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Accessibility and use of electronic resources for digital reference services among university libraries in southern Nigeria

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Abstract

Rationale of Study – The study examined the accessibility and use of electronic resources for digital reference services among university libraries in Southern Nigeria.

Methodology – The study adopted a correlational descriptive survey approach to interview 234 librarians who work in both public and private university libraries in southern Nigeria.

Findings – The study established that the available e-resources in university libraries in Southern Nigeria are e-books, e-journals, e-maps and databases and are extensively used for digital reference services in university libraries in Southern Nigeria. However, there are challenges emanating from low ICT literacy skills among librarians.

Implications – According to the study's findings, university library management, should set up a committee to look at the electronic resources that are appropriate for digital reference services and use that information as a benchmark for assessing the current electronic resources in order to identify those that are not currently available in university libraries but could provide potential solutions for digital reference services. Additionally, university library administration should regularly assess the digital reference services given in their libraries to determine the usage of electronic resources to enhance what university libraries offer.

Originality – The research has phenomenal significance because it has provided circumstantial information on the accessibility and use of electronic resources for digital reference services among university libraries in Southern Nigeria.

Keywords

Digital, reference, librarians, electronic resources, library

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1 Introduction

The role information plays in the development of the society cannot be quantified. For Edogiawerie (2020), information is essential for a country's progress. Universities' libraries play important roles in a country's progress because they supply the human resources necessary for social, economic, and political progression through the timely, accurate, and current dissemination of information. Okoli et al. (2021) observed that the university library provides several services to help academic institutions achieve their objectives. These services include acquisition, cataloguing, circulation, bindery or reprographics, and reference services. The reference service is the central location for helping users realise the library's full potential. Okoli et al. (2021) noted that the primary duty of libraries is to support teaching, learning, and research activities through reference services. The introduction of Information and Communication Technologies (ICTs) has led to digitising library services, including reference services. The development of the internet and related Web technologies has dramatically impacted how libraries offer information services to their clients and how clients choose to access the information (Okoli et al., 2021). To this end, the expansion of online information resources and advancements in ICTs has made the traditional procedure of finding needed information more difficult. The reference environment is changing from traditional to automated to hybrid to finally digital, which has aided in developing digital reference services (Khan & Ashraf, 2012; Kwanya et al., 2012).

The provision of reference library services to users in a computer-based environment while utilising various technical mediums is called a digital reference service. Jan (2018) noted that using software and the internet to enable human intermediation between the librarian and users at a distance is the core goal of the digital reference service. Okoli et al. (2021) disclosed that librarians have learned that to maintain the library's position as a significant player in providing information, they must reach out to their users outside the physical library building. Digital reference services were necessary due to the rise in library users using the internet to satisfy their information needs. It is important to note that Digital Reference Services significantly simplify users' access to necessary information quickly and effortlessly. Urhiewhu et al. (2015) averred that Digital Reference Services are, in fact, the basis for many academic libraries today. They allow users to send, obtain, download, process, and distribute information on any subject of interest without having to be physically present in the library, which encourages users to

use them to deliver the high-quality reference services from the library must make electronic resources available to users. Ukachi (2011) stated that contrary to print media, which are not routinely updated like electronic ones, the availability and use of electronic resources help users stay up to speed with recent advancements in their particular subject fields. At the Francis Sulemanu Idachaba Library at the University of Agriculture in Makurdi, Benue State, Nigeria, Ternenge and Kashimana (2019) looked into the accessibility, availability, and use of electronic information resources by students for research. The study looked at the kinds of electronic information resources accessible to students for research, their availability, accessibility, and use, and any issues students may have had in using or accessing those resources for their research. Ternenge and Kashimana (2019), in their study's conclusions, showed that students could access e-journals, e-newspapers, the Online Public Access Catalogue (OPAC), CD-ROM databases, e-magazines, e-books, online databases, e-research reports, virtual libraries online, science direct online, and Ebscohost reference databases for their research in the Francis Sulemanu Idachaba Library. Findings also showed that students had extensive access to the aforementioned electronic information resources for their research. Additionally, it becomes clear from the results that students extensively use the available electronic information resources for study. The Francis Sulemanu Idachaba Library at the University of Agriculture, Makurdi, had inadequate computers, poor internet connectivity that limited the number of titles that could be accessed through subscriptions, power outages, difficulty accessing and using the resources, a lack of pertinent e-resources across a range of disciplines, and no staff to help students (Ternenge & Kashimana, 2019).

