

# Provision of Digital Reference Services in Selected Nigerian State University Libraries

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## Abstract

*Rationale of Study* – This paper investigated provision of digital reference services in selected Nigerian state university libraries. The study examined how digital reference service can improve information service delivery to library users in Nigerian university libraries.

*Methodology* – A survey research method was adopted for the study. The population of the study comprised of 45 professional librarians from three university libraries. These are Delta State University Library, Abraka; Niger Delta University Library, Amasoma; and River State University of Technology library, Port Harcourt. The population of librarians in the three institutions was small. So, the whole population formed the sample size and was used for the study. A questionnaire was used to collect data for the study. Data were analysed using descriptive statistics.

*Findings* – The study revealed that digital reference services offered in the university libraries include instructions, guidance, information and research assistance and consultation to library users. Social media like Facebook and Twitter, text-based chats, email correspondences, live chat and telephone communication are all channels through which digital reference services are delivered in the state university libraries studied. Effects of digital reference services on university libraries include increased patrons' interactions, speed of service delivery to users and accessibility of information services. Challenges faced in the provision of digital reference services were low bandwidth in remote areas, hitches in downloading articles, slow Internet connection and insufficient support for reference librarians.

*Practical Implications* – The findings will serve as a reference point for other university libraries considering offering digital reference service.

*Originality* – This is an original research study. This study is the first of its kind in the study area.

## Keywords

Digital reference services, reference services, university library services, library patrons, information access

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## 1 Introduction

Information technology has brought fantastic changes in almost every facet of information services. It enables patrons to explore, discover, demand, obtain and download information from sources dotted all over the globe. All these transformations are giving rise to new developments of information services. In this series of developments, digital reference is one of the newest trends in the digital era. Digital information has speedily become one of the hallmarks of the Internet. Reference service is a personalised service rendered by the library reference librarians to individual patrons to enable them to make utmost use of library materials. It is a bridge between library materials and patrons (Connaway, 2013).

Reference services have been transformed by rapid developments in information and communication technologies (ICTs) as information has turned out to be more and more accessible through electronic means. Kadir, Dollah and Singh (2015) observed that university libraries are determined to meet the information needs of the university and research community by digitising their services and enhancing access to their resources. One of the ways of enhancing access to library resources is the provision of a functional reference service. A winning plan to advance operation of resources is to ensure clients' endorsement through a well-organised and helpful reference service. Awodoyin and Aina (2018) observed that the speed and accuracy in dealing with patrons' queries by reference librarians have a huge bearing on patrons' endorsement. Currently, there has been a change in the function of library, from a clearinghouse of products and a service centre for printed publications, to becoming an intermediary for conventional resources, and for networked services based on digital information materials. These information materials come in print, audio, video, compact disc, and electronic formats. The materials may or may not be owned by the library. Some of these materials may be accessible to clients without charge while others are obtainable only through libraries that have purchased them. Libraries are also expected to add value to the products and services. Value is added to information by facilitating access through indexing and bibliographic explanations, and through the creation of systems which create information more rationally prepared and easier to find. Librarians add value to the collections (both conventional and networked) by helping clients to navigate the world of information through content growth, teaching, investigative services, and reference aid. Another form of adding value is the provision of effective reference services (Smith, 2010).

In addition, the aspiration of any university library as stated by Madukoma (2015) is to distribute information to library patrons as a vital instrument for continued existence. This aspiration will only be achieved when access to library materials is maximised successfully and used

professionally. Reference services fulfil one of the university library functions of dissemination of information. Nevertheless, reference services are likely to differ from one library to another. Coffman (2003) categorised reference services into two, namely, display probing and existing awareness services, and selective dissemination of information.

## **2 Concept of Digital References**

Reference service is a precise service adapted towards the information needs of each library patron thereby giving them a sense of belonging to the library. It includes guiding patrons in order to help them to know what services and materials are accessible and how to find them inside the library (Awodoyin & Aina, 2018).

Provision of reference services is one of the library's core functions besides acquisition, classification, cataloguing and physical planning. The word reference services, sometimes referred to as reference and information services, can be defined as personal assistance provided by skilled personnel to library patrons in search of information (Thorpe, 2017).

