Journal of Library Services and Technologies, 8(3), 199 – 210, September 2026
ISSN: 2636-7424 https://credence-publishing.com
DOI: http://doi.org/10.47524/jlst.v8i3.211

Relationship between attitude towards digital communication tools and effect on reference services delivery among librarians in university libraries in South-South, Nigeria

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Abstract
This study examined the attitude of librarians towards digital communication tools and effect on reference service delivery in federal universities in South-South, Nigeria. The correlational survey research design was adopted for the study while questionnaire was used as the instrument of data collection. A total of eighty- five (85) librarians were used for the study. Data were collected and analyzed using frequency, means and Pearson's Product Moment Correlation. The findings of the study revealed that technology attitude ($r = .267$; $p < 0.05$) has significant relationship with reference service delivery by librarians in federal university libraries in South-South, Nigeria. It was found that digital communication skills ($r = .284$; $p < 0.05$) have significant relationship with reference service delivery in university libraries in South-South, Nigeria. in conclusion there was a positive association between digital communication skills and reference service delivery among librarians in federal university libraries in South-South, Nigeria. It was recommended, among others, that there was urgent need for librarians and libraries to prioritize the use of technology, especially digital communication skills for reference service delivery, considering their advantages in enhancing quick and unhindered access to library information resources.

Keywords: Librarian's attitude, reference services delivery, digital communication, skills

Introduction
Librarian plays an essential role in the maintenance and continuity of virtual reference tools and services. Hence, librarians must possess positive attitude towards utilization of ICT resources to evaluate, update, upgrade the resources for more effective and efficient discharge of duties. Attitude towards the use of digital communication skills has been considered by researchers as a major factor that may influence the use of virtual reference tools by librarians. Oladejo, Alonge and Oyewole (2020) defined attitude as a person's disposition with respect to a certain thing, person or event. The trio also explained that a basic and reliable measure to identify technology attitude is either positive or negative attitude towards technology. Adamu, Akor and Saka (2020) opined that the technology attitude of a library staff can positively or negatively influence the use of technological tools in solving the information needs of users. The librarian plays an essential role in the maintenance and continuity of virtual reference tools and services. Hence, librarians must possess positive attitude towards utilization of ICT resources to evaluate, update, upgrade the resources for more effective and efficient discharge of duties.

Studies have indicated that the attitude of librarians towards embracing technological changes is not positive, despite the excitement surrounding the change that would be brought to librarianship and library services by the introduction of digital domain, offline reality and connected technology. Ramzan (2015) stated that although librarians' attitudes toward the application and utilization of ICT are crucial, technology itself does not bring about

changes; rather, it is the librarian who uses technology as a strategic resource to create infrastructure and provide effective virtual reference services to users. Hence, having a positive attitude towards it is crucial. The continuous dependence on the library for information access in the university library communities, coupled with the need for librarians to be more effective in reference service delivery has brought about the concept of virtual reference service in many University libraries. Ebiefung, Adetimirin and Oyewole (2020) observed that proliferation of virtual platforms has continued to push libraries to digital environment; hence, it is now becoming difficult, if not impossible, for libraries to effectively serve users across all disciplines without adequate application of virtual reference tools in performing reference services. Virtual reference service is the use of electronic platforms (virtual reference tools) to provide electronic assistance to users of the library without necessarily being physically present in the library. The era where librarians only provide reference services physically to users within the library are now being checked. With the introduction of digital technologies in performing reference services, the concept of virtual reference has assumed a special status, especially in university libraries across the world., librarians before now, were regarded as custodians of books, that access to them was only possible through physical presence of users in the library. With the proliferation of electronic information resources, it has become quite necessary for library users to be granted virtual access to the information resources of the library. Ifidon as cited in Kudu (2011) emphasized that the traditional reference service connotes the personal assistance given by librarians to individual readers who are in pursuit of information. In general, reference librarians need to pay more attention to digital communication techniques and activities in this era. The development of good digital communication skills will help in solving salient problems that could arise during service delivery. The virtual reference librarians need to be proficient in the use of internet resources. Pawar and Kaur (2015) indicate what they considered should be the basic internet skills of LIS professionals in the changing knowledge era. The authors stated that librarians should have basic knowledge of different search engines; they should be able to download and install simple programs of supporting devices such as printer and scanner. Librarians should have some simple knowledge about sourcing for information online, the use of BOOLEAN logic and various electronic information resources. That is, they should be able to tell different setups of various electronic resources, have some web knowledge and some knowledge on how to use social media such as Facebook, Twitter and WhatsApp. When librarians possess this knowledge in ICT application, its use for service delivery becomes achievable. The use of email in providing virtual reference tools has gained wide acceptance. Librarians are expected to engage in training to gain wider knowledge about different internet tools and how to apply them in virtual reference service delivery.

