AN INVESTIGATION INTO THE USE OF SMARTPHONES IN ACCESSING ELECTRONIC RESOURCES AT THE UNIVERSITY OF NAMIBIA

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF LIBRARY AND INFORMATION SCIENCE

AT

THE UNIVERSITY OF NAMIBIA

BY

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SEPTEMBER 2021

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ABSTRACT

This thesis is based on the use of smartphones in accessing electronic resources (e-resources) at the University of Namibia (UNAM). The main objective of this study was to investigate the use of smartphones in accessing library electronic resources at UNAM. The study was informed by the Technology Acceptance Model (TAM), Convenience Concept Model (CCM) and Connectivity Theory (CT). In line with the pragmatic research paradigm, the research design was a case study and a survey was in this case one of the data collection methods in this mixed methods research approach. The population for this study consisted of UNAM librarians and undergraduate students. The sample for this study comprised of three hundred and seventy-two (372) students. To ensure representation at all levels of undergraduate students, the researcher used the proportionate stratification sample method to determine sample sizes of each stratum which resulted to 125 first years, 105 second years, 76 third years and 66 fourth years. Students were selected by means of systematic sampling method. Four (4) librarians were purposively selected as the researcher targeted librarians who had a better understanding of the topic under study. In-depth interviews were conducted with librarians and questionnaires were administered to students. Content analysis method was used to analyse qualitative data and IBM SPSS was used to generate quantitative data through descriptive statistics. The study revealed that majority of students had smartphones. Students found smartphones convenient because of portability. Furthermore, the study showed that majority of students were aware of library e-resources, which they mostly got to know through their lecturers. The study further discovered that students had at some point accessed e-resources via their smartphones. However, low frequency of access was recorded. Factors that hinder the access and use of smartphones revealed in this study include: network problems, lack of training on how to access e-resources, small screen sizes of smartphones, no access to e-resources off-campus, difficulties in navigating web links through smartphones and a lack of searching skills. The study recommends UNAM Library to take a leaf from the UNAM ICT Policy which supports gadgets like smartphones, to be clear on using mobile library applications, create a mobile Library App for e-resources and introduce a core course on Information Literacy that will include training on how to access e-resources. The study proposes a study on off-campus access to e-resources as an area for further research.

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LIST OF ABBREVIATIONS AND ACRONYMS

APP	Application
CCM	Convenience Concept Model
CRAN	Communication Regulatory Authority
CT	Connectivity Theory
E-Resources	Electronic Resources
HPP	Harambee Prosperity Plan
HPPI	Harambee Prosperity Plan Phase 1
HPPII	Harambee Prosperity Plan Phase 2
ICT	Information and Communication Technology
IG	Internet Governance
IMLS	Institute of Museum and Library Services
IT	Information Technology
LITC	Library Information and Technology Committee
LSP	Library Services Policy
MoBC	Ministry of basic Education
MoEAC	Ministry of Education, Arts and Culture
MTC	Mobile Telecommunication Company
MTN	Mobile Telephone Network

NDP	National Development Plan
NPC	National Planning Commission
NamIGF	Namibia Internet Government Forum
NIED	National Institute for Educational Development
NPTH	Namibia Post & Telecommunications Holdings
OPAC	Online Public Access Catalogue
PEoU	Perceived Ease of Use
PU	Perceived Usefulness
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TRA	Technology Reasoned Action
UNAM	University of Namibia

ACKNOWLEDGEMENTS

Firstly, I would like to thank God for granting me an opportunity, good health, and time to further my studies. Secondly, my appreciation and gratitude go to my supervisor Prof. Cathrine Nengomasha for her guidance throughout my studies. Thank you for your continuous and valuable input. Let me also acknowledge my friends; Foibe Shaambeni, Jesaya Nakashwa, Frieda Lukileni, Niilonga Shetunyenga and Wilka Uukongo for their endless encouragements and support. A special thanks goes to Prof. Kingo Mchombu and Jacobina Mwiiyale for their assistance during my research journey. Finally, I would like to recognise UNAM for granting me permission to conduct this study, all individual respondents and everyone who believed in me.

DEDICATIONS

This thesis is dedicated to my late parents, Asteria Jacob and Matheus Andreas, as well as my late grandmother Daria Julius for setting a strong learning foundation. This thesis is further dedicated to my uncle, Dominicus Shivute for his continuous encouragements and support, and to my siblings, Simon and Andreas Matheus, Iyaloo Shilongo as well as Filippine Junias for believing in me.

DECLARATION

I, Elizabeth Matheus, declare hereby that this study is a true reflection of my own research, and that this work, or part thereof, has not been submitted for a degree in any other institution of higher education.

September 2021

Student's Signature Date

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter introduces the research area, therefore covers the background of the study, and the context of the study; that specifically looked at the implementation and acceleration of Information Communication and Technology (ICT) in Namibia. The chapter further looks at the statement of the problem, objectives of the study, significance of the study, limitation of the study, and delimitation of the study. Finally, the chapter briefly looked at the research methodology, and concludes with the chapter summary.

1.2 Background of the study

The use of smartphones technology has increased worldwide and with an increased number of new trading devices every year. Smartphones are mobile phones with computers and internet search abilities, which only differ from computers by sizes and mobility (Anh, 2016). In the 21st century, smartphones play major roles in academic environments. Due to accessibility of these devices by students for different purposes, there is a need to explore and investigate how they can be utilised in accessing library electronic resources. Iwhiwhu, Ruteyan and Eghwubare (2010) argue that few efforts are geared towards exploring ways that cellphones technology could be used to enhance the library operations. With the paradigm shift from physical libraries to virtual libraries, electronic resources (e-resources) are still underutilised (Gakibayo, Ikoja-Odongo & Okello-Obura, 2013; Madondo, Sithole & Chisita, 2017), and the University of Namibia (UNAM) is no exemption of this.

UNAM library subscribes to a number of electronic resources which include e-journals and databases, aggregators, e-books, and reference sources in support of the University curricula, teaching, learning, and research initiatives at the University.

A study by Ndinoshiho (2010) found that the vast majority of students use internet and e-mail; but revealed that electronic databases were found to be substantially underutilised, although an increase in usage of e-resource packages from 118 990 in 2016 to 188197 full text downloads in 2017 was noted in the 2017 UNAM Library report (Ndinoshiho, 2017). Mobile library technology is important and in order for academic libraries to stay relevant in the mobile era, it could be essential for them to adopt mobile library technologies in order to maximise access to e-resources, stimulate library services and satisfy the users' necessities in a fast and smart manner (Madhusudhan & Dar, 2017).

They also emphasise the vital role mobile technologies play in assisting persons with special disabilities including visual and hearing in accessing information in libraries. Various users read books on mobile phones by making use of electronic book reader software (Pawar & Moghe, 2014). A study in Malysia by Dresselhaus and Shrode (2012) revealed that students need to access a variety of library resources available in the library via mobile devices. In the same study, many students indicated that they were very likely to use e-resources on smartphones than on iPads.

1.3 Context of the study

In order to understand the usefulness of the use of smartphones in accessing electronic resources, it is important to understand the context of ICT in Namibia. Therefore, this section elucidates the background of ICT in Namibia.

Since Namibia gained independence in 1990, the government has tried to accelerate ICT service delivery to the Namibian nation, through its line ministries (Ministry of Information and Broadcasting and later the Ministry of Information and Communication Technology), whereby telecommunication services were provided by the Namibia Post and Telecommunications Holdings Limited (NPTH), the then parent company of Mobile Telecommunication Company (MTC) and Telecom Namibia.

It is therefore after that, the Communication Regulatory Authority (CRAN) was born to regulate the communication industry, allowing external players (Paratus Telekom, Mobile Telephone Network (MTN), and Huawei Technologies) to penetrate the market. Continuing, CRAN was established via the Communications Act, (Act 8 of 2009) as the converged regulator for ICT. It was establishment to facilitate foreign direct investment, promote entrepreneurship and local participation, ensuring a 51% Namibian ownership in investment opportunities and promotes fair competition among ICT players. In Namibia, a sound policy framework has been adopted to facilitate investment in the ICT sector which includes the following policies: ICT Overarching Policy, Communications Policy, IT Policy, Broadcasting Policy and Postal Policy.

1.3.1 ICT Policy for education

In 1995, the Ministry of Basic Education (MoBE), through the National Institute for Educational Development (NIED), developed a national policy for ICT in Education in Namibia (NIED, 1995).

The policy, which was revised in the year 2000, is a brief and detailed document that set out the objectives of developing an ICT Policy in Education and expounds on key issues regarding the strengthening and exploitation of ICT courses in Namibian schools. With the supporting policies like this, it will be easy to facilitate the use of smartphones in accessing e-resources.

1.3.2 Namibia Vision 2030

Vision 2030 is a long-term national development policy framework that was official launched in June 2004. This policy plans for Namibia to be a prosperous and industrialised nation by 2030, developed by her human resources, enjoying peace, harmony and political stability.