Digital reference service is defined as a platform by which people can present their questions and have them answered by library personnel through some electronic means (Abubakar & Kacholom, 2017). Digital reference is also referred to as an electronic reference service, or effective reference. Communication is done by means of instant messaging, conversing, videoconferencing, and Voice over Internet Protocol (VoIP) among other digital communication channels (Tutu, 2016).

Digital reference service is an advancement of the traditional reference services that is emerging as an accepted solution to meet the patrons' information needs in the new information environment. The digital library is an electronic or virtual library where information is selected, acquired, processed, organised, stored and retrieved in digital form. The patrons of digital libraries are the universal patrons who should have facility to access all digital sources of information according to the desires of patrons. Reference librarians are also using the Internet to serve the library community. The concept is extended beyond the physical library and designated reference desk hours, and opening the building for 24hour access (Singh, 2012). For the purpose of this study, digital reference is perceived as an information service that uses digital communication to link library clients with librarians and their information sources. It is also defined as a library service provided by librarians to library users that give the users the opportunity to find, search, receive and download required information with the aid of the Internet. This study investigates provision of digital reference services in selected Nigerian state university libraries because no study on provision of digital reference service have been done in the study area hence this study tends to fill the gap.

The study examined provision of digital reference services in selected Nigerian State University Libraries. The specific objectives were to find out the digital reference services offered by the selected university libraries; identify the channels through which digital reference services are provided; ascertain the effects of digital reference services on university libraries; identify the reference questions asked by library clientele digitally; and examine the challenges university libraries face in the provision of digital reference services.

### **3 Review of Literature**

Suleiman, Aduku and Kpakiko (2017) in their study awareness and use of reference and information services amongst library users in university libraries in two states in Nigeria found that the majority of the respondents are aware of and utilise diverse forms of reference and information services provided. The services include individual assistance from library personnel, issuing of reference letters, and literature search services. Likewise, a study on the assessment of reference services in university libraries in Nigeria by Grundy (2016) discovered that the commonest reference services are referral service and answering reference queries.

Malik and Mahmood (2014) studied reference collection and services of four academic libraries in Nigeria. The findings of the study revealed that the activities carried out by the reference personnel are keeping statistics of patrons who visit the section and their queries, taking records of mutilated books sent for binding, keeping stocks for books consulted daily and reference resources taken out for photocopying. Other duties are responding to reference questions,

Tutu (2016) whose study is on provision of digital reference services in academic libraries in Kenya reported that, channels used to provide digital reference service by surveyed academic libraries included Twitter, Ask-a-librarian or email, Facebook, and Frequently Asked Questions (FAQs), and Live chat. None of the libraries surveyed used channels like Skype, Instant Messaging, academic library digital reference consortium, and Second Life. Ease of use, availability, affordability, and popularity were major factors considered in choice of digital reference channel.

Elahi and Islam (2014) in their study confirmed that mobile devices and applications provide access to information in the comfort of people's homes and offices using their cellular phones or personal digital aids. Reference services are no longer tied to a desk but can function anywhere (Buss, 2016). Sekyere (2010) studied 79 academic libraries in ten West African countries and established that less than 40% offered digital reference services through phone, email and fax. The study of Nicholas (2011) revealed that there has been an increased usage of Web 2.0 applications, mobile technologies, and visual world in the provision of reference services. Digital reference is basically done via the Internet technology.

Ramos and Abrigo (2012) carried out a study on evaluation of the digital reference services in selected Philippine academic libraries. The results of the study showed that digital reference services provided precise information; chat reference led to successful working relations between library users and librarians, and enhanced reference service. The study of Emojorho (2014) revealed that digital reference service improves the provision of information services.

A study by Adamou and Ntoka (2017) discovered that library patrons at the Panteion University Library and Central Library of Technological Educational Institution (T.E.I.) of Athens were contented with the convenience of digital reference services as well as enhanced accessibility of e-resources provided by both academic libraries using the World Wide Web and online databases.

