

# Use of Digital Reference Services in Selected Academic Libraries in Zambia

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## ABSTRACT

*Modern Information and Communication Technologies (ICTs) especially web technologies are transforming the way libraries provide information to their users. Digital reference is one such service that is trending in most academic libraries worldwide. However, there is a significant lack of scholarly research focusing on digital reference service in academic libraries in developing countries, let alone Zambia. This paper, therefore, discusses the use of digital reference services in academic libraries in Zambia. It specifically investigated the status of digital reference services in academic libraries; types of digital reference services; and challenges of using digital reference services. The study used both quantitative and qualitative research method designs. Forty (40) Librarians in different institutions across the country were conveniently sampled and a structured questionnaire was used to collect data. The findings suggest that the full potential of digital reference has not yet been maximized in most academic libraries in Zambia. The study recommends that academic libraries should fully adopt the use of digital reference services considering the advances in ICTs. There is also need for a study that looks into students' attitudes towards digital reference services in academic libraries in Zambia.*

**Keywords:** Digital reference; Virtual reference; Reference services; Libraries, Zambia.

## **1. INTRODUCTION**

Advances in information and communication technologies (ICTs) especially the introduction of the internet and its associated web technologies have had a huge impact in influencing the way libraries provide information services to users and the way patrons access information (Gobinda & Simone, 2004). Rubia, Arif, Sidra & Haroon (2016). Additionally, information technology has brought about a paradigm shift in the provision of library services. While a number of companies offer services online, libraries being social institutions, have also introduced web based reference and information services called digital reference services (DRS). RUSA (2004) defines DRS as reference service initiated electronically for which patrons employ technology to communicate with public services staff without being physically present. The emergency of DRS has been the most significant development in reference services these past several years as it enables patrons employ computers or other internet technology to communicate with reference staff remotely.

Furthermore, according to Chandwani (2010), digital reference service is a natural solution which is supposed to be an advancement of the traditional reference service. In the process of providing digital reference service the reference librarian receives questions via a web interface, identifies the query and then decides appropriate course of action. He analyses the request and gets the type of information required. This service can be argued to be vital in academic libraries where research information needs tend to be very high. As asserted by Rubia, Arif, Sidra & Haroon (2016), academic libraries are more cognizant about their services, and reference services are considered as the primary purpose of a library that serves a research community. This entails that digital reference is a vital service for reaching out to users who are largely found online.

The majority of today's academic library clients are characterized as technology savvy and expect nomadic, anytime and anywhere communication (Becker, 2009). Buzzetto-More (2012) adds that today's learners have had their world defined by computer and internet technologies. In this respect, Ramos and Abrigo (2012) indicate that the provision of DRS in academic libraries is a response of Librarians to the ever growing information needs and changing information seeking patterns and behaviour of the clients. Library clients may prefer to access the library via the internet and seek the help of a reference Librarian in a digital environment. Reasons for this preference as shown by Uutoni (2018) are that

electronic resources are faster, time-saving and more convenient for the librarians and library users. This indicates that DRS is a convenient way of communication and service delivery for both librarians and users.

### **1.2 Statement of the Problem**

The emergence of modern ICTs has transformed how services are being offered in libraries. These ICTs have removed the barriers of time and space in the provision of library and information services. Reference service for instance has tremendously revolutionized as a number of libraries in the world are now offering DRS. However, there is lack of evidence on the extent to which academic libraries in Zambia have adopted and implemented DRS. Due to this gap in knowledge, very little is known about the extent to which Zambian academic libraries are using or intend to use digital reference and the challenges they face in the use of this service. This research therefore sought to bridge the above knowledge gap.

### **1.3 Significance of the Study**

This study is significant from different fronts, firstly the degree to which Zambian academic libraries have implemented the use of digital technologies in reference services delivery remains unclear, hence the need for the current study. Secondly, the findings of this study have the potential to influence decision making and policy direction. Lastly, the study contributes to knowledge creation and research about reference services and particularly references in the digital era.

### **1.4 Research Objectives**

The purpose of this study was to investigate the use of digital reference services in academic libraries in Zambia. In this regard, the study sought to:

- i. establish the current status of digital reference services in academic libraries in Zambia,
- ii. determine types of digital reference services being used in academic libraries in Zambia,
- iii. establish the challenges of implementing and managing digital reference services in academic libraries in Zambia.

