Relationship Between Digital Competency of Academic Librarians and Provision of Access Services in Federal University Libraries in South East and South-South Nigeria

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Abstract

The study investigated relationships between digital competencies of academic librarians and provision of virtual access services in federal university libraries in south east and south-south Nigeria. The study adopted a correlation research design. The population comprised all librarians in federal universities in south east and south-south Nigeria. A census sample design was used to select 203 academic librarians. The instruments used for data collection were Achievement test, Cognitive test and questionnaire. Three research questions and three null hypotheses were tested for the study with the use of Pearson product Moment correlation, at the significant value of 0.01 and 0.05. The findings indicated a low positive relationship between academic librarians' digital skills, digital knowledge and provision of virtual access services. There was also high positive relationship between digital attitude and provision of virtual access services. The result also indicated a significant relationship between digital competencies and virtual access services. The study recommends continues training and exposure of academic librarians to ensure a continuous development of skills necessary to operate in a virtual environment and to support positive attitude that will lead towards meeting up with the digital technological demands.

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Background to the Study
The educational objectives in Nigeria Universities have been actualized through non electronic teaching and learning methodologies. This required having students on campus and administering lectures, examination, and seminar in physical buildings. Also, information provisions by Nigeria libraries have been traditional, which entails the acquisition, processing and organization of information materials for members of the university community to help actualize the institutional objectives. This traditional method was able to attain some level of success in the actualization of educational objectives before the outbreak of COVID 19 pandemic in Nigeria. However, the closing down of universities in the country as a result of the pandemic and the need to engage students at home in order not to disrupt the academic calendar, lead most universities into adopting virtual teaching and learning methodologies (University World News cited in Ifijeh& Yusuf 2020). Atayero (2020) affirmed that the closure of most universities and the subsequent adoption of virtual teaching and learning methodologies opened new window of opportunities for Nigeria universities. The effect of the pandemic ushered in a new norm in all tertiary institutions across the globe by restructuring the learning platform and application processes. Consequently, universities now adopt virtual teaching and learning methodologies to satisfy the educational needs of users.

University libraries in Nigeria are being presently challenged to adjust to this new paradigm shift to improve information services (Ifijeh and Yusuf 2020). Through the recent technological changes, academic libraries now provide many services virtually. Library leaders and librarians now works toward embracing the potentials and practicality of virtual libraries for a better services delivery to patrons by providing access to a broader range of information that are available locally and by supporting traditional resources sharing among libraries. The emergence of communications and computing technologies has ushered in a platform for restructuring the traditional library and this has paved way for the acceptance of virtual library concept. Virtual library ensures that the library provides access to the resources in the library through electronic network. This is the role of the virtual access services of the library which involves getting the information to the user once a user has discovered resources. Virtual access services connote free and open access through communication networks to digital information resources and services needed for research without selecting the users to whom access is provided. This entails providing access to system software and other electronic resources. Library patrons can have access to library resources through digitization, digital repositories and library websites. Digital resources and services ensure that libraries expand significantly the scope of information available to users. To provide access to digital resources and services, information professionals should follow the principles outlined in the library Bill of Rights for an equitable access regardless of content or platform (ALA Policy Manual 2019). These informational resources provided by the library should be accessible to all library users equitably, regardless of format or method of delivery. To ensure easy accessibility of library resources, Ogunsola (2005) reveals that most Nigeria university libraries has been computerization, information resources digitized and also there has been a serious move for the establishment of library

information network with connectivity to the internet. Some libraries have installed integrated Library Systems (ILS), built digital collections, established institutional repositories and made available electronic services such as access to the internet, email and other computer applications. This corresponding increase in the use of technological facilities in ensuring access to resources requires a higher degree of digital skills from the librarians. Librarians are expected to be digitally competent as library services are now offered through a range of media including social networks, mobile devices or even virtual world.