Edogiawerie (2020) sees libraries use electronic resources as instruments to provide information to users. Edogiawerie defines electronic resources as information-containing documents that support librarians in challengingly providing users with access to information. He claims that ICT devices are the only means of gaining access to and using these contents. Since they support teaching, learning, and research activities, electronic resources are currently seen by most university libraries in Nigeria as an integral part of the library service. University libraries in Nigeria find it challenging to leverage electronic resources to provide digital reference services despite its relevance for doing so due to several issues, among which Ndubuisi and Udo (2013) reported significant obstacles include a lack of ICT expertise, a weak ICT infrastructure, a lack of

Internet-enabled PCs, frequent power outages, sluggish Internet connectivity, and trouble finding relevant information.

Similarly, Ajidahun (2019), in his research, states that the term "virtual library" or "digital library" is relatively new in Nigeria because there are few electronic resources available and used there. According to Ajidahun (2019), Nigerian library schools do not provide instruction in the electrical and technological capabilities required to provide electronic resources for digital reference services. Suppose the university library is to play a vital role in meeting the needs of users of this modern technology. In that case, the availability and utilisation of electronic resources for effective Digital Reference services is a significant library management component. In light of this, a study will examine how easily accessible and used digital reference materials are in a few South-South states of Nigeria's university libraries.

2 Statement of the problem

In university libraries across Southern Nigeria, incorporating electronic resources for digital reference services significantly improves information availability. Even so, there are several urgent problems and difficulties relating to the utilisation and accessibility of electronic resources, notwithstanding the potential advantages of these resources. A thorough investigation of these concerns is necessary to ensure that electronic resources are efficiently used to improve the quality of digital reference services in these libraries. Users must be aware of the resources that are accessible and have the requisite skills to access and use them in order to use electronic resources effectively for digital reference services. Inadequate user awareness and training programmes at university libraries hamper the most effective use of electronic resources. They are resolving the challenges surrounding the use and accessibility of electronic.

The following questions were raised to guide the study:

1. What electronic resources are used for digital reference services in university libraries in Southern Nigeria?
2. To what extent have electronic resources been used for digital reference services in university libraries?
3. What are the various modes of digital reference services offered by university libraries?

4. What are the challenges confronting using electronic resources for digital reference services in university libraries?

3 Literature review

Libraries have experienced a fundamental change in delivering reference services in the digital era. A dynamic digital reference service that uses electronic resources has replaced traditional reference desks. This essay examines the critical elements of accessibility and utilisation of electronic resources for digital reference services in libraries, concentrating on the advantages, difficulties, and approaches for maximising this vital feature of contemporary librarianship. Libraries have expanded their holdings to include digital resources due to technological advancements. E-books, e-journals, databases, and other online resources accessed through library websites or specialised platforms can be included (Kapadi & Patil, 2023). The term "electronic resources" refers to a group of digital materials that a library has collected and organised and are accessible to and usable by library users. It typically includes electronic editions of books, journals, articles, databases, multimedia, and other digital information. E-resources are developed to extend the availability and reach of library materials beyond physical limits. They enable users to conveniently access materials from a distance via computers, smartphones, or other digital devices. On library websites or other specialised platforms, digital collections can be hosted, frequently needing authentication for authorised users (Kapadi & Patil, 2023).

According to Laltlanmawii (2011) and Armstrong and Lonsdale (2012), e-resources include e-journals, e-books, e-reports, e-papers, e-reference sources, databases, e-contents and e-learning materials. Other categories include blogs, which first appeared as online diaries and are now a part of Education Media OnLine (EMOL), a JISC-funded project. EMOL, consisting of 15 film and video assets, is housed by EDINA and cleared for digitisation by the JISC's Managing Agent and Advisory Service (MAAS), which also creates related metadata (Armstrong & Lonsdale, 2012). These days, vendors and publishers provide us with a variety of reference materials via their websites and databases, including dictionaries, yearbooks, and encyclopaedias, for example, online dictionaries at www.dictionay.com, www.m-w.com, www.dict.leo.org, and www.batleby.com. Online handbook (www.uia.au)(Laltlanmawii, 2011).

Accordingly, Kapadi and Patil (2023) posit that there are several reasons why electronic collection is valuable and widely adopted; they include accessibility and preservation.