Vision 2030 articulates the relevance, responsibilities, and effectiveness of integrating ICT in education with a view to meeting the challenges of the 21st century and in order to prepare all Namibian learners, students, teachers, and today's communities for the world economy of tomorrow. Moreover, the Namibia's roadmap to industrialisation was tasked to the National Planning Commission (NPC) through the frameworks of National Development Plans (NDPs) to grant goals of Vision 2030. NDPs are five years plans, which started with NDP 1 that ran from 1995 to 2000 and will end with NDP 7. Currently, the country stands at the fifth NDP (NDP 5) which is a 2017/18-2021/22. On ICT, NDP 5 has a desired outcome of seeing Namibia with universal access to information, affordable communications and technology infrastructure and services. This is with upgraded ICT infrastructure across the country, expanded modern broadcasting services to all communities and promoting e-services and innovation amongst others. The researcher is very keen in the e-services, taking into consideration the access and utilisation of library e-resources using smartphone.

1.3.3 Harambee Prosperity Plan (HPPIand HPPII)

HPPI was a targeted plan by the current Namibian President, His Excellency, Dr. Hage Geingob. This was the first phase that was launched in March 2015, a 2016/17-2019/2020 which was a Namibian Government's Action Plan towards prosperity for all. HPPI complemented the long-term goals of the NDPs and Vision 2030 as stipulated above. Furthermore, HPPI aimed to fast track development in areas where progress is insufficient and addresses challenges that have emerged after the formulation of NDPs. It comprised of five pillars, and the 4th pillar focuses on infrastructure development, which amongst others highlighted the modern ICT infrastructure to facilitate access to information. In March 2021, the President launched the second phase (HPPII) a 2021-2025 Action Plan of the Namibian Government towards economic recovery and inclusive growth.

This phase under the fourth pillar (Infrastructure development), aims to expand coverage for ICT. With the expansion of ICT, many students will have access to good network coverage, allowing them to utilise smartphones in accessing e-resources.

13.4 Namibia Internet Governance Forum

This is Namibia's multi-stakeholder forum. Abbreviated as NamIGF, was established in 2017, and it engages on issues related to Internet Governance (IG) on national level and how it intersects with IG development at continental and international level. NamIGF's objetives include but not limited to influencing the development and implementation of national policies related to internet, organise and host an annual multi-stakeholder and democratic platform for engagement and knowledge building on internet governance related issues in Namibia and beyond. NamIGF has a vital role to play in facilitating the recommendations of accelerating effective and affordable internet access in Namibia, as it governs access to internet in people's interests.

Given the background, effective internet access could ease the access of e-resources via smartphones.

1.3.5 Libraries for Development Project

This is a project that was launched by the Ministry of Education, Arts and Culture (MoEAC) in 2012 and ran until 2014 The project aimed at promoting knowledge based society and public use of ICT in libraries, by facilitating training workshops in ICT for librarians and community members in 22 community libraries countrywide. Students being part of most communities, this project had played a significant role in ensuring the smooth utilization of ICT which is inclusive of smartphones.When all is said and done, UNAM to date has introduced students to internet access, with computers in the library and most faculty laboratories, Wi-Fi access on-campus.

Furthermore, students are given 3Gs with limited data bundles to make use of e-resources off-campus, and also an ICT hub for students on campus to assist with ICT challenges. However, with all attempts to try to close the digital gap and assist with access to electronic resources, these resources are still underutilised. This could be associated with many challenges because students' population is high and cannot all be accommodated in the library and laboratories. This entails that digital divide and inequality remain one of the biggest challenges as some students do not have digital gadgets to use these resources. Even if they are to be provided with data bundles, network coverage does not reach all areas in Namibia, especially remote areas.

1.4 Statement of the problem

Smartphones have a potential to improve the use of e-resources (Iwhiwhu, Ruteyan & Eghwubare 2010; Madhusudhan & Dar, 2017).

A study on the perception of students on mobile technology based library services at the University of Cape Coast in Ghana, established that students found it easier to search and access information on smartphones anywhere, which saves time of moving from one location to another in search of learning materials (Ocran, 2017). However, libraries are yet to fully exploit their usefulness in enhancing access to e-resources which are underutilised (Bhat, 2009). Challenges of using smartphones to access e-resources have also been reported including poor internet connectivity and higher internet data cost (Sharma & Madhusudhan, 2017; Fasae & Idowu, 2015; Madhusudhan, 2016; Janti, 2016).

Ndinoshiho (2010) found high usage of internet and email facilities, but underutilisation of e-resources by University of Namibia students. A study in the Unites States of America by Dresselhaus and Shrode (2012) revealed students' openness to use smartphones to access e-resources. On the basis of this, and the strides taken in creating a conducive environment in Namibia to enhance the use of technologies, it was reasonable to assume that students could accept the use of smartphones in accessing e-resources.

This study which aimed at investigating the use of smartphones in accessing electronic resources by students at the University of Namibia, therefore investigated if students were accessing or open to accessing e-resources using smartphones in order to enhance access to e-resources.

1.5 Objectives of the study

The main objective of this study was to investigate the use of smartphones in accessing library electronic resources. Specifically, this study aimed to:

(a) Determine the students' views on accessing library e-resources using smartphones;

(b) Assess library e-resources that students wish to access through smartphones;

(c) Explore the University e-resources available to be accessed via smartphones;

(d) Discover enablers and barriers to the use of smartphones by students to access e-resources; and

(e) Provide suggestions on how libraries can enhance access of e-resources through smartphones.

1.6 Significance of the study

Creswell and Creswell, 2018 defined significance of the study as a section that focuses on the relevance of the study from adding literature in the field, improve practice, and policy or decision making. The findings of this study will help UNAM Library to plan better on how to enhance the accessibilities of e-resources through smartphones.

Specifically, the study recommends that with Library e-resources still being underutilised, the Library should create a mobile Library Application for e-resources that will allow students to access e-resources at any time, through a unified application. Additionally, this study will aid the library to improve its library policies and all in all, contributes to the body of knowledge on this subject.

1.7 Limitation of the study

Limitation of the study are challenges beyond the control of the researcher which might affect the methodology or outcome of the study (simon, 2011).

Due to the scope, this study was limited to UNAM main campus therefore the findings cannot be generalised to other campuses, as they might have different factors.

There was a shortcoming related to the question which was not asked those who did not have smartphones, hence valuable information could have been missed.

1.8 Delimitation of the study

The delimitation of the study according to Enslin (2014) entails the boundaries set by researchers. The study was limited to UNAM main campus only. This basically mean that the study did not focus on any other UNAM branch other than the main campus.

1.9 Research Methodology

In line with the pragmatic research paradigm, the researcher employed a mixed method to investigate the use of mobile smartphones in accessing electronic resources at the University of Namibia. The study's research design was a survey. In-depth interviews were conducted with librarians and survey questionnaires were administered to students. The population of this study was 12 librarians and 11535 undergraduates' students, which comprised of 3873 first years, 3250 second years, 2352 third years and 2060 fourth year students. Systematic random sampling was used for the students.

The researcher selected number two (2) as a starting point by rolling of a dice, of which a fixed sample interval was added in order to get to the next individual. Four (4) librarians were selected purposively as the researcher targeted the librarians in charge of e-resources, researches, references librarian, and systems librarian.

A semi structured interview guide was used by the researcher to interview the library staff, whereas a questionnaire was used for the students. Content analysis method was used to analyse the qualitative data where the researcher identified themes and sub-themes emerging from data. For quantitative data, descriptive statistics was generated through SPSS. More details on methodology is to be found in Chapter 3.

1.10 Research Ethics

According to Kumar (2014), being ethical means abiding by the code of conducts set for an acceptable professional practice. Additionally, ethical issues are the same in both qualitative and quantitative research, and resolving ethics depends on the researcher and the conditions the researcher is working under. Du, Davis and Bezuidenhout (2014) highlighted important ethical issues which affect the participants in a research study, which includes informed consent, collecting data from participants, dealing with sensitive information, providing incentives, avoiding harm, dealing with confidentiality, anonymity and avoiding deception. On the contrary, Kumar (2014) emphasised areas that could pose ethical issues to research participants if not dealt with properly. The ethical issues include information, seeking consent, providing incentives, seeking sensitive information, causing harms to participants and maintaining confidentiality. Whereas, Welman, Kruger and Mitchell (2011) discuss the four ethical considerations that a researcher should pay attention to, which are inform consent, right of participants' privacy, protection from harm and involvement of the researcher.

"The researcher should obtain the necessary permission from the respondents after they were thoroughly and truthfully informed about the investigation" (Welman, Kruger & Mitchell, p. 2011). The researcher took into consideration the importance of ethics in conducting research in order not to inflict the participants in anyhow. The researcher, therefore, made use of an informed consent, involvement of the researcher, protection from harm, privacy, and informed consent during this study. An informed consent form was provided to the participants before partaking in interviews and before filling in the questionnaires. Anonymity was maintained in this study.

Participants' names were not recorded at any stage in the research process and their identities were not accorded to their research responses in anyway (Okeke & Van Wyk, 2015). The study used codes to maintain participants' confidentialities. Participants were free to withdraw from the research anytime of their involvement. The researcher received the ethical clearance certificate from the University and abided the terms of the ethical clearance. Electronic data will be stored on cloud storage and the data will be kept for five (5) years as per the University of Namibia Research ethics policy (University of Namibia, 2019).