Digital competency can be described as having the skills, knowledge and attitudes needed to operate digital technologies and system effectively without fear. In Sweden, digital competency is seen as a foundational concept, a national strategy launched for the digitization of education (Swedish Ministry of Education 2017). The aim is to provide and develop in children and students the ability to use and create with digital technology and understand how digitization affects the individual and society. Therefore, digital competency is seen as a set of knowledge, skills and attitudes needed to be relevant and functional in a digital environment. Digital knowledge is defined as a graduate structure of theoretical knowledge and skills with computers and informational devices (Ramirez and Casillas, 2018). It is knowledge obtained not only through the use of digital tools, but also partially modified through digital tools. Digital knowledge is a new condition of knowledge which can be obtained and transformed by technological tools. It emphases on changes obtained through learning and the impact of the use of technology simple and advanced.

Also, digital skills are seen as the ability to manipulate digital tools and operate in computerized environment (Chinien & Boutin 2011). Digital skills can be defined as the ability to use digital devices, communication application and networks to provide required information. Digital skills are more practicable and measurable application of knowledge in digital usage. Technological skills only cannot bring about the required digital transformation, therefore, there is need for attitudinal change if librarians in developing countries are to benefit maximally together with their users by the application of new technologies. Employees need to be continuously trained to gradually bring about a change in attitude. The attitude and perception of librarians will significantly have an effect in the implementation and use of computer-based library systems. Digital competency for librarians has become inevitable. There is the need for librarians to be digital competent in order to implement changes and fulfill the information need of users as pressure to go electronic has never been more apparent than in this century. In this era, technologies are aimed to transform contact-based services into technology mediated services. These technologies have also changed the way users' source for information.

Academic libraries now strive towards becoming value added component of the educational institution by ensuring adequate provision of greater access to digital information. They also assist researchers and faculty members in using technology and electronic information sources to fulfill their educational and research needs. However,

libraries in Nigeria universities are being faced with enormous challenges that have hindered them from utilizing the best opportunities extended to them by digital technologies (Adeleke, Ojokuku and Ojo 2022). This has become a continuous problem facing academic libraries in Nigeria. It has affected their services and made it impossible for Nigeria library services to correspond with the nature of online services rendered in university libraries in Europe and America during the COVID 19 lockdown. There is lack of technological advancements in most academic libraries. This amounts to the need to obtain technological skills to maintain web servers that host remotely as well as maintaining proxy access to restricted resources. Academic librarians' ability to ensure a virtual access to the library resources will improve the information services delivery in the academic community and will also sustain their relevance. However, the fact still remains that there is a competence gap in the library sector in Nigeria due to digital transformation that is changing the library services. This was established by Nwosu & Obiano (2021) that academic librarians' lacks necessary skill are part of the major challenges.

Also, Ifije and Yusuf (2020) established that there was low access to library resources in Nigeria university library within the COVID era. Could there be a relationship between these low access of library resources and librarians not being exposed to the new technological skills. Thus, the problem of the study is to establish if there is a relationship between academic librarians' digital competencies and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.
Objective of the study.

The general objective of the study is to find out the relationship between academic librarians' digital competencies and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria. The specific objectives include.
1. To examine the relationship between digital knowledge of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.
2. To find out the relationship between digital skills of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.
3. To find out the relationship between digital attitude of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.

Research Questions
1. What is the relationship between digital knowledge of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria?
2. What is the relationship between digital skills of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria?

3. What is the relationship between digital attitudes of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south?

Hypothesis
1. There is no significant relationship between digital knowledge of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.
2. There is no significant relationship between digital skills of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.
3. There is no significant relationship between digital attitude of academic librarians and provision of virtual access services in libraries in federal universities in south east and south-south Nigeria.

Methods
This study employed a correlation research design. Bhandari (2023) states that a correlation design understudies the relationships between variables without controlling or manipulating it. The population of the study comprises all academic librarians in federal university libraries in south East and south-south Nigeria. A census sampling technique was used to select 203 academic librarians. The data collection was carried out with the use of an achievement test, cognitive test and structured questionnaire. To establish the reliability of the instrument, Kudder- Richardson formular 20 (Kr.20) was used for the achievement test, the derived value coefficient obtained was 0.74. Kudder – Richardson formular 21 (Kr. 21) was used for the Cognitive test which yielded reliability index of 0.82 while the Cronbach' Alpha formula was used for the questionnaire which yielded the reliability index of 0.85 and 0.82. The analysis of the three research questions and hypotheses were tested with the use of Pearson product correlation coefficient at 0.01 and 0.05 significant level.