Accessibility, according to Kapadi and Patil (2023), allows electronic collections for easy and convenient access to information; this includes digital files that can be stored on servers or in the cloud, making them accessible from anywhere with an internet connection. It enables users to retrieve and interact with the information whenever needed, improving efficiency and productivity. On the other hand, Preservation of digital files can be easily replicated and stored in multiple locations, reducing the risk of loss or damage. Electronic collection methods often include backup and recovery processes to guarantee data integrity and long-term preservation (Kapadi & Pati, 2023). This is particularly important for valuable or historically significant materials that need to be protected for future generations

There are various types of digital library collections. They include textual collections that consist of digitised books, manuscripts, articles, reports, theses, and other textual documents. They comprise various subjects and genres, such as literature, science, history, and more (Kapadi & Pati, 2023). Textual collections often provide searchable text and may offer features like annotations and bookmarks. Image collections contain digitised photographs, paintings, maps, diagrams, illustrations, and other visual materials. These collections can be valuable resources for research, education, and creative projects (Kapadi & Pati, 2023). They may contain high-resolution images and allow users to zoom in, rotate, or interact with the visuals. At the same time, audio collections consist of digitised sound recordings, such as music, speeches, interviews, podcasts, and oral history archives (Kapadi & Pati, 2023). Users can access and listen to audio files online, often with additional features like playlists, metadata, and transcription option

A study by Urhiewhu (2014) explored how undergraduates at universities in the states of Delta and Edo use digital information resources that are available to them. The main conclusions showed that Digital Information Resources (DIRs), including e-conference papers, e-magazines, e-newsletters, e-reference materials, e-projects, e-journals, seminar papers, e-books, and e-dissertations, were accessible at the university libraries that the researcher visited. The Ambrose Alli University Library (AAU) contains ten (10) different DIR types. Eight DIRs are accessible in John Harris Library at the University of Benin (UNIBEN) via interlibrary loan (ILL) or online subscription. Federal University Petroleum Resources Library, because the digital library is still being structured and was just recently founded, do not have any DIRs. However, they continue using it as a cybercafé where students can use the internet's resources to search for academic information.

Paines and Kwachi's (2013) study discloses that the majority of the databases the institution subscribed to were HINARI, JSTOR, OARE, AGORA, Ebsco host resources, TEEAL, DOAJ, MIT Open Courseware, Proquest, ScienceDirect, and Elsevier EIR. Even though some of these databases were free, it was also discovered that the membership duration impacts the availability of the resources for electronic resources. In the view of Kinengyere et al. (2012) and Fagbami (2014), in order to assist teaching, learning, and research activities, the majority of the materials available in African universities like Nigeria are open access resources accessible to libraries in poor countries with internet connectivity. According to Kumar and Kumar (2014), electronic resources should promote learning and project writing. Ansari and Zuberi (2010) cited that many university students use e-resources from the library to bolster their argument. Others utilise them to finish their schoolwork, study for exams, and learn more about the subject.

Similarly, Cothran (2011) asserted that graduate students utilise Google Scholar more often than other users due to its ease of use and comprehension. Additionally, search engine layouts and user interfaces are beneficial and excellent academic tools. Alhassan and Macaulay (2015) found that while some electronic resources, like CD-ROM databases, electronic journals, online public access catalogues (OPAC), and electronic books, were infrequently used by respondents, others, like the internet, email, online databases, and electronic databases, were heavily used by respondents in both universities. The study also reveals that undergraduate students used internet resources, including online applications and registration, research, communicating with friends and classmates, gathering resources for writing projects, finishing assignments, and other personal activities.

Komolafe-Opadeji (2011) investigated the use of the internet and electronic resources by postgraduate students at a private institution in Nigeria and revealed that postgraduate students frequently used the internet and favoured using free online resources like Google and Wikipedia over paid online databases like HINARI, EBSCO Host, JSTOR, Questia, and High Beam. Delta State University's Department of Library and Information Science graduate students are looking into leveraging electronic resources for digital reference services; Ozoemelem (2019) noted that postgraduate students use electronic resources at an extremely high rate. In an Australian study done by Deng (2010), the researcher revealed that electronic resources can be used for a variety of

things, such as researching a particular subject, learning general knowledge, getting specific answers to queries, finishing tasks, reading literature reviews, writing essays, and assisting in decision-making. This finding illustrates how people rely on the availability of online resources to complete their academic responsibilities. Madu, Usman, and Abba (2018) contend that the lack of funding and the high cost of information resources are the two biggest obstacles to the availability and usage of electronic resources for digital reference services in university libraries in Iran.

Furthermore, Nicol and Crook (2012) opined that a digital reference service may demand a sizable number of employees and resources when deploying chat services. For instance, Nigeria is experiencing a power supply shortfall. Every service delivery, including the 24-hour-a-day digital reference services, has been significantly impacted by this.

