

# E-READINESS OF MZUZU UNIVERSITY LIBRARY WITH SPECIAL REFERENCE TO USE OF MOBILE PHONES IN THE PROVISION OF LIBRARY AND INFORMATION SERVICES TO OPEN AND DISTANCE LEARNING STUDENTS

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## Abstract

**Purpose** – *The purpose of this study was to determine the eReadiness status of Mzuzu University Library to provide library and information services to distance education learners through use of mobile phones.*

**Design/methodology/approach** – *The study used a case study design. A mixed-methods approach was used to collect data. Quantitative data was collected through self-administered questionnaires. Qualitative data, on the other hand, was collected through interviews conducted with the University Librarian and Director of ICT.*

**Findings and conclusions** – *The findings revealed that Mzuzu University Library has the necessary ICT infrastructure and human resources to support the provision of library services through use of mobile phones whilst the ICT policy is also being developed. Moreover, over 97% of the students have Internet-enabled mobile phones which they can use to access mobile library services that may be offered by the library. Furthermore, the library has e-resources that could be offered via the mobile platform whilst ODL students' and library staff's attitudes to the use of such services are positive. Cost of accessing mobile library services and poor mobile network pose as challenges to the success of the service. Furthermore, the library staff complement is inadequate to sustain the delivery of mobile library services. The staff also has skill gaps with regard to the delivery of mobile library services. Based on these findings, it was concluded that Mzuzu University Library is generally e-ready to provide library and information services through use of mobile phones.*

**Keywords:** Mzuzu University Library, ODL students, e-readiness, mobile phones, library services

## 1. Introduction

Mzuzu University launched diploma and degree programmes in open and distance learning (ODL) in Education in 2012. Currently, there are 1422 students enrolled from year 1-4 (Official enrolment statistics, February 2016). These students spend most of their time doing independent study at home, and only come to the university at designated times to do practicals (for Science students), attend orientation seminars to the modules they study, and also write examinations.

Studies conducted in various parts of the world (Chandhok and Babbar 2011; Mbambo-Thata 2010) show that academic libraries are making use of mobile phones to offer library and information services to their ODL students. The common mobile phone applications used for providing information services include the short message service (SMS), voice and video calling, web browser, and Quick Response (QR) codes (Baro et al. 2014; Mohamed 2014; Anbu and Mavuso 2012). These applications are used, among others, to offer reference services, user services (book reservations and renewals online) and information retrieval (Internet searches), etc. Preliminary investigations conducted by the researcher at Mzuzu University indicated that currently, the library does not offer mobile library services to ODL students. Use of mobile phones in the provision of library and information services to ODL students in a country like Malawi has the potential to enhance access to library resources beyond the normal opening hours hence assist overcome the obstacles of time and space (Malik and Mahmood 2013), and bring convenience to library users (Ballard and Blaine 2013). This study, therefore, investigates the eReadiness status of Mzuzu University Library to use mobile phones in the provision of library and information services to ODL students.

The outcome of the study would pave the way for policy, practical and managerial interventions in areas of infrastructure development, capacity building, awareness creation, institutional framework and budgetary allocation to prepare the ground for using mobile phones to provide library and information services to ODL students. The study will specifically address the following research questions: (1) What is the level of preparedness of Mzuzu University Library in terms of ICT infrastructure, policy framework and human capacity for the adoption and use of mobile phones in providing library and information services to ODL students? (2) What electronic information resources and services are currently available at Mzuzu University Library that can potentially be adopted and used through mobile phones? (3) What are the attitudes of library staff and ODL students towards the potential use of mobile phones in providing and accessing library and information services? (4) What sort of challenges might library staff and ODL students respectively face in providing and accessing library and information services?

## **2. Literature review**

Information and communications technology (ICT) infrastructure plays a critical role in determining the e-readiness status of a library to offer mobile library services. In this particular case, three main areas are crucial. These are the institutional readiness (service provider), national mobile telecommunication infrastructure (media through which services are provided) and readiness of the students (consumer).