CHAPTER 2

LITERATURE REVIEW

2. 1 Introduction

This chapter discusses both literature and theoretical framework. The importance of literature review in a study cannot be overemphasised. Ridley (2012) viewed literature review as a complex phenomenon which comprises of the process of conducting literature and the finished product of the literature review. The literature process is an ongoing activity which begins with the first books and articles and finishes with the final draft. Whereas, the finished product is where theories and previous researches are identified which have influenced the choice of research topic and methodology chosen for adoption. Welman, Kruger and Mitchell (2011) considered literature review significant, saying that it helps the researcher to avoid duplicating previous research. Kumar (2014) explains that literature does not only provide study's theoretical background, but it also helps the researcher to conceptualise the findings in relation to other studies. This chapter discusses relevant literature which includes some previous studies conducted in the area of usage and access of e-resources in general and more focus given to smartphones. According to Naeini, Moghaddam, Ziaei, and Ghaebi (2018), the appropriate base for developing and providing library services like access to essential services, training and public services is in smartphones. The study's literature review is therefore discussed under the following subheadings: students' views on accessing library e-resources using smartphones, library e-resources that students wish to access through smartphone, e-resources available to be accessed via smartphones, Barriers and enablers to the use of smartphones to access e-resources, and Suggestions on how libraries can enhance access of e-resources through smartphones.

In details, chapter also discusses the theoretical framework of the study.

2.2 Students' views on accessing library e-resources

As discussed above, students are aware of the library e-resources, however little access is recorded. This section therefore looks at the students' views on the use of smartphones for academic purposes.

Although smartphones are comparatively new in the technology world with little empirical research in the academic setting, students have shown positive perception of the usefulness of smartphones in increasing their skills and knowledge (Hossain & Ahmed, 2016). Utilisation of smartphones by students is considered high as evidenced by studies (Sharma & Madhusudhan, 2017; Akeriwa, Penzhorn, & Holmner, 2015). Akeriwa, Penzhorn, and Holmner (2015) indicate that using mobile technologies for social media based library services at the University of Development Studies Library in Ghana, specifically revealed that 95% of the respondents liked to access the library e-resources via smartphones. Sharma and Madhusudhan (2017) alluded that after studying the use of mobile devices by Library and Information Science students in central universities of Uttar Pradesh in India found that a larger number (92.15%) of respondents used smartphones, a good indication that they are more likely to utilise smartphones for academic purposes.

Kuri, Maranna and Janti (2016) looked at opinions towards the use of smartphones for e-learning in a study they carried out of postgraduate students of Rani Channamma University, Belagavi in India. The study established that 62.8% of respondents voiced good opinion towards the use of smartphones for e-learning and 31.9% of respondents expressed excellent use, while only 1% indicated poor and 4% of respondents did not express any opinion towards the usefulness of smartphone for e-learning.

On the contrary, Mtega, Dulle, Malekaniand, and Chailla (2014) highlighted that the usage of e-resources among agricultural researchers and extension staff in Tanzania found a low usage (29.9%) of smartphones in accessing e-resources.

They however detailed that the low usage was not due to limited ownership of smartphones, but due to small screen sizes. This could mean that if it was not of the challenges that students experience, then more students could have accessed e-resources via their smartphones.

2.2.1 Awareness of library e-resources

A study of the use of smartphones to access e-resources needs to establish students' awareness of e-resources and the abilities to access them, as users can only access the e-resources if they are aware of library e-resources. This section therefore discusses literature on the awareness of library e-resources.

Okello-Obura (2010) established that students were not aware of e-resources offered by Makerere University, Uganda, after assessing the problems library and information science (LIS) postgraduate students faced in accessing e-resources. Ocran (2017) further revealed that students at the University of Cape Coast were not aware that library services could be accessed using mobile devices including smartphones after investigating students' perception on mobile phone based library services at the at the University.

On the contrary, Gakibayo, Ikoja-Odongo, and Okello-Obura, (2013) in a study they conducted on electronic information resources utilisation by students at Mbarara University Library in Uganda, established that a large number (92%) of students were aware of the e-resources that the library provided to the students of which 54.1% got to know through their colleagues.

This shows a positive and an effective way that university libraries can make use of students to create awareness of library e-resources to their peers. Regardless of the awareness of e-resources at Mbarara University Library, 52.78% of the students still avoided using e-resources due to inabilities to use the e-resources, which could mean that apart from awareness, there are other factors to be considered in order to enhance the use of e-resources.

In another study by Ankrah and Atuase (2018) on the use of electronic resources by postgraduate students of the University of Cape Coast, 185 (73.0 %) of respondents were aware of the available e-resources offered by the University Library, while only 67 (27.0%) did not have the knowledge of the available e-resources. The study further revealed library orientation programme is one of the efficient ways of creating awareness for library e-resources, workshops, departmental lectures, library guides, library's website, as well as awareness through library staff. The indicated ways of creating awareness of library e-resources could be the reason for a high number of awareness as indicated above and if it is set as a priority, the chances are high that all students will be aware of e-resources. In addition, Thanuskodi (2012) displayed a high rate of e-resources awareness at the University of Annamalai in India.

The students' academic work is believed to suffer without the access of electronic resources (Matheus & Abankwah, 2018; Okello-Obura, 2010). Therefore, there is a need to understand and create awareness of library e-resources in promoting access using different accessing tools and mobile applications like smartphones.

2.2.2 Why mobile devices to access e-resources?

Ocran (2017) after studying the perception of students on mobile technology based library services at the University of Cape Coast in Ghana, established that students found it easier to search and access information on smartphones anywhere, which saves time of moving from one location to another in search of learning materials.

Saxena and Yadav (2013) discovered that students make use of their mobile smartphones in their comfort zones accessing information fast with no orientation and training required and the information is accessed anytime. This argument is supported by Malathy and Kantha (2013), who argued that library users are familiar with their own mobile devices, which aid them to access information effortlessly, anywhere, anytime with no required orientation and training.

Dukic, Chiu, and Lo (2015) emphasised the importance of smartphone's portability, arguing that it enables its owner to use it for learning purposes under exceptional circumstances such as for emergency situations. Sharma and Madhusudhan (2017) in a study on the use of mobile devices by library and information science students in central universities of Uttar Pradesh in India, discovered that students use mobile devices to access e-resources for day to day usage of mobile device 85.62%, access to resources anytime 83%, mobile devices' portability 66.01%, and the fact that it saves time 58.82%.

2.3 Electronic resources available to students for access

The section above discussed literature on students' views on the use of smartphones for academic purposes, which has displayed that students are willing to access e-resources using smartphones. This section looks at electronic resources which are available for students' access.

Ankrah and Atuase (2018) in a study on the use of electronic resources by postgraduate students at the University of Cape Coast discovered that a significant number 147 (57.9%) of respondents accessed information from search engines, 67 (26.7%) respondents accessed Emerald, 45 (17.9%) for EBSCO host, while 36 (14.3%) respondents rarely accessed the e-resources.

They further indicated that HINARI, Francis and Taylor and Sage databases were some of the databases which students could access, however the usage was very low.

Akeriwa, Penzhorn, and Holmner's (2015) study on mobile technologies for social media based library services at the University of Development Studies Library in Ghana, discovered that 75% of the respondents accessed library news, and 74% accessed Online Public Access Catalogue (OPAC). Similarly, Abubakar and Adetimirin (2016) also established that students accessed e-journals, e-research reports, e-newspapers and e-magazines after studying the postgraduate students' use of e-resources in Nigerian University Libraries.

Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) established that students mostly made use of their smartphones to access internet search engines, followed by e-books, databases, e-journals, and scholarly databases. Whereas, Sharma and Madhusudhan (2017) after studying the use of mobile devices by library and information science students in Central Universities of Uttar Pradesh in India, revealed that a large number of respondents (83.66%) utilised mobile devices to access the Library website, 45.75% checked library hours, 41.83% accessed institutional repository, and 39.87% contacted a librarian. Additionally, only few respondents (16.34%) used web OPAC and even fewer (12.42%) accessed e-journals and e-books (1.96%).

Nonetheless, Dresselhaus and Shrode (2012) stated that librarians were of the opinion that various resources should be made available to students to be accessed using mobile devices after conducting a study on whether students used mobile technologies in their academic journey and if librarians were ready to meet challenges of students accessing resources through mobile devices.

Mtega et al. (2014) in a study on the usage of e-resources among agricultural researchers and extension staff in Tanzania, discovered that the majority (94%) of the researchers had access to e-resources through search engines; in particular Google, although they were provided with the widely used popular agricultural databases such as the Access to Global Online Research in Agriculture (AGORA).

Kuri, Maranna and Janti's (2016) study carried out in India on the use of smartphone for e-learning by the postgraduate students of Rani Channamma Univeristy, discovered that 19% of respondents accessed web pages; 18%, videos and audios; 17%, e-journal/articles newspapers and magazines; 16%, dictionaries; 11%, e-books and 6.5%, theses and dissertations. Adeleke and Emeahara (2016) on the other hand, were of the opinion that although the Ibadan University library continued subscribing to e-resources, the usage was low as most students surfed internet more, accessed non-academic resources and checked their emails instead of using the available university electronic resources. Mawere and Sai (2018) specified that the Great Zimbabwe University had an advanced search engine, institutional repository, online databases and electronic past examination papers available online and could be accessed via the university link. They further added that the wide variety of e-resources made available to the university was via different consortiums, members associations and networks that the Library was a part of.