## **2. LITERATURE REVIEW**

### **2.1 Modes of Digital Reference Services**

Digital reference services can take many forms, but they can be divided into asynchronous and synchronous transactions. The term asynchronous is where there is a time delay between the question being posed and the answer being given. Uutoni, (2018) adds that an asynchronous digital reference service is characterised by communication in one direction at a time. Asynchronous transactions generally take the form of email, web forms, and Ask a Service. Synchronous transactions take place in real-time with an almost immediate response to a query or a request. Synchronous transactions generally take the form of chat reference, video-conferencing or web-camera services, digital reference robots, collaborative digital reference services, etc (Uutoni, 2018).

### **2.2 Use of DRS in Academic Libraries**

A number of studies have been done on the use of DRS in academic libraries. A study done by Chowdhury (2013) on Digital reference services in Scottish libraries revealed that libraries answer queries by e-mail or telephone, suggest useful material and instruct the patron on how to obtain further information by using appropriate links or suggesting items available from the library. Another research by Uutoni (2018) entitled providing Digital Reference Services in Namibian showed that at the time of the study, the University of Namibia (UNAM) library was providing the following digital reference services: e-mail services, online library feedback forms, chat box and Book a librarian service. Singh (2012) in a study entitled Digital Reference Service in the Northern India university libraries revealed that all the four selected University libraries were providing some form of digital Reference service such as E-mail reference service, Ask a librarian, Question Point, Online chat, FAQ, Web based user education, User feedback service through e-mail, etc. These studies show that the concept of digital reference services in academic libraries is not new.

### **2.3 Considerations in DRS Implementation and Management**

#### **2.3.1 Staffing and Training**

Uutoni (2018) argues that staffing is an important factor in DRS because as the introduction of new services such as digital reference services require additional staff. New staff members could be employed or existing library staff members could be asked to take on the additional responsibility. The key is that for DRS to be delivered successfully, it must be delivered by knowledgeable and well trained staff. Kalra, (2011) indicates that trained manpower is the

most crucial resource to act as a catalyst for knowledge discovery and management from diverse sources. Uutoni (2018) supports the idea by stating that training is important because digital reference services are associated with innovative use of technology that calls for specific skills. Ibid further in the study on two Namibian Universities established that the two universities did not offer training in DRS. To that end, a recommendation was made, that librarians working with digital reference services need training on reference interview skills, chat techniques, providing logical solutions to library users, maintenance of digital reference services and FAQs.

### **2.3.2 Policy Issues**

Another factor to be considered is having a policy on DRS. A DRS policy serves as a blueprint for the operations regarding DRS in the library; it is through this policy that librarians carry out their tasks. Baro, Efe, and Oyeniran, (2014), in a study on reference inquiries received through different channels discovered that the challenges reference librarians face in university libraries in Nigeria was the absence of policy statements concerning virtual reference services as it was mentioned by 31 (86.1 per cent) of the 36 respondents. Consequently, the authors stated that for effective service delivery and continuity of the virtual reference services, policy statements are needed in the university libraries to serve as a guide. In a similar study, Uutoni (2018), in his study on two Namibian universities established that the major weakness of the two libraries was that they did not have a policy despite the importance it holds. Coffman, (2003) as cited in Uutoni (2018), adds that a policy is vital for libraries providing digital reference services because it guides the librarians on how to answer questions; how much time to spend on a question; how to handle questions that cannot be answered online; etc. From the above, it is clear that policies are important as they help to ensure consistency in procedures, and this is very vital in reference service.

### **2.3.3 Internet Connectivity**

The internet market in Africa is still developing and is better than it was a decade ago. Research shows that some academic libraries are still faced with poor internet connectivity, making it difficult for them to experiment with DRS. For instance, according to Baro, Efe, and Oyeniran (2014) in their study on Nigerian university libraries revealed that internet connectivity in university libraries at that time was not stable. A majority of the respondents mentioned slow internet connectivity, others mentioned complete lack of

internet connectivity as a challenge in the use of DRS. To that end, and they indicated that virtual reference services couldn't be effective without a stable and high-speed bandwidth.

#### **2.3.4 Cost Implications**

Another consideration is the cost involved in establishing and maintaining the service, which include software, hardware, technical support, and staff training. Pomerantz (2008) observed that DRS is highly resource-intensive, in terms of both Librarians' time and materials needed, and so it is essential to evaluate it in order to check how well the service meets the intended objectives and cost effectiveness. Younus (2011) points that costs of DRS include maintenance and upgrading of ICT infrastructure, software, staff training, marketing of the service, reference resources (both printed and electronic). Therefore, no academic library can successfully manage the DRS without the provision of adequate funds required for the acquisition of necessary resources.