The study of Uzoigwe and Eze (2018) also revealed that, digital reference service had a positive impact on provision of information services in terms of speed, communication, and overcoming time, physical, geographical, human, and political barriers in the provision of information services. Stable Internet connection, coupled with adequate bandwidth makes the provision of information services faster. Users and library staff can be able to communicate in real time. Information can be downloaded and sent to a user instantly.

Digital references have enabled the libraries to provide information services to different groups of users. Shy users, those with embarrassing questions, those living far away from the library and people with hearing or speaking impairments can all be able to access library services. Some of these methods have enabled the library to offer its information services in real time (Adeleke & Nwalo, 2017).

Ola (2010) discussed challenges that Kenneth Dike Library encountered in its efforts to deploy ICTs in its reference services delivery system. The challenges include lack of good funding, infrastructural deficiencies, retaining capable computer technology professionals, and internal organisational politics over which department is in charge of ICT equipment installed in the library.

In a similar study on reference service transformation in academic libraries by Ayeni (2015) found out that in all the ten libraries surveyed, there was a decline in face-to-face reference services. Madukoma (2015) reported that the users of the Babcock University library, Ilishan-Remo, Ogun State, Nigeria have a limited level of awareness of electronic reference services and recommended that library authority should create awareness at the different school seminars, during the use of library and study skills classes, among others. Grundy (2016) also found out that reference service may not be as successful as it should be, when there are no good communication, interpersonal skill, information literacy skill and ICT skill.

Tofi, Agada and Okafor (2020) in their study utilization of digital reference resources and services by postgraduate students in university libraries in Benue State, Nigeria the findings of their study revealed that challenges that hinders utilization of digital reference resources and services in university libraries in Benue State include: poor Internet connectivity, inadequate/irregular power supply, lack of awareness about the digital library, poor user interface of the system, unsuitable search engine, out-of-date important materials, inadequate reference librarians, unavailability of a useful interactive chat box stream, librarians poor attitudes towards digital reference services, lack of professional skills and lack of professionalism of reference librarians. This study aims at filling this gap by examining provision of digital reference services in selected Nigerian state university libraries.

#### **4 Methodology**

A survey research method was adopted for the study. The population of the study consisted of 45 professional librarians from three public university libraries. The librarians are Delta State University Library, Abraka (18); Niger Delta University Library, Amasoma (10); and River State University of Technology, Port Harcourt (17). These three state universities were purposely selected based on their active involvement in digital reference services more than other libraries in the area. Only professional librarians in the three universities were used for the study. However, due to the fact that the whole population was small, the entire population formed the sample size and was used for the study. The sample size therefore was 45. A structured questionnaire was used as the research instrument to gather data for the study. The items were structured on a 4 point Likert scale (Strongly Agree, Agree, Disagree and Strongly Disagree). The questionnaire was validated by two lecturers in the Department of Library and Information Science in Delta State University, Abraka, because this happen to be their area of specialisation. Data were analysed using descriptive statistics.

#### **5 Data Presentation and Analysis**

The results of the analysis and interpretation of the results are stated below.

**Research Question 1:** What type of reference services are offered by the university libraries

Table 1: type of digital reference services offered by the university libraries

Sample size for the study =45

Services	SA A D SD				Mean ( $\bar{X}$ ) Score	Decision
	4	3	2	1		
Instruction	15	17	7	6	2.91	Accepted
Guidance	6	28	11	-	2.89	Accepted
Information	12	21	18	3	2.93	Accepted
Research assistance and Consultation	17	19	7	2	3.13	Accepted

Table 1 above shows the result of the type of digital reference services offered by the university libraries. Research assistance and consultation had the highest mean score which is 3.13 respectively. Information had 2.93, instruction 2.91 and guidance 2.89. All the items were identified as type of reference services offered by the university libraries.