Tripathi, and Kumar (2014) also discovered that Jawaharlal Nehru University in India subscribed to e-journals, and online databases, besides getting access to twenty-three (23) more databases through their consorting called UGC-INFORNET, further stating that they have technologies which enable visually challenged and partially sighted students to access OPAC and online resources.

Chaputula and Mutula (2018b) revealed that universities in Malawi had a variety of e-resources provided to students ranging from e-journals, OPAC and institutional repositories of local content which potentially could be utilized with smartphones. It also came to light in the study by Ankrah and Atuase (2018) that the University of Cape Coast in Ghana provides different e-resources to students from EBSCO host, HINARI, Francis and Taylor and Sage databases. Similarly, Akinola, Shorunke, Ajayi, Odefadehan, and Ibikunle (2018) also revealed that the University of Ibadan, Nigeria provides different electronic databases including.

Nevertheless, the postgraduate students showed a high level of skills and experiences with the use of electronic databases, with a majority (51.9%), moderate level of skills and experiences (26.0%), while (22.1%) had no skills and experience at all. Kuri, Maranna and Janti (2016) went further to question the types of web browsers the students used to access scholarly information resources. Students indicated installed devices in their phones with UC browser topping the list with (41.9%), Google Chrome (34.9%), Opera Mini (17.4%), Mozilla Firefox (4.9%) and others 0.7%). Ocran (2017) however revealed that, students wished they could access databases, journals, digitised thesis and relevant books using mobile devices and without necessarily visiting the library buildings. Bushhousen et al. (2013) shared the same sentiments that students liked to access databases and accessing full text journal articles using their smartphones.

2.4 Enablers of students' mobile device use in accessing e-resources

The above studies provided literature on the e-resources available to students for access, which has shown that university libraries have a lot of databases which students could access, of which many are mainly accessible on-campus. There is however a feisty in what students would like to access.

Thus the importance of this study was to find out the types of e-resources students really would like to access. This section looks at the enablers of students' mobile devices use in accessing e-resources.

2.4.1 Bandwidth

A good bandwidth enables users to access e-resources at ease. Akinola et al., (2018), emphasised a need for the university library to have its own dedicated bandwidth with fast internet connectivity, to avoid network fluctuations problem and slow speed in the process of downloading information.

In the same vain, Sajane (2017) highlighted a good bandwidth of (74.4%) from the despondence and indicated that users want the quickest possible way to access e-resources, especially when downloading articles, adding that if the bandwidth is poor users lose interest which leads to negative attitude towards the use of e-resources.

2.4.2 Wi-Fi

Wi-Fi is believed to be a facility that allows computers, smartphones, or other devices to connect to internet or communicate with one another wirelessly within a particular area (Sajane, 2017). Good Wi-Fi connection allows the users to connect to internet wirelessly, which could be a great approach to enhance access through students' mobile devices at any given time.

This is also a concern that Lo et al., (2016) pointed out that Wi-Fi coverage affects the e-library services, both for reference sources and databases.

2.4.3 Internet connection

E-resources are accessible with the aid of the internet. Thus, it is vital to have good internet connection.

The high internet data cost, poor network coverage, slow internet, and slow loading time are impediments associated with accessing e-resources via smartphones (Sharma & Madhusudhan, 2017). These findings were in congruent with other researchers who found that constrains of accessing e-resource on mobile devices is high cost of data subscription, poor internet connectivity (Fasae & Idowu, 2015; Madhusudhan, 2016). Additionally, Maranna & Janti (2016) underpinned similar challenges of poor internet connectivity and slow Wi-Fi access. Similarly, Mi et al. (2016) conducted a systematic review of literature on the use of mobile phones among health professional students to access e-resources, which revealed internet connectivity at clinical settings as a big challenge which was also highlighted by (Akinola et al., 2018; Ankrah & Atuase, 2018).

2.5 Barriers to students' smartphones use in accessing e-resources

The section above discussed literature on the enablers of students' mobile smartphones use in accessing e-resources. This section looks at barriers on students' smartphones use in accessing e-resources.

2.5.1 Lack of relevant searching skills

Akinola et al. (2018) after assessing the awareness and use of electronic databases by postgraduates at the University of Ibadan in Nigeria discovered that a higher number of students had challenges in retrieving relevant information due to lack of search skills. Sajane (2017) also recorded a 100% on lack of relevant searching skills. However, Pearson and Hussain (2015) highlighted that students' utilisation of smartphones for normal day-to-day services could be on its own, addictive and hazardous if not well advised on usage.

Therefore, a need for relevant skills on how to use smartphones to retrieve educational information is required. George, Maina and Wanangeye (2016) affirmed that university libraries were failing to implement the use of smartphones to access e-resources, primarily due to internet failure, lack of training of staff members, lack of willingness from other library users to use mobile technologies and lack of training amongst users on how to access e-resource via smartphones. Similarly, Ankrah and Atuase (2018) highlighted similar challenges; lack of information on how to use e-resources, insufficient search skills, and information overload. Moreover, Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) argued that the utilisation of e- resources is not only affected by lack of computer and information literacy skills, but it also lacks enough computers and slow internet connectivity.

2.5.2 E-resources access limitation

Some of the e-resources and databases provided to students by their respective institutions are only accessible on the institutions' premises, making no provision for students to access them off campus.

Mawere and Sai (2018) revealed that at the Great Zimbabwe University, the e-resources could not be accessed outside campus due to the fact that most of the e-resources offered by the institution were only available within the university's network infrastructure. The same challenge was revealed by Sajane (2017), saying that 38.5% of the despondences indicated that e-resources off campus access was a problem for them.

2.5.3 ICT Policies

Chaputula and Mutula (2018a) on the other hand, are of the view that accessing e-resources on mobile phones is being hindered by lack of operational ICT policies to govern the operations of library and information services.

In a study on adoption of radio frequency identification technology in university libraries in Kenya, Makori (2013) highlighted that attention is given to policies favoring acquisition of physical information sources at the expense of technological systems, therefore lacking ICT policies to adopt and embrace modern technological solutions which hinders development.

2.6 Enhancing access to library e-resources using smartphones

The section above discussed literature on the barriers on students' smartphones use in accessing e-resources which has shown that the students' access to e-resources has many challenges which hinder access, including high reaction on lack of searching skills, lack of internet access, information overload, and lack of accessing e-resources off campus. This have prompted the researcher to advance this study by finding out what can be done to enhance access to e-resources using smartphones, including whether librarians are given continuous training to deliver services via mobile devices like smartphones.

2.6.1 Mobile friendly websites

Looking at proposed strategies for enhancing the use of e-resources, it unmistakably demonstrates the need of creativity in the digital world in order to boost access of e-resources in academic environments. Mi et al. (2016) proclaimed that with rapid rise on the usage of smartphones, libraries can leverage this by proving access to e-resources through mobile phones and extend learning spaces in real and virtual worlds.

Saxena and Yadav (2013) voiced that libraries should create their own mobile sites with mobile friendly interface, which allow users to rearrange its control and navigation to suit the size of the screen.

Similarly, Bushhousen et al. (2013) in a study on smartphone use at a University of Health Science Center in the United States of America, had the following suggestions from respondents: provision of access to literature databases by the university; development of mobile-friendly version websites; improve internet connectivity and provide access to full text electronic journals which will be utilised via mobile smartphones.

2.6.2 Policies

Sharma and Madhusudhan (2017) advised that library authorities should lay down policies towards the use of mobile devices and develop new tools and mobile apps for delivering access to e-resources. Correspondingly, Chaputula and Mutula (2018a) stated that libraries need to draft Information and Communication Technology (ICT) policies that support the use of mobile smartphones to access e-resources. It could be drawn that, policies need to be put in place to harness the maximum benefits of ICT use.

2.6.3 Library staff training

Lack of skilled librarians hampers the deliverance of access to e-resource on smartphones. Chipatula and Mutula (2018a) suggested that university and college library staff should be given training on how to manage and access e-resources using smartphones prior to implementations. To add, libraries should implement continuous professional development programmes related to deliverance of library e-resources, through mobile phones to ensure that library staff continues to update their knowledge and skills, as technology is very dynamic. Equally, George, Maina and Wanangeye (2016) recommended that the government should initiate and implement training programmes in all academic institutions on the use of mobile phones technology in accessing and utilising e-resources including seminars and workshops and by involving all the stakeholders in various academic libraries.

In the same vain, Okello-Obura (2010) also highlighted the need of not only training staff members, but also introducing the e-resources training and ICT use to first year students together with awareness campaigns and short messages that should be integrated with e-resources.

2.6.4 Improve Internet connectivity

Internet connection creates no room for e-resources access. Therefore, a high number of researchers has highlighted the need to improve internet connectivity (Bushhousen et al, 2013; Matheus & Abankwah, 2018; Saxena & Yadav, 2013; Madhusudhan, 2016).

Sharma and Madhusudhan (2017) proposed that libraries should provide WI-FI facilities for users, design library apps for android and windows-based smartphones, and develop effective use of mobile devices for library resources and services.