### **3. METHODOLOGY**

This study was an important step in understanding the current status of DRS in Zambian academic libraries. The research was exploratory and quantitative research methods were used. Exploratory research is used when a topic of investigations has never been done before. Digital reference service has not been thoroughly investigated in the Zambian context hence use of exploratory research. Quantitative research methods involve investigating phenomena with the aid of statistical, mathematical, or computational techniques (Gray 2014). The research was conducted among Zambian academic libraries where 40 institutions were conveniently sampled and from each library at least one librarian was subsequently sampled thus giving a total of 40 Librarians sampled. The sampled Librarians were reached using either by email or physically. Primary data was collected by the use of a structured questionnaire; which had closed ended questions. The questionnaire was emailed and in some instances delivered physically to the respondents. The targeted respondents were reference librarians, however in instances where the library did not have one, the head librarian was targeted instead. Data were analysed using descriptive statics and Google spread sheets and charts were generated as such.

## **4. PRESENTATION OF FINDINGS AND DISCUSSION**

### **4.1 Background Information**

Out of the total number of 40 institutions that were sampled, 30 questionnaires were answered giving a response rate of a 75 percent. The study revealed that the institutions under investigation had staff ranging from diploma holders in LIS represented by 17 percent, Bachelor's degree with 63 percent, Masters in LIS with 17 percent, PhD with 3 percent. The users served in the libraries were students, academic staff, researchers and administrative staff.

While some libraries have designated reference staff, a good number of them do not have. Overall, from the entire population surveyed, only 23 percent had designated reference staff. This situation was also seen among those who were providing DRS because when asked to state who handled digital reference service, it was established that staff devoted to digital reference accounted for 42 percent, para-professionals accounted for another 42 percent, reference staff and highly skilled library staff with 33 percent each. Although a number of institutions do not have designated reference staff, it is interesting to note that they have staff devoted to handle reference services.

### **4.2 Status of Digital Reference Services**

The study revealed that all the sampled institutions (100%) had reference materials and the collection was composed of print resources with 97 percent while those who indicated having an electronic collection accounted for 43 percent. The fact that slightly above 40 percent has electronic collection is a good indication as a digital collection makes it easier to serve clients when physically unavailable. These findings are in line with Malik and Mahmood (2013), who in their research among university libraries in Punjab, Pakistan, established that the respondent libraries mentioned they owned some type of digital reference sources. Availability of these sources is a good sign for designing an effective DRS.

Respondents were asked a multiple response question to indicate the modes of reference service delivery in their institutions. It was established that face-to-face interaction accounted for 97percent, this was followed by digital reference with 40 percent, telephone and general correspondence with 15 percent each (shown in figure 1). These results entail that reference services are provided in all the sampled libraries and that DRS in Zambian academic libraries is still in infancy. The fact that DRS provision in Zambian academic libraries is still in infancy, was demonstrated by the fact that those who indicated that they were providing some

form of DRS were asked to state for how long they had been providing the service. 33 percent accounted for those who said they had been providing for less than six months, another 33 percent for those who indicated 6-12 months, 17 percent for those who said 1-2 years, more than 5 years accounted for 11 percent while 6 percent were missing. These results show that DRS is still in its early stages.