Statement of the problem

Undoubtedly, the advent and use of modern technologies in libraries have brought enormous changes in university libraries, especially in the ways reference services are delivered by librarians. Librarians in the universities are expected to be able to leverage virtual reference tools such as electronic mail, instant messaging applications, social media applications and other electronic platforms to provide effective reference service delivery to library

users. Preliminary investigations by the researcher however revealed that reference service delivery is still below expectation in Nigerian libraries despite the urgent need for and the importance of such services. This may be attributed to under-utilization of virtual reference tools by librarians. Interactions with some librarians further revealed that most librarians are yet to develop the right technology attitude, while some lack requisite digital communication and internet skills crucial in the use of virtual reference tools for the services. This has resulted in ineffective reference service delivery and by extension, poor user patronage of libraries. Consequently, it can be assumed that the level of e-readiness in Nigeria universities may be a major factor that has hindered the use of virtual reference tools by librarians. This study therefore attempts to investigate level of Librarians e-readiness and use of virtual reference tools for reference service delivery in Federal universities in South-South, Nigeria

Objective of the study

The main objective of this study is to investigate the relationship between attitude and use of virtual reference tools for reference service delivery among librarians in Federal Universities in South-South, Nigeria. The specific objectives seek to:

1. determine the attitude of librarians towards digital communication tools in reference service delivery in federal university libraries in South-South, Nigeria;
2. examine the effect of library digital communication skills on reference service delivery by librarians in federal university libraries in South-South, Nigeria; and
3. assess relationship between attitude towards digital communication tools and effect of digital communication skills on reference service delivery among librarians in federal university libraries in South-South, Nigeria.

Research questions

The following questions are addressed in the study:

1. What is the attitude of librarians toward digital communication tools in reference service delivery in federal university libraries in South-South, Nigeria?
2. What is the effect of digital communication skills on reference service delivery by librarians in federal university libraries in South-South, Nigeria?
3. What is the relationship between attitude towards digital communication tools and effect of digital communication skills on reference service delivery by among librarians in federal university libraries in South-South, Nigeria?

Literature review

The library as a selected collection of books and non-book materials needs a qualified librarian who will process, organize and disseminate information resources to users through various reference activities including but not limited to the use of virtual tools (Obi, 2021). Obi further emphasized that the present era requires libraries to provide both physical and virtual access to various information sources to effectively serve the patrons. Okoli, Ukwedeh and Joseph (2021) discussed three types of tools librarians use to offer reference services virtually. These includes; instant messaging, video conference, and digital reference robots. Instant messaging is a common communication tool that reference librarians use to exchange information with their users. This tool allows the reference librarian to