Lessons drawn from institutions that have embarked on projects to provide mobile library services indicate that computer hardware, software, servers, including the campus local area network (LAN) facilitate the offering and access to mobile library services (Wang et al. 2012; Bridges et al. 2010). The national mobile telecommunication infrastructure is equally important as it acts as a media through which mobile library services provided by academic libraries are delivered to their clients. Likewise, clients use the same infrastructure to access services provided by academic libraries. Besides, students use mobile phones (smartphones and feature phones) to access services provided by academic libraries. A number of studies show that mobile phone ownership amongst students in various parts of the world is very high. For instance, a study conducted by Becker et al. (2013, 693) at Hunter College in New York (USA) indicated that 98.7% of the students owned mobile phones. Similarly, an ECAR (2014, 14) study found

out that 86% of the USA undergraduate students owned a smartphone. Palumbo (2014, 180) has also observed a marked increase in smartphone ownership in Africa. Since smartphones embrace computer-like functions such as having a QWERTY keyboard and are permanently connected to the Internet (Lippincott 2010, 207), it implies that students using them may be able to access most of the library user services such as accessing e-journals if they are offered on the mobile platform.

Studies focussing on mobile phone use in libraries are not lacking in the literature. Studies conducted by Bomhold (2014) in the USA, Wei et al (2015) in China and Anbu and Mavuso (2012) in Swaziland have all shown that academic libraries in various parts of the world are using mobile phones in the delivery of library services to their clients mainly using SMS, mobile Internet, multimedia service (MMS), etc. Most of the service offering has centred on information services such as notification of new acquisitions and overdue reminders; reference services; and user services such access to OPAC, e-journals, etc.

### **3. Methodology**

This research made use of a case-study design. It involved open and distance learning (ODL) students in years one and two, the University Librarian and Director of ICT. A mixed methods approach (quantitative and qualitative methods) was used to collect data. Quantitative data was collected through self-administered questionnaires from students. Qualitative data, on the other hand, was collected through interviews conducted with the University Librarian and Director of ICT. A total of 91 questionnaires were distributed, and 89 were returned representing a 97.8% response rate.

### **4. Data analysis and discussion**

Level of preparedness of Mzuzu university library in terms of ICT infrastructure, policy framework and human capacity for the adoption and use of mobile phones in providing library and information services to ODL students

#### **4.1 ICT Infrastructure**

Data collected from interviews conducted with the University Librarian and Director of ICT including that collected from questionnaires administered to students indicate that Mzuzu University has the requisite ICT infrastructure to support the provision and access to mobile library services. To begin with, the Director of ICT pointed out that the University was in the process of upgrading its Local Area Network (LAN) to ensure that it was more robust and also had broader coverage. Installation of the fibre-optic backbone had just been completed (the time the interview was being conducted), and installation of the wireless network was scheduled to be completed within two weeks. The Director of ICT further indicated that computers and servers were available. The University Librarian, on the other hand, indicated that the Library was destroyed by fire late last year. Much as the fire had destroyed most of the ICT equipment, some servers and computers had been rescued. This had helped to speed up the recovery effort. However, the University Librarian indicated that more tablet computers, laptop and desktop computers including servers with bigger capacity were required to ensure the smooth operation of the mobile library service.

The ICT Director and University Librarian also indicated that the campus had mobile telecommunications network coverage by the service providers. Nevertheless, the two differed in their assessment of the performance of the mobile network. Whilst the Director of ICT rated the mobile network performance to be satisfactory, the University Librarian was of the view that its performance was poor, describing mobile Internet, SMS and voice calls, all to be ineffective. The two officers, however, both agreed that mobile telecommunications services were very costly something that could negatively impact on mobile library services that may be offered through that platform.

A related study by Nyirenda (2012) indicated that Malawi had achieved a 99.55% land coverage of mobile cellular network. This signifies that most of the places where ODL students reside have mobile network coverage, making it possible for them to easily use their mobile phones to access library services if offered on the mobile platform. The only drawback, as noted in this study, could be network performance. The Malawi Communications Regulatory Authority (MACRA) quality of service report for the third quarter covering July to September 2014 indicted that challenges in relation to call setup success rate, call drop rate, General Packet Radio Service (GPRS) content activation success rate, etc. still remain (MACRA 2014). These challenges could negatively impact on the performance of mobile library services that may be introduced.