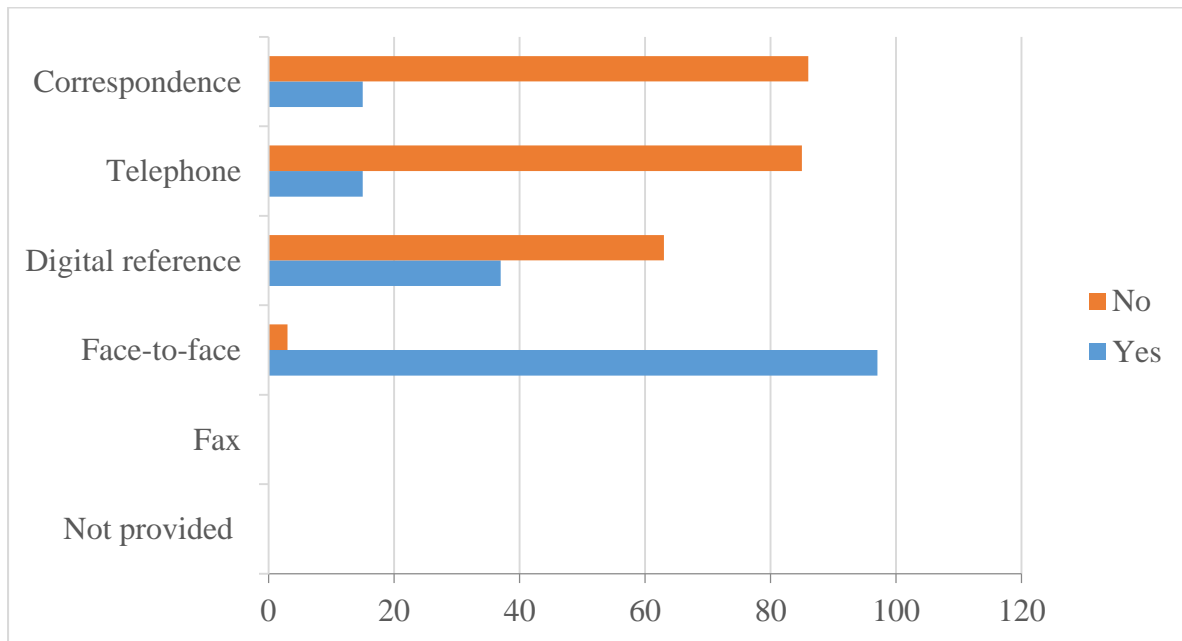


Figure 1: Modes of reference services provided

Pertaining to the mode of reference services provision, it was evident as shown in figure 1 that the culture of providing reference services face-to-face was the most predominant mode. These findings are similar to those of Malik and Mahmood (2013) who conducted a study to explore the position of DRS in libraries in Punjab. They concluded that very few libraries had DRS; most were providing face-to-face services. When asked whether plans were underway to introduce the service, the findings showed that 61 percent said yes, but were not sure when, 16 percent said yes-in more than one year, 11 percent said yes-in 6-12 months, and only 6 percent indicated that they did not have plans to introduce the service. These findings are promising because they suggest that librarians have positive plans towards the service.

#### 4.3 Types of Digital Reference Services being used in Academic Libraries

Respondents were further asked a multiple response question on the types of digital reference services they were using. It was established that E-mail & web forms accounted for 75 percent of those who said yes to using DRS, social media was 50 percent, instant messaging



for 17 percent, none of the institutions indicated that they were using video conferencing & collaborative digital reference or even frequently asked questions (shown in figure 2). These findings are similar to Singh (2012) in a study entitled Digital Reference Service in University libraries who also found that E-mail was one of the most used DRS among the investigated libraries. In the current study, it was found to be the second mode of reference service delivery which is in line with Khan, Khan, Malik and Idrees (2017), who established that exactly half of the responding Librarians declared that they preferably used known social media connections to request reading material for their users.