communicate with users either real-time or on the internet through the use of special text-based software. Video conferencing is a virtual reference tool that both visual and audio elements that allow the reference librarian to answer users' queries while seeing them online. According to Khobragade and Lihitkar (2015), some of the virtual reference tools used by librarians in service provision include, e-mails, Webforms or Ask a Service, Virtual Reference Desks, Web cameras, video conferences, digital reference robots and chat-based tools. Kolthuri (2015) emphasized on the role of ICT skills in the use of virtual reference tools by librarians. Okolo (2019) also noted that some of the virtual reference tools that librarians use to offer services to users include social media, blogs, microblogging, RSS and aggregator, video sharing tools like YouTube, photo sharing tools, wiki, podcast tools, bookmarks and academic social networks. Librarians use academic social networks to source for scholarly information for their users and also to know new research outputs and trends that they can share to users when carrying out Selective Dissemination of Information (SDI). Current awareness services are equally done in libraries using RSS. RSS is a group of web feed formats used to broadcast regularly updated content in a standardized format, including blog posts, news headlines, audio, and video. The person can access updated real-time information with this compact RSS. In order to make it simple for users to access their favorite websites when needed, libraries offer bookmarking options on their websites.

Other virtual reference tools that librarians use to provide virtual reference services include; webform, webchat, Ask-A-Services, video conferencing or webcam services, and social media. According to Akpan-Atata, Akwang, Akai, and Eyene (2015), librarians use social media platforms like Facebook, Skype, and Twitter as virtual reference tools in addition to institutional repositories, the internet, search engines, and free and open-source software (FOSS) to offer users reference services.

The librarian plays an essential role in the maintenance and continuity of virtual reference tools and services. Hence, librarians must possess positive attitude towards utilization of ICT resources to evaluate, update, upgrade the resources for more effective and efficient discharge of duties. According to Ankiewicz (2016), the positive or negative way individuals react towards technology, their preposition towards the use of technological tools and the way they handle technology forms their technology attitude. Hussain (2019) observed that some librarians feel that the fourth industrial revolution will have a negative impact on librarians' work since robots are likely to replace people, which could lead to an increase in unemployment rate of librarians. The value that librarians attribute to information and communication technologies (ICT) in virtual reference services is represented by attitudes. It depicts the conceptual worth of these technologies in librarians' imaginations, not their actual worth. In their personal thoughts and beliefs regarding the value and substance of ICT hardware, software, the Internet and its application, and other ICT in library operations, resources, and routines, librarians' attitudes toward ICT are demonstrated (Ramzan, 2015). Akparweke (2020) assessed the technological attitude of 102 librarians in their study on librarians' awareness, positive attitude and ICT skills: a panacea for effective reference services delivery in academic libraries in Southern Nigeria. The objective of the study was to ascertain whether or not librarians had positive attitude towards the use of technology in providing reference services.

The study used survey research method and questionnaire was the data collection tool. The result of the study showed that librarians have positive attitude towards addictiveness to the use of ICT tools shift from traditional to web-based services being technologically proactive in solving the changing information needs of users and collaborating with other libraries/librarians via the use of virtual reference tools. It was recommended that librarians should have a flair for technological advancements since this will assist them to acquire the positive mindset needed to use advanced technology to its full potential Jabur (2019) argued that librarians must accept that there will be no separation between the physical and digital worlds in the technological fourth Information Revolution environment. Such changes will undoubtedly affect not only their current practices but also their existence as professional librarians, which in most cases cause fear in the minds of librarians. However, Yuvaraj (2015) found that there is a misconception that putting the library in the cloud will eliminate the need for library IT workers since cloud service providers will handle all of the work. In order to augment or replace internal computing resources and support in hardware and software, library IT employees are crucial and need to develop positive attitude towards the use of technology for library functions.

In a study of ICT skills acquisition and competencies of academic librarians in Katsina State Tertiary Institutions, Manzo (2020), examine ICT skills and sources of ICT skills acquisition of 98 selected academic librarians to find out the constraints and solutions to the challenges of ICTs skills acquisition of the academic librarians. Survey research design was used, with the questionnaire as a means of collection data. Part of the skills evaluated was librarians' digital communication skills. The results showed that the most 60 (61.22%) respondents had digital image processing skills and e-mail communication skills while some 38 (38.78%) admitted that they are to create a discussion group using search engines like yahoo and skills to communicate virtually and manage the library. The outcome suggested that the three universities librarians had average digital communication skills. It was recommended that, those without the necessary skills especially for electronic communication and Internet search should be given the chance to update their knowledge and skills by regular training.