Presentation of Result
Research Question 1: What is the relationship between the digital Knowledge of academic librarians and the provision of access services in libraries in federal universities in south-south and south-east, Nigeria.
Ho1. There is no significant relationship between digital knowledge of academic librarians and provision of access services in libraries in federal universities in south east and south-south Nigeria.

Table 1: Research Question 1 & Hypothesis 1: Analysis for the relationship between digital knowledge of Academic Librarians and Provision of Access Services

Table 1: Pearson Correlation of Academic Librarians' Digital Knowledge and Provision of Access Services

		Digital Knowledge	Access Services
Digital Knowledge	Pearson Correlation	1	.211*
	Sig. (2-tailed)		.012
	N	140	140
Access Services	Pearson Correlation	.211*	1
	Sig. (2-tailed)	.012	
	N	140	140

Results in Table 1 indicates that there is low positive relationship between librarians' digital knowledge and the provision of access services in libraries in federal universities in south-south and south-east, Nigeria, (r(140) = .211.

Also, it indicates a positive significant relationship between Academic Librarians' Digital Knowledge and the Provision of Access Services, the calculated (r) = .211, p = .012), is below the 0.05 level of significance. Therefore, the null hypothesis which stated that there is no significant relationship between digital knowledge of academic librarians and provision of access service in the libraries at federal universities in south east and south-south Nigeria is rejected.

Research Question 2
What is the relationship between academic librarians' digital skills and the provision of access services in libraries in federal universities in south-south and south-east, Nigeria?

Ho2.   There is no significant relationship between digital skills of academic librarians and provision of access services in libraries in federal universities in south east and south-south Nigeria.

Table 2: Research Question 2 & Hypothesis 2: Analysis for the relationship between digital skills of Academic Librarians and Provision of Access Services

Table 2: Pearson Correlation of Academic Librarians' Digital Skills and Provision of Access Services

		Digital Skills	Access Services
Digital Skills	Pearson Correlation	1	.180*
	Sig. (2-tailed)		.033
	N	140	140
Access Services	Pearson Correlation	.180*	1
	Sig. (2-tailed)	.033	
	N	140	140

Results in Table 2 indicates that there is low positive relationship between librarians' digital skills and provision of access services in libraries in federal universities in south-south and south-east, Nigeria, (r(140) = .180. Also, it indicates a positive significant relationship between Academic Librarians' Digital Skills and the Provision of Access Services, the calculated (r) = .180, *p* = .033). Is below the 0.05 significant level. Therefore, the null hypothesis which states that there is no significant relationship between academic librarians' digital skills and provision of access services in the libraries in federal universities in south east and south-south Nigeria is, rejected.

Research Question 3
What is the relationship between the digital attitudes of academic librarians and the provision of access services in libraries in federal universities in south-south and south-east, Nigeria?

Ho$_3$: There is no significant relationship between the digital attitudes of academic librarians and provision of access services in libraries in federal universities in south-south and south-east, Nigeria.

Table 3: Research Question 3 & Hypothesis 3: Analysis for the relationship between digital attitude of Academic Librarians and Provision of Access Services

Table 3: Pearson Correlation of Digital Attitudes of Academic Librarians and Provision of Access Services

		Digital Attitudes	Access Services
Digital Attitudes	Pearson Correlation	1	.625**
	Sig. (2-tailed)		.000
	N	140	140
Access Services	Pearson Correlation	.625**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Results in Table 3 indicates that there is high positive relationship between librarians' digital attitudes and provision of access services in the libraries at federal universities in south-south and south-east, Nigeria, (r(140) = .625. Also, it indicates a positive significant relationship between the Digital Attitudes of Academic Librarians and Provision of Access Services, the calculated (r) = .625, p = .000), Is below the 0.01 level of significance. Therefore, the null hypothesis which states that there is no significant relationship between academic librarians' digital attitude and provision of access services in libraries at federal universities in south east and south-south Nigeria is therefore, rejected.