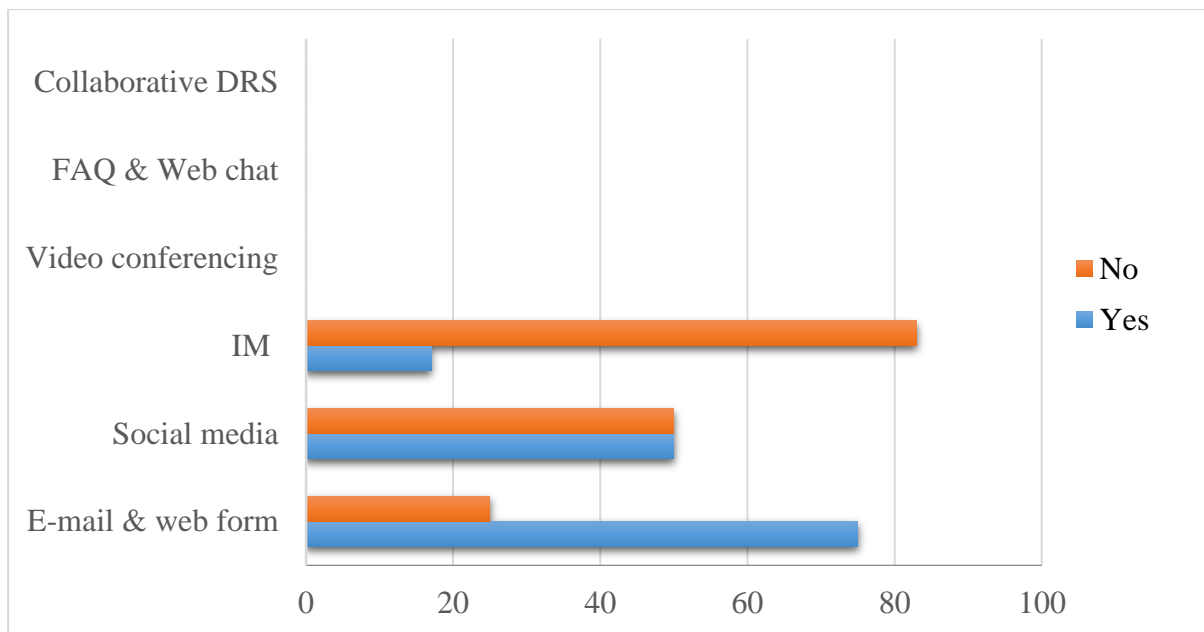


Figure 2: Types of digital reference services being used in academic libraries

The fact that none of the libraries are doing collaborative work in DRS indicates that there is still a gap that individual libraries have to fill. Research shows that in the absence of national policy or directive, libraries are likely to succeed if they join efforts (Kalra, 2011). RUSA (2004) adds that some of the benefits that can accrue from providing virtual reference services collaboratively with other libraries include: extended hours of operation, distribution of staffing of the service across multiple libraries, extension of the expertise available, or realization of cost savings associated with economies of scale.

Respondents who stated that they were using DRS were asked a multiple response question to state which types of reference services were attended to through digital reference. It was revealed that instruction scored 83 percent; reader's advisory with 79 percent, research

consulting with 86 percent, and Ready reference with 7 percent (shown in figure 3). These findings show that different types of traditional reference services are accessed using DRS.

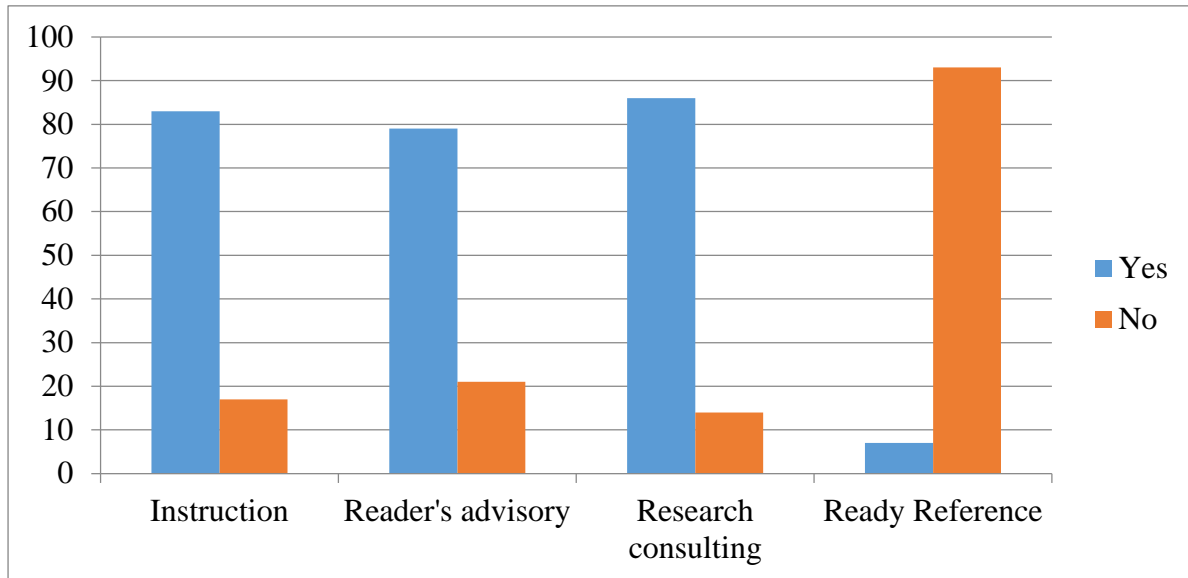


Figure 3: Types of reference services attended to through DRS

These findings are in line with the assertion made by Chandwani (2010), that digital reference service is a natural solution which is supposed to be an advancement of the traditional reference service. The study also established that ready reference was not very popular in these libraries. Bopp and Smith (2011) explain this low use of ready reference by stating that in the past, reference librarians did more ready reference simply because the sources required to answer such questions were in library collections and not in the hands of the users. With the development of the Web and search tools such as Yahoo! and Google, users have the tools to find this type of information on their own. As a result, there is less need to consult a Librarian for ready reference. Ready reference is more common in public libraries than in academic or special libraries.

Respondents were further asked to indicate the reference sources they consulted in order to answer users' queries presented through digital reference. It was revealed that own library catalogue accounted for 100 percent, print reference sources for 92 percent, in-house electronic resources with 75 percent, licenced or free based digital reference resources accounted for 67 percent, free web based resources with 58 percent, other libraries catalogues/resources with 10 percent. Respondents were also asked if their libraries had Web OPAC. The findings showed that 63 percent of the sampled institutions had while 30 percent did not have, the other 7 percent were missing values (shown in figure 4). The findings show

that most of the libraries that were using digital reference services consult their library catalogue in a quest to meet the users' needs. Furthermore, the fact that more than half of the respondents indicated that they had Web OPAC makes it easy for libraries to work concurrently with the users during DRS as the users are able to access the catalogue even without being physically present at the library.