In a similar study, Okeji et al. (2020), assessed the digital literacy skills of 21st century librarians in private university libraries in Anambra State. A total of 32 librarians were purposively selected for the study. Descriptive survey design was adopted for the study and questionnaire was the research instrument used for data collection. The results showed that the librarians had high digital communication abilities and affirmed that they were able to share resources with colleagues online, network with colleagues online, could use and write on the website and know how to use databases for service provision. Additionally, the findings showed that the respondents paid for themselves to take digital literacy classes in order to learn digital communication techniques. It was recommended that library management should always provide financial sponsorship for the librarians for digital literacy skill acquisition and also professional development in general

Methods

The study adopted a survey research design. The study covered all federal university libraries in South-South, Nigeria. The population of the study consisted of 85 reference librarians from all federal university libraries in South-South, Nigeria.

The total enumeration sampling technique was used for the study. Total enumeration technique has to be used when the population is not large enough to achieve a desirable level of precision. The data for this study were collected using four-part questionnaire. The instrument was validated by experts from Department of Library and Information Science, Ignatius Ajuru University of Education, Porthacout. To ensure that the questionnaire was reliable, a pilot study was conducted using 30 librarians from Namid Azikiwe University library, University of Nigeria Nsukka. The results of the reliability measured using the Cronbach alpha value of 85.5 % were obtained and used for the study. In all, a total of eighty-five (85) copies of questionnaires were administered to the librarians at the reference section of the university libraries used but 83(97.6%) copies were retrieved and analysed for the study. Frequency, percentage, mean and Pearson's Product-Moment Correlation Coefficient were used for data analysis.

Table 1: List of universities used and response rate

University	Distribution	Response/Percentage
Federal University of Petroleum Resources, Effurun (FUPRE) Library	09	9 (100.) %)
University of Uyo (UNIUYO) Library	21	20 (92.9%)
John Harris library, University of Benin	12	12 (100.0%)
University of Calabar (UNICAL) Library	14	13 (92.9%)
University of Port Harcourt (UNIPORT) Library	13	13 (100.0)
Maritime University Library, Okerenkoko, Delta State	7	7 (100.0)
Federal University Library, Otuoke	9	9 (100.0)

Table 1 indicates the distribution of librarians in the university libraries that participated in the study. The Table 1 shows that 21 (92.9%) are respondents from University of Uyo Port Harcourt, which are the highest among the participated university libraries. This was closely followed by University of Calabar with 14 (92.9%). The least respondents are from Maritime University Okerenkoko, Delta state with 7(100.0 %) respondents. The reason might be because the institution is still young and newly established universities are always with fewer numbers of staff.

Table 2: Gender of the respondents

Gender	Frequency	Percentage
Male	39	47
Female	44	53.0
Total	**83**	**100**

Table 2 reveals the gender of the respondents. It indicated from the table that the total number of the respondents are 83. It also shows that 39(47.0%) of the respondents are male while 43 (53.0%) are female. The results indicate that there are more female respondents than male respondents in the study.

Research question one: What is the attitude of librarians towards digital communication tools in reference service delivery in federal university libraries in South-South, Nigeria?

Table 3: Attitude of the librarians towards digital communication tools in reference service delivery

S/N	Attitude	SA	A	D	SD		Decision
1	It feels comfortable working with ICTs to carry out selective information dissemination.	21	46	6	10	2.94	Agree
2	The of use of technology is necessary in solving the changing information needs of users.	22	51	10	0	3.14	Agree
3	Using technology to deliver more effective services in this era is essential.	28	45	10	0	3.22	Agree
4	The use of technology in answering reference queries to assist library users is not convenient at all.	20	23	12	28	2.42	Disagree
5	It's always exciting to learn how to effectively use virtual tools in the library for reference service provision.	14	31	13	25	2.41	Disagree
Grand mean = 2.83		**2,83>2.5**					

Table 3 shows the relationship between technology attitude and reference service delivery by librarians in federal university libraries in South-South, Nigeria. The result shows that the respondents indicated that using technology to deliver more effective services in this era is essential (=3.22; they considered the use of technology is necessary in solving the changing information needs of users (=3.14) they comfortable working with ICTs for to carry out selective information dissemination (=2.94) and that the use of technology in answering reference queries to assist library users is not convenient at all (=2. 42). The grand mean of 2.84 indicates that librarians in federal university libraries in South-South, Nigeria have positive technological attitude towards effective reference service delivery.

