services: Reflections from Nigerian academic libraries. *Library Philosophy and Practice (e-journal)*. Paper 1777. <https://digitalcommons.unl.edu/libphilprac/1777>
- Emiri, O. T. (2015). Digital literacy skills among Librarians in university libraries in the 21st century in Edo and Delta States, Nigeria. *International Journal of Scientific & Technology Research*, 4(8). www.ijstr.org
- Fasugba, M. F. & Udodo, S. J. (2022). Assessment of electronic information resources on postgraduate Engineering students academic activities in federal universities in South-West, Nigeria. *African Scholars Journal of Education*

- Research and Library Practice (JERLP-8)*, 24(8).
<https://www.africanscholarpublications.com/>
- Hiremath, S. S. & Bankapur, V. M. (2019). Awareness and proficiency in digital literacy skills among librarians of first grade degree colleges of Bagalkot District with respect to age group. *International Journal of Librarianship and Administration*, 10(1), 11-18. <http://www.ripublication.com>
- International Federation of Library Associations and Institutions [IFLA] (2019). *Media and information literacy for all: Libraries and the 2019 global MIL week*. <https://blogs.ifla.org/faiife/2019/10/24/167/>
- Iquo, H. U., Ibegbulam, I. J., Asogwa, B. E. & Imo, N. T. (2022). Provision of digital information resources in Nigerian university libraries. *Information Research*, 27(3). Paper 936. <https://doi.org/10.47989/irpaper936>
- Khan, A., Bhatti, R., & Khan, A. (2016). E-books usage by agricultural, engineering and social science students in selected universities of Pakistan: An empirical assessment. *The Electronic Library*, 34(6), 958-973. <https://doi.org/10.1108/EL-08-2015-0163>
- Kurt, A. A. & Emirglu, B. G. (2018). Analysis of students online information searching strategies, exposure to internet information pollution and cognitive absorption levels based on various variables. *Malaysian Online Journal of Educational Technology*, 6(1). www.mojet.net
- Lefuma, S. (2017). *Access to and use of electronic information resources in the academic libraries of the Lesotho Library Consortium*. Unpublished dissertation submitted to College of Humanities University of Kwazulu-Natal, South Africa. https://researchspace.ukzn.ac.za/bitstream/handle/10413/14345/Sejane_Lefuma_2017.pdf?sequence=1&isAllowed=y
- Mallikarjuna, & Padmamma, S. (2020). Use of electronic information resources and services by the faculty members of first grade colleges affiliated to Davanagere University: A literature review. *International Journal of Library and Information Studies*, 10(3), 200-206. <http://www.ijlis.org>
- Nwone, S. A. & Mutula, S., (2019). Determinants of use of electronic information resources by the professoriate in Nigerian universities: Extending the unified theory of acceptance and utilisation of technology model. *South African Journal of Information Management*, 21(1), a1108. <https://doi.org/10.4102/sajim.v21i1.1108>
- Odunewu, A. O. & Aluko-Arowolo, T. K. (2018). Information literacy, computer competence and use of electronic resources by Olabisi Onabanjo Faculty members. *Journal of Information Engineering and Applications*, 8(4). www.iiste.org
- Ojeniyi, A. O. & Adetimirin, A. E. (2016). ICT literacy skills and electronic information resources use by lecturers in two private universities in Oyo State,

Nigeria. *Library Philosophy and Practice (e-journal)*.1443.
<http://digitalcommons.unl.edu/libphilprac/1443>

- Okongo, A. N. (2014). Access and utilization of digital information services in academic libraries: The case of university of libraries of Nairobi. *Unpublished masters dissertation, University of Nairobi, Nairobi, Kenya*.
<http://erepository.uonbi.ac.ke/handle/11295/76015>
- Udoh, I. U., Ekpenyong, G. E., & Olowookere, O. (2020). Digital literacy skills of undergraduate students of library and information science on the utilization of electronic information resources in two federal universities in Nigeria. *Library Philosophy and Practice (e-journal)*. 4269.
<https://digitalcommons.unl.edu/libphilprac/4269>
- Umeji, E. C., Ejedafiru, E. F., & Oghenetega, L. U. (2013). Information /ICT literacy level and skills among librarians in Madonna University Library, Okija. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 15(3), 70-75.
www.iosrjournals.org
- Uwaifo, S. O., & Azonobi, N. C. (2014). Factors militating against the use of the internet by postgraduate students. *International Journal of Library and Information Science*, 6(2), 14-18. <https://doi.org/10.5897/IJLIS2014.0459>