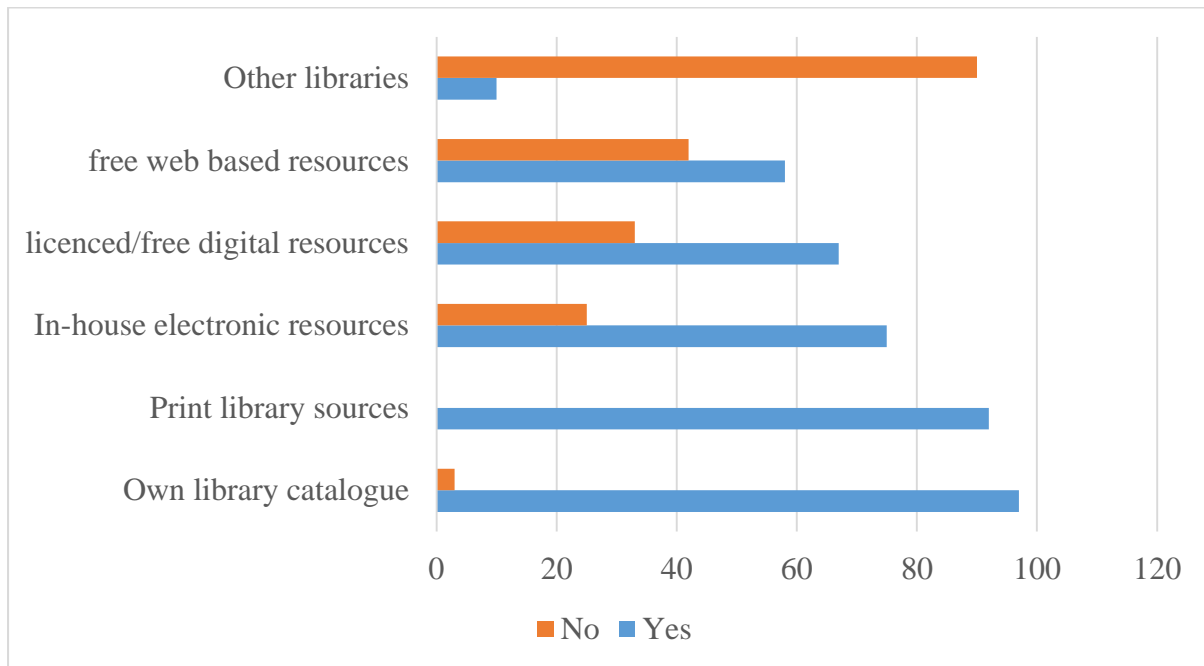


Figure 4: Resources consulted during DRS

Access to a library catalogue is a part of DRS, and a link to the catalogue is provided on the library website. Academic libraries can provide several interactive services, such as selection of books, loan status check, renewal of loans, reservation of books, request for interlibrary loan, etc through their Web OPACs (Younus, 2011). Very few respondent Librarians indicated that they were consulting with other libraries, which further indicated that there exists a gap yet to be filled in terms of collaborative consultation among libraries.

#### 4.5 Challenges/Barriers towards the Provision of DRS

In order to establish barriers towards the adoption of DRS, those who said that they were not providing DRS were asked a multiple response question to indicate why they had not started providing the aforementioned service. It was revealed that 67 percent felt that it was due to financial constraints, lack of skilled staff was 61 percent, no staff time to run new service comprised of 39 percent, no users demand accounted for 11 percent, and all the respondents had heard of DRS (figure 5).