Discussion of Results
The analysis of research question one and hypothesis one revealed low positive relationship between academic librarians' digital knowledge and provision of access services in libraries in federal universities in south east and south-south Nigeria. It also indicated a positive significant relationship between academic librarians' digital knowledge and provision of access services. Considering that it is low but positive is an indication that its influence on provision of access services will be minimal. However, the result of the relationship being significant indicates that despite the low positive relation, digital knowledge is relevant in the provision of access services. The result of the relationship being significant portrays Nneji (2018) finding which stated that digitization of library resources carried out in Donald Ekong library of University of Port Harcourt was at a very high extent because the librarians involved in the digitization process have the required knowledge. This indicates the fact that the high level of digital knowledge of librarians in University of Port- Harcourt has influenced the digitization process of the library to a high extent. In other words, an increase in the digital knowledge of academic librarians would influence the provision of access services.

The result of the analysis of research question two and hypothesis two indicated low positive relationship between librarians' digital skills and provision of access services in libraries in the federal universities in south-south and south-east, Nigeria, the result also

indicated that this relationship was significant. Considering that it is low but positive is an indication that its influence on provision of access services will be minimal. The result of the relationship being significant indicates that despite the low relation, there is a need for academic librarians to possess digital skill for the effective provision of access services. In other words, the decrease in the digital skills of these academic librarians can influence the provision of access services. This finding supports Akande (2014) that examined ICT skills of library personnel and observed that librarians lacked skills for advanced web-based ICT package, web page design, troubleshooting and project management, this has affected the provision of access services. Also, Ayogu& Okafor (2015) conducted a study on digital skills of librarians in Nigeria and indicated that the librarians' inabilities in processing data base management and web design application has affected the provision of access services in some libraries.

The findings of the analysis of research question three and hypothesis three revealed a high positive relationship between librarians' digital attitudes and provision of access services in libraries in federal universities in south east and south-south Nigeria. It also indicated a significant relationship. The high and positive relationship between academic librarians' digital attitude and provision of access services implies that academic librarian's digital attitude will have great influence on the provision of access services. Also, the result of the relationship being significant indicates that there is a need for academic librarians to possess a positive attitude for the provision of access services. The findings support Eireyi- Edewede (2023) observation that librarians' attitudes towards deployment of cloud computing technology in university libraries was high. Ramzam, Asif & Ahmad (2021) assessed librarians' attitudes towards application of information technology and revealed that there was an observed significant positive relationship between librarians' information technology attitudes and usage, awareness about new technology experience in computer usage. They further stated that information technology attitudes of librarians are positively associated with the library's information technology availability level. Roll & Ifenthale (2022) also observed that attitude towards digitization predicts self- efficacy of multidisciplinary digital competencies. They further stated that attitude towards digitization has a strong relationship to its effective implementation.

Conclusion
Based on the research findings, it is observed that there is positive relationship between academic librarians' digital knowledge, digital skills, digital attitude and provision of access services. However, there is low positive relationship between digital skills, digital knowledge and provision of access services, while there is high relationship between digital attitude and provision of access services. Also, there is an observed significant relationship between academic librarians' digital knowledge, digital skills, digital attitude and provision of access services. Therefore, it was concluded that positive and significant relationship existed between academic librarians' digital competencies and provision of access services in libraries in federal universities in south east and south-south Nigeria.

Recommendations

Base on findings, the following recommendations were made:

1. University management should ensure continues training and exposure of academic librarians to equip them with necessary digital knowledge, digital skills and attitude needed for the provision of access services. This could be through workshops, seminars, formal training on the latest facilities.

2. Also, these trained librarians should be fully involved in all the digital services geared towards the provision of access services as practice makes perfect.

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