A study conducted by Mulla (2011) reported that the significant lack of subscriptions in pertinent academic subjects and a lack of user orientation or training hinder the availability and use of electronic journals at university libraries. Bhatt and Rana (2011) also identified that the most common issues with the availability and usage of e-resources for digital reference services at most university libraries include a lack of functional websites, slow connectivity, a lack of knowledge about the statutory provisions for accessing e-resources by the institutions, technical issues, a lack of sufficient e-resources, concerns about permanence, a high purchase price, and a lack of legal requirements. According to a comparable study by Shukla and Mishra (2011), most research researchers have poor internet access issues. Slow internet access is the most frequent issue university libraries encounter while providing users with digital reference services, according to Madhusudhan (2018). He also mentioned how difficult it is to obtain pertinent information and how long browsing or downloading pages takes. He added that, among other things, the pupils cannot successfully use e-resources because they lack the necessary IT competence and too much information is obtained. Mulla (2011) revealed that most academic libraries struggle with a lack of e-resources training. Within university libraries in Southern Nigeria, electronic resources are crucial to providing digital reference services. To fully utilise the advantages of these resources for academic research and support, accessibility and utilisation issues must be addressed. Advocacy, user education, and technical assistance are a few tactics libraries can employ to further their transition to the digital era and continue to offer valuable services to their users.

4 Methodology

In this study, a correlational descriptive survey approach was employed. Two hundred thirty-four librarians work in both government-owned and private university libraries in southern Nigeria. The study adopted a total enumerative sampling technique. This research technique involves gathering data from every person or thing in the complete population or sample frame instead of choosing a subset (sample) to focus on. In other words, it tries to research and gather information from every component or unit that makes up the population being studied (Mweshi et al., 2020; Bhatt, 2020; Ritchie et al., 2003). There were 234 copies of the questionnaire sent; 213 (91%) of them were completed and were helpful in the research. Because a common and acceptable response rate for most studies is 60%, the study's response rate of 91% is recognised as appropriate. According to Fincham (2008, Kajermo et al., 2010), researchers should aim for a response rate of roughly 60% for most studies. Descriptive statistics, such as frequency, percentage, and mean, were used to analyse the data.

4 Findings of the study

Research Question One: What electronic resources are used for digital reference services in university libraries?

Table 1: Available Electronic Resources for Digital Reference Services

Electronic Resources	**Available**		**Not Available**	
	No.	**%**	**No.**	**%**
Gadgets				
Android Phone	115	54	98	46
Audio/Video tapes	97	46	116	54
Computer	109	51	104	49
Digital Camera	126	59	83	41
CD-ROMs	134	63	75	37
Flash drives	128	60	85	40
Online Databases Resources				
JSTOR	127	59	86	41
Ebscohost	135	63	78	37
Sage Journals Online	98	46	115	54
Science Direct	90	42	123	58
Proquest	134	63	79	37
Agora	92	43	121	57
Directory of Open Access Journals (DOAJ)	121	57	87	43
ERIC	161	76	52	24
Google Scholar	94	44	119	56
Hinary	112	53	101	47
Emerald	91	43	122	57

Micro-Electronic Resources				
e-books	124	58	89	42
e-journals	129	61	84	39
Institutional repository	103	48	110	52
Online searching using search engines	129	61	84	39
e-map	119	56	94	44
Library websites	133	62	80	38

Table 6 shows the available electronic resources for digital reference services. It was revealed that CD-ROMs (134, 63%), flash drives (128, 60%), digital cameras (126, 59%), Android phones (115, 54%), and laptops (109, 51%) are among the devices. ERIC (161, 76%), Ebscohost (135, 63%), Proquest (134, 63%), JSTOR (127, 59%), DOAJ (121, 57%), and Hinary (112, 53%) are examples of online databases. The available electronic resources for digital reference services at university libraries in Southern Nigeria include institutional resources (108, 48%), e-books (124, 58%), e-maps (119, 56%), and e-journals and search engines (129, 61%), respectively.

Research Question Two: To what extent have electronic resources been used for digital reference services?