2.6.5 ICT Infrastructure

Some studies have gone as far as looking at ICT amenities and libraries. Libraries should invest in ICT infrastructure (Sejane, 2017). Chisenga (2006) specified that the implementation of ICT facilities in libraries depends on adequate funding and upgrading of hardware, software purchase, license fees, maintenance contracts, and telecommunications and subscription costs to e-resources.

2.6.6 E-resources awareness

In Akinola et al. (2018) words, libraries have significant roles to perform in creating more awareness among students on the availability of electronic databases including developing a functional library website, installing the mobile library applications and physically meeting with students to educate them on the needs, uses and benefits of using electronic resources. After studying access to and use of electronic information resources in academic libraries of the Lesotho Library Consortium, Sejane (2017) pointed out that all 39 (100%) respondents indicated that they became aware of e-resources through library orientation and trainings. The call to create awareness and promote the use of open access resources was also highlighted by Ahmed (2013) in a study on use of electronic resources by the faculty members in diverse public universities in Bangladesh Ahmed (2013) stated that listing the open access resources on the university websites could help awareness, access and add to the number of electronic resources available.

This section looked at how to enhance e-resources access, highlighting good recommendations, including mobile friendly website, staff training, internet connection improvement, ICT infrastructure and facilities, mobile application supporting policies and the need of awareness. The section below focuses at the theoretical framework.

2.7 Theoretical Framework

The importance of the use of theory has been emphasised by Creswell and Creswell (2018), signifying that theory provides a proposed explanation for the relationship among the variables being tested by the investigator in quantitative research. It could also serve as a lens for inquiry or could be generated in qualitative research. Information technology (IT) acceptance research has yielded many competing models for explaining the relation between user attitudes, perceptions and beliefs and eventual system use (Meade & Islam, 2006; Venkatesh, Morris, Davis, & Davis, 2003). The most commonly used models include the diffusion of innovations (Rogers, 1995), the theory of reasoned action (Ajzen & Fishbein, 1975), the theory of planned behaviour (Ajzen & Madden, 1986) and the technology acceptance model (Davis, 1986).

The study was guided by the Technology Acceptance Model (TAM), Convenience Concept Model and Connectivity Theory.

2.7.1 Technology Acceptance Model (TAM)

TAM is an information systems model that was developed by Davis in 1986, based on how users came to accept and use technology. This model according to Marangunić and Granić (2015) has become a leading model in investigating factors which affect the users' acceptance of technology.

TAM focused on two beliefs: Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU). PU is defined by Davis (1989) as the degree to which a person is certained that using a particular system would enhance his/her performance, whereas PEOU is defined as the degree to which a person considers that using a particular system would be free from effort. TAM was based on the Theory of Reasoned Action (TRA) which was originally developed in 1967 by Fishbein and Ajzen. TRA is constituted of attitudes and subjective norm, the two independent concepts which determine an intention towards performing behavior which is identified from a person's decision to engage that behavior.

The model advocates that the attitude towards the use of a certain technology is based on two principles, the perceived usefulness and perceived ease of use. The figure 2.1 below shows the original TAM.

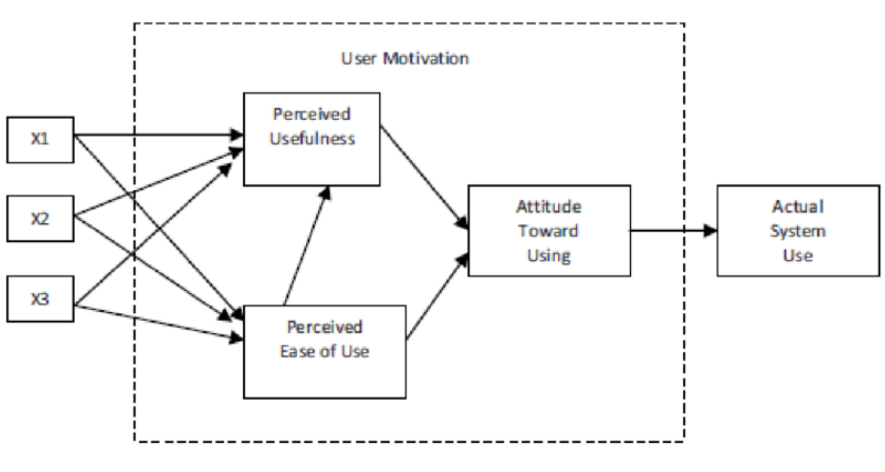

Figure 2.1 Original TAM proposed by Fred Davis (Chuttur, 2009, p.2)

Figure 2.1 on the original TAM above shows that external factors x1, x2 and x3 (social factors, cultural factors and political factors) influence the two perceptions: perceived usefulness and perceived ease of use.

The system design characteristics symbolized with x1, x2, x3 are believed to directly influence the hypothesised perceptions (Chuttur, 2009). Whereas, the attitude of the user is considered to be influenced by two major perceptions, perceived usefulness and perceived ease of use, with the perceived ease of use having a direct influence on the perceived usefulness.

Davis further hypothesised that an attitude of a user towards system is a major contributing factor of whether the user will actually use or reject the system. An upgraded and extended version of TAM was proposed by Fred Davis and Richard Bagozzi. This model pronounces that the acceptance of a new technology by a user is based on two factors which determined the attitude of the user towards using technology as stated in the original TAM above. However, the model further goes on to say that the perceived usefulness will also influence the behavioral intention to use; and the behavior is also determined by the attitude which influences the actual use. This revised version of TAM is shown in the figure 2.2 below.

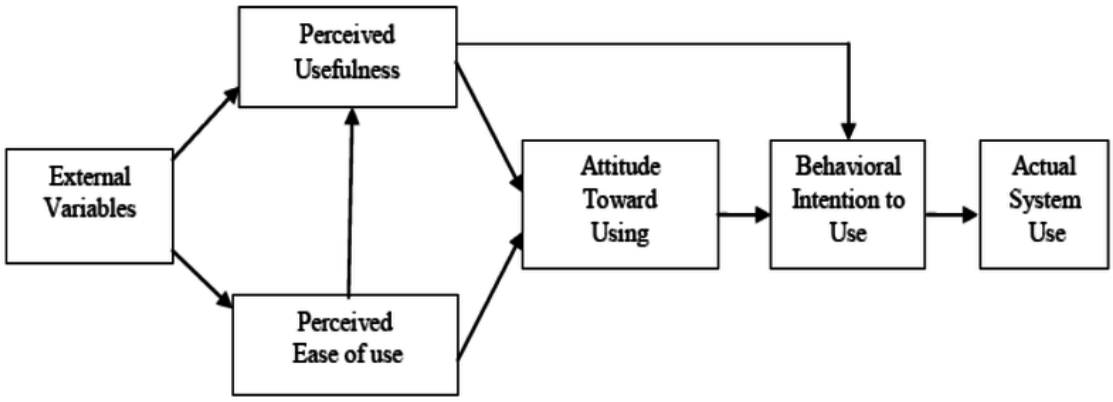

Figure 2.2 First modified version of TAM (Davis, Bagozzi and Warshaw, 1989, p.985)

The study used the latest TAM version. The latest version of TAM was formed by Venkatesh and Davis in 1996 after both perceived usefulness and perceived ease of use were found to have direct influence on behavioral intention, consequently eliminating the need for "attitude toward using" concept before behavioral intention to use technology. This version therefore pronounces that both perceived usefulness and perceived ease of use influence the behavioral intention to use the technology. This version of TAM is shown in figure 2.3 below.

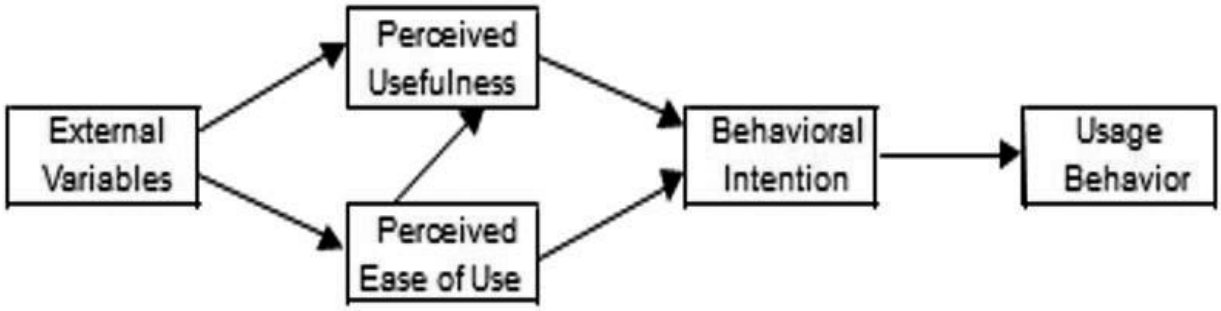

Figure 2.3. Latest Version of TAM (Venkatesh & Davis, 1996, p.453)

Shonhe and Jain (2017) after studying the use of mobile technologies, highlighted that technology increases knowledge and escalates personal innovativeness and collaboration with people. This therefore, denotes that perceiving technology positively gives students more motives to not only accept, but also utilise it to the fullest for their own benefits.