Results of the survey questionnaire further revealed that 97.8% of the students owned a mobile phone with 31% of the students owning two or more mobile phones. More importantly, 92.1% of the students owned a mobile phone with Internet capabilities. The high ownership rate of mobile phones, as shown in this study, reflects those made by Becker et al. (2013, 693) at Hunter College in New York (USA) who found out that 98.7% of the students owned mobile phones. Similarly, the high prevalence rate of Internet-enabled phones in this study points to the pervasiveness of smartphones among the ODL student population which is also a reflection of previous studies, particularly the ECAR (2014) study that had shown that smartphone ownership amongst USA undergraduate students had reached 86%. The implication of these findings is that most of the students are in a position to access most of the mobile library services that may be offered on that platform.

#### **4.2 Policy framework**

The Director of ICT pointed out that a draft University ICT Policy was in place, and that it was only awaiting ratification. He added to say that other external regulatory bodies such as MACRA did not have policies that could hamper mobile library services, if they were implemented, but have always been supportive of the initiatives which the ICT Directorate has been undertaking. The University Librarian confirmed the existence of the draft ICT policy, and added that the institutional repository policy was also available but was only awaiting implementation. Progress made towards the institution of the ICT policy is commendable because it implies that such a document could be used to regulate the operations of mobile library services that may be introduced to ensure that such services run smoothly.

#### **4.3 Human capacity**

With regard to human resources, the Director of ICT stated that the ICT Directorate had a staff complement of eight (8) people (Administrative and technical). He indicated that the staff complement is not adequate but was quick to say that this has not adversely affected its operations because the staff is able to move across hence, able to serve all departments. The

University Librarian, on the other hand, stated that the library was adequately staffed. However, he indicated that staff need further training to equip them with practical knowledge and skills to properly manage mobile library services that may be introduced as they represent a whole new dimension in library service delivery to many of them.

Based on these findings, it can, therefore, be concluded that both the Library and ICT Directorate have the necessary human resources to manage mobile library services. More training programmes, will still be necessary to ensure that the staff deliver in the new service environment.

#### **4.4 Electronic information resources and services available at Mzuzu University Library that can potentially be adopted and used through mobile phones**

The University Librarian indicated that the library has a huge wealth of electronic information resources. These include the Online Public Access Catalogue (OPAC), institutional repository content, e-journals, e-books, etc. He also indicated that plans were in place to acquire an e-granary in the near future. A number of case studies based on the implementation of mobile library services conducted at Oregon State University, University of South Africa and Indira Ghandi University have shown that these resources have been incorporated in the mobile library service platform of those institutions (Chandhok and Babbar 2011; Bridges et al. 2010; Mbambo-Thata 2010). This signifies that these resources could equally be incorporated into the mobile library service platform if users wished to access them through use of their mobile phones.

The University librarian further indicated that the library owned the OPAC database and the institutional repository. Some open access e-journals, e-books and web content are also freely available over the Internet. This signifies that the long-term availability of such resources to clients is assured. However, some of the e-journal databases are available through subscription. Nevertheless, prospects for subscription in the short to medium-term are good. This implies that prospects of having such resources on the mobile library platform are equally good.

The University Librarian also mentioned that currently, most of the e-resources are not widely used. He attributed this problem to the network challenges that the University had been facing. However, he expressed hope that usage would go up with the improvement of the network infrastructure on the campus. Greater usage of e-resources by library clients increases the likelihood that such resources may also be accessed through the mobile platform if they were made accessible on that platform.

#### **4.5 Attitudes of library staff and ODL students towards the potential use of mobile phones in providing and accessing library and information services**

Findings from the study indicates that both students and library staff have positive attitudes towards the use of mobile phones either in the provision or access to library services. When asked to say whether the use of mobile phones is good for offering library and information services, cumulatively, 81.4% of the students answered in the affirmative (40.7% indicated that they agree and 40.7% stated that they strongly agree). More importantly, the study found out that 41.4% of the students have already used their mobile phone to call, email or text the library to seek help or access any reference service much as the library has not formalised the use of mobile phones to access its services. Whilst 18.4% of these students have done so frequently, 23% have done that rarely. It is, therefore, not surprising that 93.4% of the students have called for the formalisation of the provision of library services through use of mobile phones. Some of the

services which students are keen to access on the mobile platform are OPAC (81.7%), reference services (60.9%), e-books (58.5%), e-journals (57.3%), information services such as notification of recent acquisitions, news, etc.(54.9%), lending services (53.7%), reservation of short loan items (52.4%) and user awareness or information literacy offerings (51.3%). Conversely, very few students (41.5%) were keen to see inter-library loans service on the mobile platform.