Digital Reference Services	**VHE**	**HE**	**LE**	**VLE**	**Mean**
Providing Online Public Access Catalogue (OPAC) services.	64	58	18	73	2.54
Providing an online Network for resource sharing with other libraries.	67	67	38	41	2.75
Providing online inter-library loans and exchange services.	46	66	30	71	2.41
Providing online user education and instructional services.	31	60	72	50	2.34
Providing ways to update electronic books and journals.	79	60	33	41	2.83
Making information available in CD-ROM to patrons.	62	42	64	45	2.57
Use of your internet facilities for email services.	57	56	44	56	2.54
Providing workstations for online searching.	30	51	82	50	2.29
Use of ICT systems for chat services.	35	45	68	65	2.23
Use of a variety of databases for reference services.	30	45	84	54	2.24
Providing e-reference collections for ready reference services.	34	71	67	41	2.52
Compiling of electronic documents such as electronic abstracts, theses, and dissertations (ETD) to be used by patrons.	46	63	74	30	2.59
Assisting patrons in conducting complex literature searches electronically.	67	27	70	49	2.53

Selective dissemination of information (SDI)	78	50	33	52	2.56
Bibliographic services	40	83	44	46	2.55
Teaching and instructional services	66	61	40	46	2.69
Criterion Mean = 2.50 Aggregate Mean = 2.51					

Table 2 reveals the extent of use of electronic resources for digital reference services in university libraries. The aggregate mean of 2.51 was more significant than the criterion means of 2.50 in the table, indicating extensive usage of electronic resources for digital reference services in university libraries in Southern Nigeria.

Research Question Three: What are the modes of digital reference services rendered by university libraries?

Table 3: Modes of Digital Reference Services

Modes of digital reference services	**Agree**		**Disagree**	
	No.	**%**	**No.**	**%**
I use Asynchronous Digital Reference Service to render reference services.	141	66	72	34
I use Synchronous Digital Reference Service to render reference services.	156	73	57	27

Analysis in Table 3 shows that most respondents acknowledged that university libraries in Southern Nigeria offer synchronous (156, 73%) and asynchronous (141, 66%) digital reference services.

Research Question Four: What challenges confront using electronic resources for digital reference services in university libraries?

Table 4: Challenges Confronting the Use of Electronic Resources for Digital Reference Services

Challenges to the Use of Electronic Resources for Digital Reference Services	**Agree**		**Disagree**	
	No.	**%**	**No.**	**%**
There is a low level of computer literacy skills among patrons.	191	90	22	10
Computer literacy skills among reference librarians are deficient	109	51	104	49
The power/electricity supply is irregular.	93	44	120	56
The cost of setting up ICT equipment, facilities, and Systems are very high.	104	49	109	51
Librarians exhibit poor attitudes towards the use of ICT for reference services.	96	45	117	55
There is a high cost of maintaining ICT facilities in University Libraries	100	47	113	53

Librarians have difficulties in assessing information/ materials	193	91	20	9
Funding for university libraries is very low.	112	53	101	47
The university management has a poor attitude towards developing electronic resources and digital reference services.	103	48	110	52
Librarians are ignorant of the benefits of using electronic for digital reference services in libraries.	100	47	113	53
There is a low level of cooperation between the reference librarians and users.	195	92	18	8
Internet access and connectivity is very poor	105	49	108	51
There is a high bandwidth cost	98	46	114	54
There is a low bandwidth penetration	97	46	116	54
The libraries do not have functional websites	109	51	104	49
There is a lack of awareness about statutory provisions for accessing e-resources by the institutions.	192	90	21	10
Technical problems doubt in permanency	103	48	110	52
The cost of acquiring electronic resources is very high	106	49	107	51
There is an inadequate qualified workforce	91	43	122	57

The data in Table 4 revealed the challenges faced by university libraries in a few South-Southern Nigerian states when attempting to provide digital reference services. A lack of funding (112, 53%), ignorance by institutions of the statutory provisions for accessing e-resources (192, 90%), low levels of patron computer literacy (191, 90%), low levels of cooperation between reference librarians and users (195, 92%), difficulties for librarians in evaluating information/materials (193, 91%), low levels of reference librarian computer literacy (191, 90%), and a lack of functional websites (109, 51%) were all discovered.

5 Discussion of the findings

The study found that university libraries that provide digital reference services have access to electronic devices (CD ROMs, flash drives, digital cameras, Android phones, and computers), online database resources (ERIC, Ebscohost, Proquest, JSTOR, DOAJ, and Hinary), and micro-electronic resources (library websites, e-journals, search engines, e-books, e-maps, and institutional resources. The outcome is consistent with that of Paines and Kwachi (2013), who found that the institution essentially uses the databases listed below: MIT Open Courseware, Proquest, ScienceDirect, Elsevier, JSTOR, OARE, AGORA, Ebsco host resources, TEEAL, and DOAJ. In their study, R. Kinengyere, Kiyingi, and Bazirake (2012) and Fagbami (2014) revealed that the majority of resources accessible in African universities, such as Nigeria, are open access resources, which are

accessible to libraries in developing countries that have internet connectivity and support teaching, learning, and research work. Free access to open-access literature is available via the Directory of Open Access Journals (DOAJ).