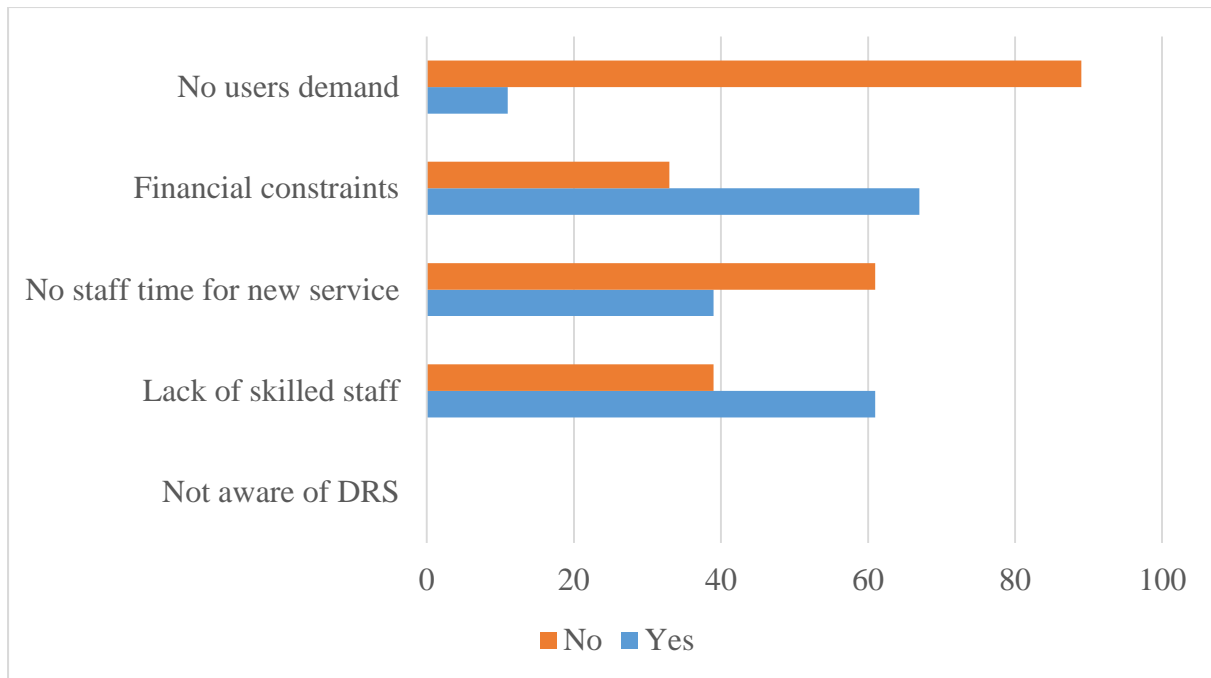


Figure 5: Reasons for not offering DRS

As evidenced from the findings, funding in a number of academic libraries in Zambia is still a major problem in the adoption and use of latest ICTs related services. These findings are in line with Pomerantz (2008), who argued that DRS is highly resource-intensive, in terms of both librarians' time and materials needed. Additionally, RUSA (2004), states in its recommendation for DRS that in order for a library to successfully implement DRS, it must provide budget specific allocation of funds to cover the personnel, hardware, software, connectivity, furnishings, training, publicity, and space to support this service. Therefore, some libraries as suggested by the findings are reluctant to experiment with DRS due to cost implications.

Another major issue that made them not to adopt the use of DRS in academic libraries was lack of skilled staff. In accordance with the IFLA and RUSA guidelines as cited in Uutoni (2018), it is urged that key skills a digital reference Librarian should have include multi-tasking, clear communication skills, especially in writing, database and online searching skills, interviewing skills to compensate for lack of visual and auditory cues and knowledge of references sources. Considering these requirements, most of those who were not using the service felt that they did not have what it takes to introduce the service. These findings are in line with Rubia et al (2017) in their study on Virtual Reference Services through Web Search Engines on Academic Libraries in Pakistan established that the majority of university

libraries did not have trained staff dedicated to providing virtual reference services in libraries in Pakistan.

The 40 percent that were using DRS were also asked if reference staff had received any formal training in ICTs and digital reference services. The findings suggest that only 33 percent had received in-house training sessions, 67 percent were learning through colleagues, 58 percent through self-teaching, 17 percent through software vendors, profession degree program with 83 percent. In spite of the importance of training in DRS, as evidenced by many scholars (Carlson, Nicol & Crook 2013; Duncan & Gerrard 2011), the current study established that tailor made training to handle DRS was lacking. This was demonstrated by the fact that software vendor and in-house training which are usually tailored towards specific library and user needs were not ranked highly. The current findings are in line with Uutoni (2018) in the study on two Namibian Universities, who established that the two universities did not offer training in DRS

Responded were further asked if their institutions had a policy regarding reference services. It was revealed that 33 percent had while 67 percent did not have. These finding are in line with Uutoni (2018), in his study on two Namibian universities. Khan et al (2017) in their study among 50 libraries in Pakistan also had similar findings. Another question was asked to establish if these libraries evaluated the digital reference services offered, it was revealed that 75 percent did not while 25 percent did. This is contrary to Uutoni (2018) who indicated that IFLA and RUSA guidelines suggest that digital reference service evaluation should be equivalent and part of a library's regular evaluation of all its reference services. In the absence of this evaluation, it would be difficult for libraries to improve the service as it is from the evaluation results that adjustment of staffing, levels of staffing, service parameters, training or other improvements are indicated.