In line with TAM, this study investigated students' perceptions on the usefulness and ease of use of mobile smartphones in accessing e-resources.

The latest version of TAM was considered more appropriate for this study, as the researcher believed that if users perceive the use of smartphones useful and that they are easy to use in accessing e-resources, then they will be more likely to use smartphones to access the e-resources regardless of the attitude towards smartphones which is highlighted in the original and first modified TAM as indicated above. It is therefore vital to highlight that students are likely to use smartphones to access e-resources if they accept the technology, which includes smartphones. Studies have applied an extended TAM model to add other factors that influence acceptance of technology to the perceived ease of use and perceived usefulness that TAM focuses on (Khrais, 2017; Leavell, 2020).

However, in this study due to convenience of smartphones, the researcher added perceived convenience. Hence, the relevance of the convenience model to inform the various dimensions of convenience such as time and place which this study investigated.

2.7.2 Convenience Concept Model

The Convenience Concept Model came through after Connaway, Dickey, and Radford (2011) investigated convenience as a major theme in different information seeking behaviors, by analyzing data from Institute of Museum and Library Services (IMLS) funded projects. Convenience is vital in this study given the ground of utilizing smartphones to access e-resources at any given time.

These authors highlighted convenience, as one of the primary criteria used for making choices during the information seeking process. The model further states that library systems and interfaces need to look familiar to people through popular interfaces for library services to be easily accessible with little or no training to use.

According to Farquhar and Rowley (2009), research into convenience has long been concerned with the time and effort spent by users in accessing information.

The Convenience Concept Model was relevant for this study which aims to determine the students' views on accessing library e-resources using smartphones, and the study their views on the convenience of using smartphones as mobile applications to access e-resources. Users do not need to visit the library to access the e-resources, considering the use of smartphones hence, becoming convenient for them to access library e-resources at any given time and anywhere around the globe.

Shidi and Terna (2013) also found that people are likely to accept the use of technologies through online resources, which would easily enhance their job performance without spending too much time and efforts as vividly explained by the Convenience Concept Model above.

2.7.3 Connectivity Theory

The Connectivity Theory is also known as the Connectivism Theory. It is a learning theory for the digital age, developed by George Siemens, and embedded from psychological learning theories of behaviourism, cognitivism and constructivism. Connectivity Theory illustrates that with the changing technology, the current state of knowing is of little significance to facilitate continuous learning in the digital era, thus a need for continuous learning.

The theory is founded on the following eight (8) principles:

- Learning and knowledge rests in diversity of opinions;
- Learning is a process of connecting specialised nodes or information sources;
- Learning may reside in non-human appliances;
- Capacity to know more is more critical than what is currently known;

- Nurturing and maintaining connections is needed to facilitate continual learning;
- Ability to see connections between fields, ideas, and concepts is a core skill;
- Currency (accurate, up-to-date knowledge) is the intent of all connectivity learning activities;
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision (Siemens, 2005).

Amongst the eight principles of the Connectivity Theory as indicted by Siemens, 2005 above, the following principles are relevant to this study:

- **Learning is a process of connecting specialised nodes or information sources**

Learning takes place through different sources of information. Therefore, it is vital for both librarians and users to be connected to different information sources, of which in this case e-resources.

Learning may reside in non-human appliances

Learning is not only done through human beings, however one can learn through technological devices. Hence, important for library users to advance their learning through their own mobile smartphones.

- **Capacity to know more is more critical than what is currently known**

In life, one does not stop learning, and personal growth depends on what a person feeds him/herself every day.

This can be compared to a plant, which will only grow when being watered and fed with all needed nutrients. There is subsequently a need for both librarians and users to acquaint themselves and be eager to know new trends than what they already know in order to utilise e-resources via smartphones.

- **Currency (accurate, up-to-date knowledge) is the intent of all connectivity learning activities**

This principle is relevant to this study as library users need to be served with the current information, both the up-to date e-resources, and recent smartphones and their applications in order to facilitate learning.

- **Decision-making is itself a learning process**

This principle speaks to this study as it says that we learn from our decisions. However, our decisions can also change with time due to the modifications in the information climate. This could mean that a person may decide to use a smartphone today which may seem convenient, yet upon the invention of a new smartphone with advanced features, a person may change his/her decision for something better after getting to learn new advancements.

Saxena and Yadav (2013) argued that the expert technical knowledge must flow throughout the profession, and in order for the librarians to serve users, they need to learn and use the technology as it grows. As a result, librarians are expected to ensure that they know the knowhow of smartphones and other mobile devices as new trading technology which can enhance access to e-resources. Applying this theory, this study investigated the use of smartphones to access e-resources at UNAM. Therefore, this demonstrates that the library users should be able to acquaint themselves with the changing technology and knowledge in order to remain relevant in the digital era.

In light of the above, it is clear that technology changes every time. Hence, there is a need to learn how to use smartphones as a new mobile technological device to improve access to e-resources. This theory addressed the objective of discovering enablers and barriers to the use of smartphones by students.

Looking at the challenges as highlighted in this study such as searching skills, can only be tackled effectively if both the librarians and users continue to acquaint themselves with the changing technology of new smartphones' versions and also the features which comes with different e-resources.

2.8 Summary

The review of the literature shows that smartphones have proven to be the most widely used devices. Moreover, more users are not acquainted with the use of smartphones in accessing e-resources, instead, literature shows that students mostly use smartphones to access nonacademic information. Therefore, a gap of literature on accessing academic e-resources using smartphones is recorded. In extensively addressing the objectives of the study, theoretical triangulation was used. The study embraced the Connectivity Theory, the Convenience Concept Model and the Technology Acceptance Model as explained in the chapter. The theory and models were applied in context of learning how to use knowledge in the digital age, supporting the convenience of using smartphones, and accepting technology in the digital era.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter focuses on the research methodology of this study, which investigated the use of smartphones in accessing electronic resources at the University of Namibia. According to Saunders, Lewis and Thornhill (2016), methodology is a model on how research should be undertaken, comprising of philosophical and theoretical assumptions on which the research is based and the implications of the methods adopted. Therefore, this chapter covers the research philosophical assumptions, also known as research paradigms, which informed the research approach applied for this study. The research design, population and sampling, data collection methods and research instruments used are also explained in this chapter. The chapter further looks at the research procedure, how data was analysed and the issue of reliability and validity. Finally, this chapter covers the evaluation of the research methodology and the chapter summary.

3.2 Philosophical assumptions of the study

The philosophical assumptions of the study, well known as research paradigms are referred to by Creswell and Creswell (2018) as the philosophical worldviews, includes positivism, constructivism, transformative and pragmatism, and they are about the world and the nature of research that a researcher brings to a study, arising from inclinations and past research experiences. Research paradigms are defined by Babbie (2010) as fundamental models or frames of reference we use to organize our observations and reasoning. Saunders et al. (2016) highlighted five major philosophies; positivism, critical realism, interpretivism, postmodernism and pragmatism.

This study was within a pragmatism research paradigm informed by positivist and interpretivism research assumptions.

3.3 Pragmatism Worldview

As put by Cressell and Creswell (2018), pragmatism assumption arises as a result of actions, situations, and consequences as opposed to post-positivism, using different approaches to understand the problem and emphasises the research problem instead of focusing on methods. Pragmatism claims that no single point of view can ever give the entire picture and there may be multiple realities, recognising many ways of interpreting the world and undertaking research. This study applied the pragmatism worldview, which influenced the researcher to use the mixed methods approaches to investigate the use of smartphones to access the e-resources at UNAM. Positivism world view informed the quantitative approach of this study and interpretivism the qualitative approach henceforth the pragmatism assumption. Positivism and interpretivism worldviews are discussed below.

3.3.1 Positivism Worldview

Positivism is believed to be a quantitative philosophical assumption. This worldview is sometimes referred to as the scientific method and science research. Quinlan (2011) states that with positivism reality is singular, therefore is separate from consciousness and believes that there is only one objective reality. This worldview claims that an objective way be used to understand the social world.

3.3.2 Interpretivism

Interpretivism is believed to be a qualitative philosophical assumption, which argues that the human experience is only understood from the people's point of view (Athanasou et al., 2012).

Saunders et al., (2016) stated that interpretivism gives emphasis on the differences of human from physical phenomenon as they create meanings. Furthermore, an interpretivist researcher drives to create new, richer understandings and interpretations of social worlds and contexts.

3.3.3 Pragmatism

This study was underpinned on the pragmatism philosophical assumption hence it adopted a mixed methods research approach.. Pragmatism is a philosophical assumption that open doors to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis (Creswell & Creswell, 2018). The study followed the interpretivism philosophy, applying qualitative research approach in order to get the viewpoints of librarian on the use of smartphones in accessing e-resources at UNAM through interviews. Positivism informed the adoption of a quantitative research approach to investigate the standpoint of students in using smartphones to access e-resources at UNAM through a survey.

3.4 Research Design

The study adopted a case study research design, to investigate the use of smartphones in accessing e-resources at UNAM. According to Leedy and Ormrod (2010), a case study is suitable to learn more about a little known or poorly understood situations, such as the need to understand the use of smartphones to access e-resources at UNAM. Fox and Bayat (2012) highlighted that in using a case study, three things should be borne in mind: a case should have boundaries, thus demarcated or defined; data collection technique for a case should not be to describe but rather to search in an inductive way; and triangulation is habitually used as it is associated with validity.