The significant findings demonstrated that the university libraries the researcher visited provided access to Digital Information Resources (DIRs) such as e-conference papers, e-zines, e-newsletters, e-reference materials, e-projects, e-journals, e-seminar papers, e-books, and e-dissertations. The findings are consistent with those of Alhassan and Macaulay (2015), who examined the frequency and ease of use of internet resources by university students in Niger State. The internet, email, online databases, electronic databases, and electronic journals were commonly utilised by respondents from the two universities, per their research. The outcome differs from that of Oyedapo and Ojo (2013), who researched how little the respondents used electronic resources. According to research on using digital reference services at Obafemi Awolowo University in Nigeria. The findings back up Kiondo's (2014) assertion that, as a consequence of university libraries realising their potential for learning and teaching, more institutions are utilising electronic resources to enhance educational quality.

According to the examination of data on the various kinds of digital reference services rendered in those libraries in a few South-Southern states of Nigeria, synchronous and asynchronous digital reference services are offered in the university libraries included in this study. The findings support Dollah and Singh's discovery that asynchronous digital reference services are a type of digital reference service offered by librarians (as cited in Uutoni, 2014). Additionally, they said there was a delay between the inquiry and the answer for asynchronous digital reference services, particularly those that use email, web forms, or "Ask a Librarian" services. Reference librarians can take their time and answer queries using this digital reference service. The findings corroborated Uba and Okonkwo (2019), who discovered that modern libraries offer synchronous digital reference services. A further point was made about the synchronous digital reference services being real-time digital reference services. This digital reference service is distinguished by its prompt response to queries. This implies that both a library user and a librarian can communicate online.

On the challenges facing the use of e-resources for digital reference, The results of the data analysis on the issues affecting digital reference services revealed low levels of cooperation between reference librarians and users, difficulties in evaluating

information/materials by librarians, ignorance of institutional policies regarding access to e-resources, low levels of patron computer literacy, a lack of funding, a lack of computer literacy among reference librarians, and a lack of awareness. These results are consistent with those of Madu, Usman, and Abba (2018), who discovered that a lack of funding and the high cost of information resources pose the main obstacles to the availability and usage of electronic resources for digital reference services in university libraries in Iran. The results align with those of Ibrahim (2016), who found that the absence of user orientation or training and the paucity of subscriptions in pertinent fields of study are the main obstacles to accessing and using electronic journals in university libraries. This implies that some users might be unable to get the data they want for their academic tasks. The results supported Bhatt and Rana (2011), who stated that the lack of functional websites is among the most pervasive issues with e-resources being accessible and used for digital reference services in most university libraries.

6 Conclusion

Undeniably, digital reference is a cutting-edge, effective method of offering reference services that has solidified its position in the library profession due to its many advantages over the more traditional approach. Through a variety of channels, including Facebook, search engines, live chat, web connect centre, video conferencing, WhatsApp, Email or Ask-a-Librarian, instant messaging, and reference robots, the libraries taking part in this study offer both synchronous and asynchronous digital reference services. More specifically, the digital reference services provided by the librarians in the university libraries under study consider the usability and accessibility of electronic resources, including devices (CD ROMS, flash drives, digital cameras, Android phones, and computers), online database resources (ERIC, Ebscohost, Proquest, JSTOR, DOAJ, and Hinary), and micro-electronic resources (library websites, e-journals, search engines, e-books, e-maps, and institutional resources).

7 Recommendations

The researcher made the following recommendations based on the findings of the study:

1. The study recommends that university management concentrate more on providing e-resources in libraries in this ICT driven era.
2. University library management should routinely assess the digital reference services supplied in their libraries as a matter of policy to determine the volume

of usage of electronic resources in order to sustain and enhance what is presently available in their libraries.

3. The administration of university libraries should take steps to ascertain the underlying causes of the factors identified as inhibiting the delivery of digital reference services and provide solutions for removing such barriers.

4. Finally, university management should ensure that library staff members have an equal opportunity to learn on the job by providing opportunities for staff development programmes that will improve library staff members' skills in applying current technologies for delivering digital reference services.

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