In order to further understand barriers/challenges of using DRS in academic libraries, respondents were asked to indicate factors that affected implementation and management of digital reference services. Among the factors that respondents felt amounted to challenges/barriers to a major extent were financial constraints with 60 percent, lack of DRS policy with 37 percent, lack of evaluation of DRS with 30 percent, unavailability of suitable software for digital resources with 27 lack of ICT facilities with 27 percent, slow internet speed with 27 percent, lack of digital collection with 17 percent. Lack of staff interest was rated as not hindering implementation and management by 40 percent (Shown in figure 6)

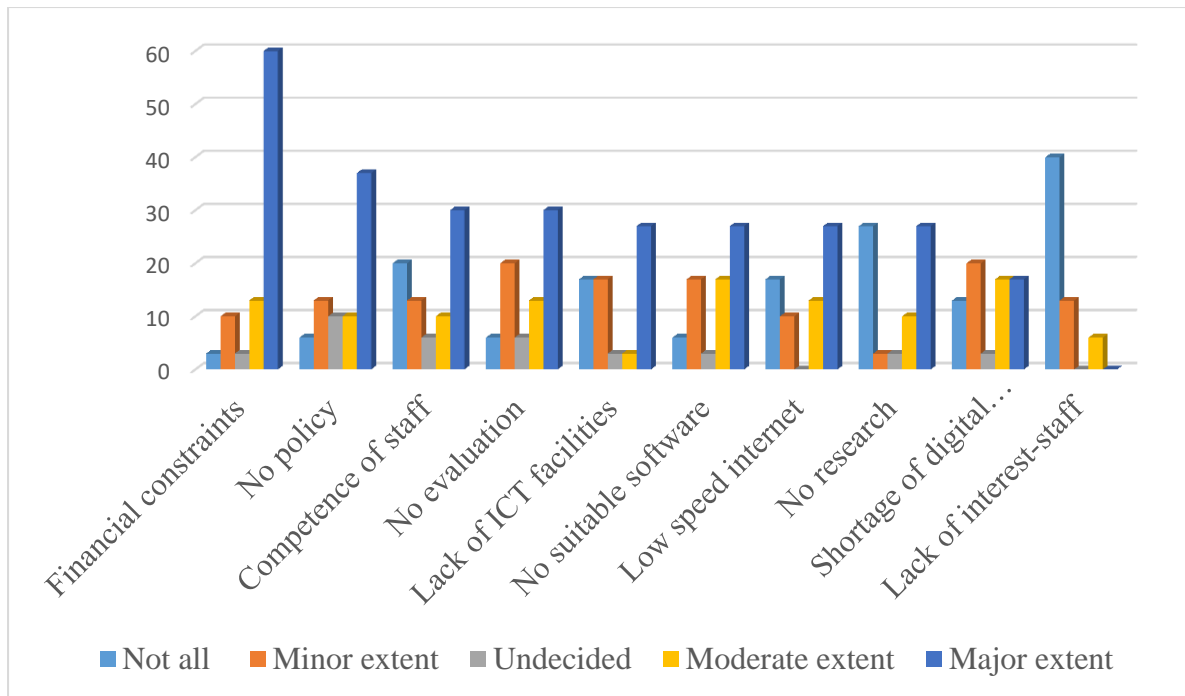


Figure 6: Issues affecting implementation and management of DRS

The major challenges were financial constraints, lack of DRS policy and staff competency. Many studies (Malik & Mahmood, 2013; Younus, 2014) have summarized the major challenges towards the adoption of DRS, which include lack of funds and lack of experienced staff and professionals.

## 5. CONCLUSION AND RECOMMENDATIONS

The current study presented the status of the provision of reference services through digital means and also explored the factors that affect the implementation of DRS. The results show that provision of DRS in Zambian university libraries is still in infancy stage, but Librarians seemed willing to accept the development. Currently, only 12 out of 30 university libraries have started offering reference services through digital means. However, most of them do not have a prescribed DRS policy to guide their actions. The study established that the most commonly used type of DRS is E-mail and that digital reference service is a natural solution which is an advancement of the traditional reference service. The main barriers against the adoption and implementation of DRS in academic libraries are financial limitations as well as Librarians' lack of training in the use of DRS. Based on the findings of the study, the following is recommended:

- i. All libraries in academic libraries should start offering the service DRS.

- ii. There is need academic libraries to collaborate in order to counteract some of the barriers against the use of DRS.
- iii. Libraries should have DRS written policies to guide their actions and to help with service evaluation and improvements.
- iv. Academic libraries should focus considerable efforts in training staff to handle DRS successfully.
- v. There is need for a study that looks into the attitude of academic library users towards DRS.

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