**Research Question 2:** What are the various channels of digital reference services provision?

Table 2: Channels for Delivering Digital Reference Services

Sample size for the study =45

Channels	SA A D SD				Mean ( $\bar{X}$ ) Score	Decision
	4	3	2	1		
Live chat	17	15	8	5	2.98	Accepted
Telephone	20	16	4	5	3.04	Accepted
Email correspondence	12	17	13	3	2.84	Accepted
Text based chat	23	8	3	1	2.73	Accepted
Social media like Facebook/Twitter	28	10	5	2	3.42	Accepted

From Table 2 above it can be deduced that all the channels listed are used to deliver digital reference services as they all had mean score above 2.50 which was used as cut-off point. “Accepted” in the decision column means that all the channels were used to deliver digital reference services.

**Research Question 3:** What are the effects of digital reference services on university libraries?

Table 3: Effects of Digital References on University Libraries

Sample size for the study =45

Effects	SA	A	D	SD	Mean ( $\bar{X}$ ) Score	Decision
	4	3	2	1		
Increases the speed of service to users.	18	16	4	7	3.0	Accepted
Increases patrons' interaction.	8	23	2	12	2.6	Accepted
Increases accessibility of information to users.	15	19	3	8	2.9	Accepted

Table 3 shows the mean scores of effects of digital reference services on libraries. It could be seen that “Increases the speed of service to users” had a mean score of 3.0, “Increases patrons’ interaction” scored 2.9 while the score for “Increases accessibility of information services” was 2.6. All the items listed were accepted as effects of digital reference services on libraries.

**Research question 4:** What are the reference questions asked by library clientele?

Table 4: Types of Reference Questions Asked by Patrons

Sample size for the study =45

Questions	SA	A	D	SD	Mean ( $\bar{X}$ ) Score	Decision
	4	3	2	1		
Directional questions	21	16	2	6	3.16	Accepted
Facts finding	17	12	3	13	2.73	Accepted
Research questions	16	19	7	3	3.07	Accepted



Personal related questions	14 21 2 8	2.91	Accepted
Procedural questions	12 25 7 1	3.07	Accepted
Subject- based research questions	15 17 7 6	2.91	Accepted

In Table 4, directional questions had the mean score of 3.16, followed by research questions and procedural questions which had the mean score of 3.07 each. Others are subject base research questions (2.98), personal related questions (2.91) and fact finding questions (2.73).

**Research Question: 5** What are the challenges in the provision of digital reference services in university libraries?

Table 5: Challenges in the provision of digital reference services in university libraries?

Sample Size for the study =45

Challenges	SA A D SD	Mean ( $\bar{X}$ ) Score	Decision
Slow Internet connection	12 17 13 3	2.84	Accepted
Insufficient support for reference Librarians	10 28 2 5	2.96	Accepted
Difficulties in downloading Articles	19 16 3 7	3.04	Accepted
Low bandwidth in remote areas	16 20 5 4	3.07	Accepted

Table 5 shows the challenges the librarians face in the provision of digital reference services. Slow Internet connection had the highest mean score of 3.07, followed by difficulties in downloading articles at 3.04, insufficient support for reference librarians at 2.95 and low bandwidth in remote areas at 2.84. All the 4 items had mean scores above 2.50 which was used as cut-off point and were accepted as challenges in the provision of digital reference services.

## 6 Findings and Discussions

The study exposed the different types of digital reference services offered in the university libraries studied. The services are instruction, guidance, information, research assistance and consultation. The study also revealed that social media like Facebook, Twitter, text-based chats, e-mail

correspondence, live chats and telephone are all channels through which digital reference services are delivered in university libraries. The study showed that digital reference services increase patrons' interaction, speed of service delivery to users and accessibility of information services. The types of reference questions asked by the library patrons include directional questions, research questions, procedural questions, subject-based research questions, personal -related questions and fact-finding questions in that order. The challenges the libraries faced in the provision of digital reference services were low bandwidth in remote areas, difficulty in downloading articles, slow Internet connections and insufficient support for reference librarians.