Research question two: What is the effect of digital communication skills on reference service delivery by librarians in federal university libraries in South-South, Nigeria.

Table 4: Effect of digital communication skills on reference service delivery among the librarians

S/N	Effect	SA	A	D	SD		Decision
1	My ability to navigate different technological devices to communicate with users in an online environment enhance effective reference service delivery.	6	31	13	33	2.12	Disagree
2	Using e-mail is an important skill that I possess that enhance my work as a reference service provider.	6	32	23	22	2.27	Disagree
3	My ability to share information resources with patrons online make reference services easy.	16	36	13	19	2.58	Agree
4	Its more convenient to communicate persuasively to meet needs of various audiences through use of blogs and websites.	33	28	6	16	2.94	Agree

5	It is easy to collaborate with other libraries/librarians for effective service delivery as I am able to use various digital tools	16	31	17	19	2.53	Agree
Grand mean= 2.49		**2.49<2.5**					

Table 4 shows the relationship between digital communication skills and reference service delivery by librarians in federal university libraries in South-South, Nigeria. The result shows that the respondents indicated that its more convenient to communicate persuasively to meet needs of various audiences through use of blogs and websites (=2.94); their ability to sharing information resources with patrons online make reference services easy (=2.58); they found it easy to collaborate with other libraries/librarians for effective service delivery as I am able to use various digital tools (=2.53) and that using e-mail is an important skill that I possess that enhance my work as a reference service provider (=2. 27). The grand mean of 2.49 indicates that the digital communication skills of librarians in federal university libraries in South-South, Nigeria is weak/poor.

Research question three: What is the relationship between attitude towards digital communication tools and effect of digital communication skills on reference service delivery among librarians in federal university libraries in South-South, Nigeria?

Table 5: Relationship between attitude towards digital communication tools and effect of digital communication skills on reference service delivery by among librarians in federal university libraries in South-South, Nigeria

S/N	Variables		Reference service delivery	Technology attitude	Decision
1.	**Reference service delivery**	Pearson Correlation	1	267**	
		Sig. (2-tailed)		.015	
		N		83	Significant
2.	**Technology attitude**	Pearson Correlation	267**	1	
		Sig. (2-tailed)	.015		
		N	83		
		****Correlation is significant at the 0.05 (2-tailed)**			
	3.Digital communication skills	Pearson Correlation	284**	1	
		Sig. (2-tailed)	.012		
		N	84		
				Significant	

Table 5 shows the relationship between librarian attitude, digital communication and reference service delivery among librarians in federal university libraries in South-south, Nigeria. The table (Table 5) reveals that Librarian attitude (r =.267; p <0.05) has significant relationship with reference service delivery by librarians in federal university libraries in South-south, Nigeria. This implies that there is positive association

between technology attitude and reference service delivery by librarians in federal university libraries in South-south, Nigeria. The result also shows that digital communication skills ($r = .284$; $p < 0.05$) has significant relationship with reference service delivery by librarians in federal university libraries in South-south, Nigeria. This implies that there is positive significant relationship between digital communication skills and reference service delivery by librarians in federal university libraries in South-south, Nigeria.