These findings relate to previous studies about students' attitudes towards the use of mobile phones in accessing library services. For instance, a study conducted by Kumar (2014, 5) at Jawaharlal Nehru University (JNU) in India revealed that 89.44% of the respondents did not have problems if the library reached out to them through mobile phones. Other services which the respondents wanted to access through use of mobile phones include library catalogue (76.84%), book reservations (74.74%), programmes, events, new additions and library news (72.63%), reminders (66.32%), downloadable e-books and e-journal articles (68.42%), and booking library training sessions (64.21%).

The University Librarian stated that most of the library staff were equally enthusiastic about the use of mobile phones to offer library services. Nevertheless, he indicated that others were discouraged by problems with the University Wi-Fi system. Nevertheless, he expressed hope that this would likely change now that such a challenge was being addressed.

#### **4.6 Challenges that library staff and ODL students might face in providing and accessing library and information services**

The study revealed that both the library and students would likely face a number of challenges in using mobile phones to provide and access library services. The University Librarian mentioned lack of adequate skills by library staff to run the service, high cost of access to the service by students, and shortage of staff to operate the service as foreseeable key challenges. Library service offering remains unchanged but offering of such services on the mobile platform is a bit of a new experience to many library staff and hence the University Librarian indicated that staff need to be trained to prepare them for the new challenge. The cost of accessing Internet, voice calls and SMS are very high in Malawi (Mtingwi and Van Belle 2012). The University Librarian was, therefore, of the view that this could negatively impact on usage of the services the library could offer on the mobile platform. Although the University Librarian indicated that the library staff complement is good, he expressed the view that mobile library services would result in 24 hour access to library services. To cope with this, the library may have to hire more staff to keep these services running as it may be required.

Two main challenges came up in the responses that were given by the students. These are high service costs (78.5%) and poor network quality (77.2%). The issue of high service costs is of great concern as it has the potential of negatively impacting on the usage of mobile library services that may be introduced. Both the University Librarian and the Director of ICT had identified this a key threat to the success of the mobile library service. Consequently, each one of them had made suggestions of how they intended to mitigate the impact of this problem if mobile library services were introduced. The University Librarian indicated that the library planned to preload information in tablet computers they intend to acquire to ensure that students do not spend much on Internet data charges. However, ODL students may only use these gadgets whenever they come to campus during study periods or during exams as most of them stay away from campus. The Director of ICT's intervention to high service charges is to deploy a number of Wi-Fi hot spots on campus to enable students connect to the campus network. Again ODL

students may not benefit much from this as they spend much of their time away from campus. As both of these interventions might have limited impact on ODL students, possibly a viable course of action would be to lobby for the lowering of service charges with the mobile phone operators. Lower service charges could boost usage of mobile phone services and mobile library services that may be introduced by the library.

## 5. Conclusions and recommendations

The paper concludes that Mzuzu University Library is generally e-ready to provide library and information services through use of mobile phones. This conclusion is made based on the finding that the ICT infrastructure, human resource and policy framework are all available. Library staff's and students' attitudes towards offering and access to mobile library services respectively are also positive whilst the library has e-resources that could be offered on the mobile platform. Inadequacy of library staff to offer the service, high cost of Internet for accessing mobile library services that may be introduced, and poor mobile network are some of the challenges that may hamper the delivery of mobile library service to ODL students.

Based on these findings, the following recommendations are proffered: (1) The library needs to employ more staff and orient them on how to operate mobile library services (2) Mobile telecommunications operators need to be implored to improve their service offering, and make their services affordable to ensure that ODL students easily access library services offered by the library (3) The ICT Directorate should speed up the implementation of the ICT policy to facilitate the operations of mobile library services.

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