The findings of the study brought to light the types of digital reference services offered in the university libraries which are instruction, guidance, information and research assistance and consultation. In this regard, the study corroborates the findings of Smith (2010) who identified diverse kinds of reference service such as prepared readers' review service, research consulting, bibliographic authentication and interlibrary loan. Smith (2010) remarked that the reference librarian may do all of these jobs or he may concentrate in any particular aspect such as readers' advisory service. This study is in line with the study of Cassell and Hiremath (2009) who categorised reference service into three types namely: ready reference, research and bibliographic confirmation. The study is also in agreement with the study of Adamou and Ntoka (2017) which say that the reference librarian assesses a student's information needs and provides him with management tools that can be consulted to find suitable sources of information on the student's research topic, keeping in view the student's understanding of library use and look for strategies.

Findings from the study revealed that social media like Facebook, Twitter, text based chats, e-mail correspondence, live chats and telephone are all channels through which digital reference services are delivered in university libraries. The findings are in agreement with those of Tutu (2016) who found that the most accepted digital channel used by respondents for digital reference services in university libraries is Twitter. The study also concurs with the study of Maceviciute (2014) who argued that the channels used to provide digital references have enabled the libraries to provide information services to different groups of users such as shy users, those with awkward questions, those living far away from the library and people with hearing or speaking impairments. Some of these channels have enabled the library to present its information services in real-time but remotely.

Furthermore, the findings of the study also revealed the effects of digital reference services on university libraries. It increases users' communication, increases the pace of services to customers and improves accessibility of information services. This is in consonance with the findings of

Thorpe (2017) that digital reference services have positively affected libraries because users and library staff can communicate in real time. As a matter of fact, information can be downloaded and sent to a user instantly. Digital reference services enable the library to overcome time, physical, geographical, human, and political barriers in the provision of information services. The findings also corroborate those of Uutoni (2014) that adoption of digital reference services by academic libraries is on the increase. Libraries are exploring new ways of increasing their services by interacting with clients and providing answers to patrons' inquiries via the Internet, particularly students enrolled on the remote mode of studying, like those of the National Open University of Nigeria (NOUN).

The study also identifies the types of reference questions asked by the library patrons which are directional questions, research questions, procedural questions, subject-based research questions, personal related questions and fact findings. The findings are in tandem with the study of Feldman (2018) who found out that users would often request for an item, such as an article or a specific book. Students asked librarians to do searches on their behalf and e-mail to them the documents they were looking for, or requested the librarians to download articles for them. They also asked whether the library subscribed to a particular journal; asked questions about log in details and passwords; asked for step by step guide on how to access databases and e-materials; asked questions on how to look for and use particular databases, and how to get full text articles; sought book renewal information; and asked for clarification on account issues such as library dues or fines.

Finally, the study also shows challenges faced in the provision of digital reference services. Low bandwidth in remote areas, difficulties in downloading articles, slow Internet connectivity and insufficient support for reference librarians were all accepted by the respondents as difficulties associated with digital reference services. The finding negates the findings of Tofi, Agada and Okafor (2020) who reported that the main challenges library face in providing digital reference services are inadequate/irregular power supply, lack of awareness about the digital library, poor user interface of the system, inappropriate search engine, outdated relevant resources, inadequate reference librarians, unavailability of a functional interactive chat box stream, librarians poor attitudes towards digital reference services, lack of professional skills and lack of professionalism of reference librarians.

## **7 Conclusion**

Digital reference services provided by university libraries cannot be ignored because digital reference is already an established technique of delivering reference services in this new

millennium. Many libraries across the globe are engaged in digital reference services to cope with the information needs of their users because libraries in the 21<sup>st</sup> Century are going digital in all spheres. The study, therefore, concludes that since digital reference services had affirmative impact on information services delivery in terms of speed, interaction, and overcoming time, physical, geographical, human, and political barriers in the provision of information services, librarians need to do what it takes to ensure sustainability.

## 8 Recommendations

The author makes the following recommendations:

1. Effort should be made by library management and parent institutions to provide adequate bandwidth especially in remote areas where Internet connectivity is poor, so that library patrons can benefit maximally from digital reference services provided by the library.
2. Adequate ICT infrastructure and good network connection should be provided 24 hours (24/7) for easy downloading of articles and other information materials by users.
3. Library management and all professional librarians in the library should be a source of encouragement to the reference librarian by supporting and counselling him or her to see that adequate digital reference services are provided.

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