Discussion

Finding of this study reveals the existence of a significant relationship between technology attitude and reference service delivery by librarians in federal university libraries in South-South, Nigeria. The implication of the finding of this study is that librarians require positive attitude towards technology to effectively increase reference service delivery to patrons and having a negative attitude towards technology will also affect librarian negatively in the adoption of virtual reference tools by librarians. Therefore, the finding of this study is quite expected considering the fact most libraries are migrating to the provision of virtual services. This result shows a considerable level of e-readiness by librarians in universities in South-South, Nigerian. The finding of this study agrees with the study of Akparobore, Omosekejimi and Nweke (2020) who sought to ascertain whether or not librarians had positive attitude towards the use of technology in providing reference services in Nigerian libraries. The study revealed that librarians are technologically proactive and this has reflected in their use of virtual reference tools for reference services. The scholars also argue that there has been a constant shift from relying solely on traditional services by librarians in Nigeria to the provision of virtual services. Above all, the researchers found out that there is a significant positive relationship between technology attitude and reference service delivery by librarians

From the results, there is a positive relationship between digital communication skills and reference service delivery by librarians in federal university libraries in South-South, Nigeria. Putting it differently, ability to provide answers to queries, carry out referral services using various virtual tools use by librarians depends on their digital communication skills. By inference, librarians need digital communication skills to be able to use virtual reference tools for reference service provision. This implies that for librarians and libraries to be effective, especially in this era where the provision virtual services are highly encouraged, a major skill that is required is digital communication. This finding is in consonant with the report of Manzo (2020) who examined the types of digital of digital communication skills possess by librarians and found that librarians in Nigeria possess different digital communication skills, including the ability to communicate virtually to users; this reflects the level of their e-readiness towards the provision of e-services in libraries in Nigeria. Thus, by implication, librarians need digital communication skills to be able to leverage various online databases and other virtual reference sources for the purpose of providing adequate reference services to library patrons. In all its inferred from the study that there is a significant positive relationship between digital communication skills and reference service delivery by librarians

The result of the study shows the existence of a significant relationship between technology attitude and reference service delivery by librarians in federal university libraries in South-South, Nigeria.

The implication of the finding of this study is that librarians require positive attitude towards technology to effectively increase reference service delivery to patrons and having a negative attitude towards technology will also affect librarian negatively in the adoption of virtual reference tools by librarians. The finding of this study agrees with the study of Akparobore, Omosekejimi and Nweke (2020) who sought to ascertain whether or not librarians had positive attitude towards the use of technology in providing reference services in Nigerian libraries.

From the results, there was a also a positive relationship between digital communication skills and reference service delivery by librarians in federal university libraries in South-South, Nigeria. The finding of this study further lays credence to a study by Okeji et al. (2020) who established through their study that librarians were able to use different online databases for service provision due to their digital skills. By inference, librarians need digital communication skills to be able to use virtual reference tools for reference service provision. This implies that for librarians and libraries to be effective, especially in this era where the provision virtual services are highly encouraged, a major skill that is required is digital communication.

Conclusion

Reference service delivery is one of the core services of university libraries. Librarians are expected to ensure that libraries meet this important mandate by providing reference assistance timely and effectively to library patrons. However, this study has indicated that use of virtual reference tools such as social media, smart devices, electronic conference apps and e-mail services has a positive relationship with reference service delivery by librarians. This study has further indicated that e-readiness level, measured by technology attitude, digital communication and internet skills has a positive relationship with reference service delivery by librarians. It is therefore imperative for librarians to become more e-ready by acquiring technology related skills as this will make them to be more effective as information providers now and in the future.

Based on the findings of this study, the following recommendations are made:

1. The finding indicates that technology attitude influence reference service delivery ($r = .267$; $p < 0.05$). Therefore, librarians should ensure that they put up the right attitude as well engage in personal training session on how to leverage technology for reference service delivery.
2. Based on the revelation in this study that digital communication skills enhance reference service delivery ($r = .284$; $p < 0.05$), librarians should ensure that they devote more time towards acquisition and development of digital communication skills to effectively use virtual reference tools for reference services.
3. Internet contains a wide range of information resources and Internet skills have been found to be significant ($r = .253$; $p < 0.05$) for reference service delivery. Therefore, university libraries should ensure that reference librarians are trained specifically on how to leverage the Internet and it resources for reference service delivery.

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