Therefore, the researcher primarily investigated the use of smartphones in accessing e-resources at UNAM and made use of survey questionnaires and interviews to inductively gather data. In overcoming intrinsic biases and problems associated with single methods, the researcher integrated both quantitative and qualitative data.

3.5 Data collection methods

This study used both qualitative and quantitative data collection methods to gather data on the use of smartphones in accessing library e-resources at UNAM. Kumar (2014) highlighted that the use of multiple methods to collect data and using different methods for information gathering through both qualitative and quantitative methods qualifies a study to be classified as mixed methods. Mixed methods research was suitable because the researcher used more than one method, interviews and survey thereby integrating both qualitative and quantitative data concurrently to address the research problem and objectives (Creswell & Creswell, 2018). Within mixed method designs there are three classified methods: Concurrent timing; which applies when a researcher uses a single phase of study by implementing quantitative and qualitative strands. Sequential timing; where a researcher implements strands into two different phases, by collecting and analysing one type of data per time and finally the Multiphase combination timing whereby a researcher implements multiple phases which includes sequential and or concurrent timing (Creswell & Clark, 2011). This study therefore collected both qualitative and quantitative data concurrently, by so doing, making appointments with librarians for the available slots and at the same time administering questionnaires to the students. This was made possible since both data were being collected at the same campus. This study used survey questionnaires and interviews to collect data.

3.4.1 Interviews

An interview is defined by Okeke and Van Wyk (2015) as an approach that can be analysed within qualitative research situations, whereby questions are asked by an interviewer through face-to-face conversational engagement in order to elicit responses.

An interview is the most appropriate approach for studying complex and sensitive areas, making it possible for an investigator to obtain in-depth information for probing and giving the researcher the ability to supplement information obtained from responses with observation of non-verbal reactions (Kumar, 2014). A semi structured interview guide was used by the researcher to interview the librarians through telephonic in-depth interviews.

3.4.2 Survey

Survey questionnaires were used in this study. According to Fox and Bayat (2008), Survey comprises of putting a set of pre-formulated questions, in a pre-determined sequence in a structured questionnaire, to a sample of individuals drawn to be representatives of a given population. The researcher used survey questionnaires which were self-administered to students.

3.5 Data Collection Instruments

This section discusses the data collection instruments used for this study. According to Kumar (2014), a research instrument is a research tool that becomes a means of collecting information for a study. In order to collect quantitative data from students, the study used both closed and open-ended survey questionnaires. To solicit qualitative data, the researcher used semi structured interview guides for the librarians.

The instruments were designed and aligned to the study's theories and concepts, and in such a way that they addressed the objectives of the study.

3.5.1 Interview Guide

The researcher used a semi structured interview guide (see Appendix F) for the interviews with the librarians. As put by Welman, Kruger and Mitchell (2011), semi-structured interview comprises of questions and themes to be covered during the interview. According to Saunders et al. (2016), semi-structured interview guide gives a researcher an opportunity to probe answers allowing the interviewee to explain and build on their responses, which will add significance and depth to the data collected.

The researcher used a semi structured interview guide to interview librarians, giving an opportunity to the respondents to explain and give depth to their answer through probing questions in between the interview.

3.5.2 Survey Questionnaire

A questionnaire is an enquiry form, which contains systematically arranged series of questions that are given to research participants to produce data for a study (Okeke & Van Wyk, 2015). Kumar (2014) highlighted that a questionnaire is reasonably convenient and inexpensive when administered to a study population. A questionnaire provides greater anonymity and increases the likelihood of obtaining accurate information where sensitive questions are asked since there is no face-to-face interaction. Likert-scaled questionnaires are frequently used in rating questions in research (Saunders, Lewis, & Thornhill, 2016). Closed ended questions allow respondents to choose answers from a series of possible answers Whereas, open-ended questions allow respondents to express their thoughts and opinions which they feel are appropriate to the question (Willemse & Nyelisani, 2015).

This study permitted the respondents to choose possible right answers from a series of answers and also to express their views in the questionnaires for the researcher, to gather better responses on the accessibility of e-resources using smartphones at UNAM. In collecting data from students, the researcher used questionnaires which comprised of both closed and open-ended questions, with nominal and Likert scales, yes and no answers, as well as selecting (allowing multiple responses) from a list of options.

3.6 Population and Sampling

This section is on the population of the study and how the researcher sampled the population.

3.6.1 Population

According to Okeke and Van Wyk (2015, p. 226) "a population is a group of persons, objects, or items from which samples are taken for measurements".

Welman, et al. (2011) detailed further that a population comprises of the total collection of all unit analysis which the researcher wishes to make specific conclusions. The units of observation were undergraduate students and librarians.

The population comprised of 11535 undergraduate students from UNAM main campus (B. Wilson, personal communication, June 7, 2018) and 12 librarians from UNAM main campus library.

3.6.2 Sampling

Du, Davis and Bezuidenhout (2014) define a sample as a population's subset, which reflects the total population. In order for a sample to be representative, it should have the same relevant characteristics as the population. Willemse and Nyelisani (2015) expressed that sampling reduces costs, collection time and improves overall accuracy.

Taking into account the mixed method approach undertaken by this study, a purposeful sampling method was used as a qualitative sampling method and Walpole formula was used for the quantitative approach.

Qualitative sampling is defined by Dhivyadeepa (2015) as the selection process of smaller individuals, chosen as good key informants who will contribute to the researcher's understanding on a given phenomenon. Qualitative research samples are usually smaller and less representative than in quantitative. Four (4) librarians were selected purposively, allowing selection of those who had better understanding of the topic under study (Cresswell & Clark, 2011). The researcher sampled 4 librarians, reaching saturation, which consisted of 1 e-resources' librarian, who was chosen because of working with e-resources being studied in this study. One (1) research librarian was selected because more researches are being done with e-resources, thus vital for this study.

One (1) reference librarian was selected because of the involvement and daily contact with students who come to the library seeking for e-resources and referrals; and one (1) system librarian was selected because of the system librarian has better knowledge on ICT and internet at large.

For quantitative sampling, the researcher used Walpole's (1974) formula to determine the total sample size from the population of 11535 undergraduate students. The population comprised of 3873 first years, 3250 second years, 2352 third years and 2060 fourth year students, (B. Wilson, personal communication June 7, 2018).

According to this formula, Walpole (1974) indicates that a sample size is represented by $n = Z^2\alpha/2/4e^2$, where n = sample size: Z = standard score, corresponding to a given confidence level (in this case 95%); and e = proportion of sampling error (in this case 0.05). Using Walpole's (1974) formula above, the sample size came to three hundred and seventy-two (372) students, which is the total students' sample size for this study.

In order for the researcher to make sure all the undergraduates were represented in each level of undergraduate study, the researcher used the proportionate stratification. The proportionate stratification determined the sample sizes of each stratum.

The following equation determined the sample size: nh = (Nh/N)*n. The equation is explained below:

nh = (the sample size for the stratum)

Nh = (the population size for the stratum)

N = (the total population size)

n = (the total sample size)

Therefore, based on the above equation, the following strata sample sizes were selected for each stratum:

First years: 125 = (3873/11535) * 372

Second years: 105 = (3250/11535) * 372

Third years: 76 = (2352/11535) * 372

Fourth years: 66 = (2060/11535) * 372

Systematic sampling was used for the students. Leedy and Jeanne (2010) argue that systematic sampling entails selecting individuals according to a predetermined sequence. Additionally, Du, Davis and Bezuidenhout (2014) state that systematic

sampling entails choosing individuals randomly using a sampling interval, which is a distance between each individual selected for the sample. Systematic sampling is considered to be more practical and costless (Fox & Baayat, 2012). The researcher calculated the sequence for each strata sample sizes, which resulted to different intervals for each stratum. The interval numbers were rounded off to the nearest whole number as shown below:

Interval= Sample size / Strata Sample Size

First years: 372/125 = 3

Second years: 372/105 = 4

Third years: 372/76 = 5

Fourth years: 372/66 = 6

The researcher selected number two (2) as a starting point by rolling of a dice, of which a fixed sample interval was added in order to get the next individual. Different sample intervals were used as indicated above, depending on the level of study.

3.7 Procedure

Research procedures give a comprehensive description of how the researcher carried out the study. According to Athanasou et al. (2012), the research procedure should describe how the fieldwork was conducted, how instruments were administered and enough information to allow the study's replication. The researcher got a research permission letter (see Appendix A) and the ethical clearance (see Appendix C) from UNAM Research Ethics Committee (UREC), in accordance to UNAM's Research Ethics Policy and Guidelines in order to be granted permission to conduct the research. The researcher had to seek permission to conduct the study in the Library. Permission from the University librarian to interview librarians was granted (see Appendix B).

The researcher further made appointments to conduct interviews. Although the researcher planned on taking two weeks to make appointments and interview librarians, it was not doable due to the busy schedule of librarians. Hence, it took the researcher (three) 3 weeks to complete. The researcher took two months to collect data from the students due working schedule of the researcher.

The questionnaires were handed over to students; the researcher waited whilst students completed them and collected them after students completed them.

3.8 Data analysis

Data analysis involves examining the data collected and organising information in order to give the researcher a better understanding of the phenomenon under study. As per Kumar (2014), in mixed methods, a researcher may use different methods for appropriate analysis if data was collected by two different methods which belong to two research approaches as it was the case with this study. Data gathered from interviews was meant to corroborate the questionnaires data, hence it was analysed concurrently and integrated with quantitative data.

3.8.1 Qualitative data analysis

Qualitative analysis includes reduction, organisation, interpretation and substantiation of data (Okeke & Van Wyk, 2015). In order for the researcher to analyse qualitative data, content analysis method was used. Leedy and Ormrod (2014) defined content analysis as contents of a particular body of material that is detailed and examined systematically for the purpose of identifying patterns, themes or biases. The researcher used the content analysis process first by identifying and developing the main themes from the responses, classifying responses under different main themes by going through transcripts of all the interviews and finally integrating themes and responses (Kumar, 2014).

According to Cresswell (2018), the final step in qualitative data analysis is making interpretation of the data, highlighting the meaning of data, lessons learned and possible recommendations for further improvement and amendment.

Although the qualitative data was correlated with quantitative data, the researcher exclusively interpreted the meaning of data and made possible recommendations for further improvement.

3.8.2 Quantitative data analysis

Du, Davis and Bezuidenhoutet al. (2014) explained that analysing quatitative data includes discovering basic characteristics of the data set, exposing patterns within the data and identifying relationships between the gathered data and external parameters.This type of analysis encompasses calculations and chart drawings undertaken using statistical shareware, analysis packages and specialised survey designs, analysis software and data management and statistical analysis software packages (Saunders et al., 2016). Therefore, the researcher used SPSS, a statistical analysis software package to analyse the quantitative data obtained from the questionnaires for descriptive statistics. Questionnaires were numbered and entered into SPSS and the researcher had to fill in the responses. Questions in the questionnaires were coded and entered into SPSS for analysis. Figures were formulated in SPSS. However, for better designs of these figures, the researcher used Microsoft excel.

3.9 Validity and Reliability

This section focuses on the validity and reliability of the study. According to Fox and Bayat (2012), validity means that a relationship between things is accurately represented by valid measures, whereas reliability on the other hand means that a research done at different times, is consistent and reliable if it supplies the same answer.

3.9.1 Validity

Validity refers to an extent to which the specific concept that the researcher is attempting to measure is reflected by the study (Eriksson & Kovalainen, 2010). In ensuring validity, the researcher triangulated the research results.

Moreover, the researcher did a pre-test first before the actual research, whereby ten (10) students were identified to fill in the questionnaires in order to remove ambiguous questions. These students were not part of the sample which took part in the study. The pre-test proved to be a strong tool, allowing the researcher to rephrase most of the questions after the pre-test. Pre-testing a research instrument in any study is vital as it identifies challenges which come with the wording of questions, appropriateness of the questions' meaning, and establishes whether the respondents' interpretation would be different in order for the researcher to make it clear and unambiguous before collecting data (Kumar, 2014).

An ambiguous question is defined as a question that contains more than one meaning and that can be interpreted differently by different respondents (Benedettelli, 2013).

After the pre-testing process, an option was made in the questionnaires to allow respondents to specify other information that was not provided *"any other, please specify"* and space was created.

Additionally, the researcher picked up that there were no directives on answering questions with more than one answer, which brought confusion to the respondents. In this case, instructions were added to the questions, to be exact "*please tick any applicable*" in order to guide respondents in answering questions with ease. No ambiguous questions were picked up by the researcher after the pre-test.

3.9.2 Reliability

Saunders, Lewis and Thornhill (2016) stated that reliability lies on consistence of findings yielded by data collection techniques. Babbie (2010) similarly states that reliability of any research is based on the dependability of data, if the same results will be made should the measurements be made again and again. Simplifying the above, reliability is centred on an idea that if the research is to be done several times, it is considered reliable if it gives the same and exact results. The researcher ensured a consistent environment for participants and made sure that participants understood the questions by first explaining them before completion, by so doing, the researcher believed that it could minimise errors and give reliable data. Reliability was further achieved by documenting the research process thoroughly and reporting findings honestly.

3.10 Evaluation of methodology

This section evaluates the research methodology used for this study, consequently informing the reader what worked and what did not thrive smoothly with the methodology of the study.

An evaluation of the methodology chapter is believed to assist the researcher in avoiding drawbacks, particularly where there were problems with the methodology, should there be replication of the same study (Nengomasha, 2009).

In spite of the successes of survey questionnaires used in this study, the questionnaires took participants a lot of time than expected, resulting to the researcher spending more time collecting data as the questionnaires were self-administered. Additionally, the researcher collected questionnaires from one student to another, to go through and ensure all pages were completed and those that were not completed were given back to participants while the researcher was collecting for them to rectify.

Furthermore, the class setup did not allow the researcher to have a one on one session with the participants, which was going to be ideal. Thus, the researcher recommends that other scholars look into this. Moreover, interviews took place during working hours and it was difficult scheduling interviews due to the researcher and librarians' work commitment.

3.11 Summary

This chapter looked at the research design employed in this study. In addressing the objectives effectively, the researcher used a mixed methods approach. The philosophical assumptions which informed the study were discussed. This study was informed by the pragmatic paradigm. The population of the study comprised of students and librarians at UNAM. Librarians were selected using purposively sampling, whereas quota sampling was used for students. Data collection methods were interviews and survey. Data collection instruments were questionnaires for the survey and semi-structured interview guides for the interviews. Content analysis was used to analyse qualitative data, while IBM SPSS was used for generating descriptive statistics for quantitative data. The chapter addressed issues of validity and reliability and an evaluation of the research methodology was provided. The next chapter is on data analysis and presentation.

CHAPTER FOUR

DATA ANALYISIS AND PRESENTATION

4.1 Introduction

This chapter presents both data collected from questionnaires with students and interviews with UNAM librarians. Data gathered from the questionnaires was first coded, entered into IBM SPSS and later analysed via descriptive statistics using the same software and was further displayed in charts from Microsoft Excel. According to Fox and Bayat (2012), descriptive statistics reduce set of data and make interpretation easier by using method design and statistical techniques. Percentages were rounded off to the nearest number, and the researcher presented direct quotes from participants. Additionally, data obtained from interviews was analysed through content analysis, and presented in the form of descriptive narrative and some selected direct quotes from the participants. Data gathered from interviews was meant to corroborate the questionnaires data, hence it was integrated with quantitative data concurrently.

The study had a sample of 372 students and 4 librarians. The librarians were purposely selected, because of the knowledge of the subject matter being studied. The researcher managed to get all the 372 questionnaires back and managed to interview the 4 librarians, as a result accomplished 100% response rate. Therefore, this chapter presents the quantitative data which was collected from students and qualitative data from librarians.

Data is presented under the following headings as drawn from the research objectives and integrates quantitative and qualitative data: students' views on accessing library e-resources using smartphones, e-resources students wished to access via mobile smartphones, library e-resources available to students, enablers and barriers to students' use of smartphones to access e-resources; and suggestions on how to enhance access of the library e-resources through smartphones.

4.2 Demographic data

The demographic data presents students' gender and year of study as presented in the figures below.

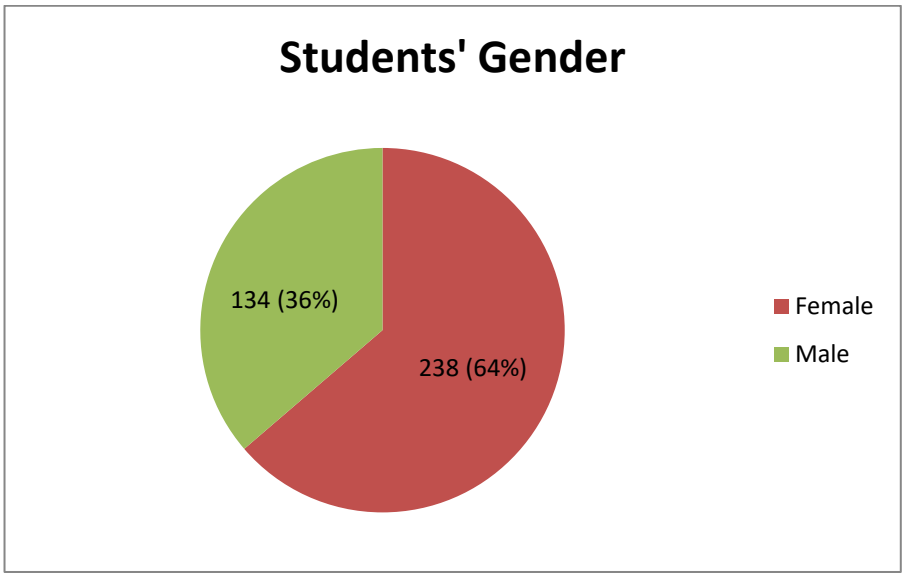

Figure 4.1. Students' gender

Figure 4.1 above shows that the study had more female participants 238 (64%), compared to male participants who were only 134 (36%). The participants' year of study is showed in figure 4.2 below.

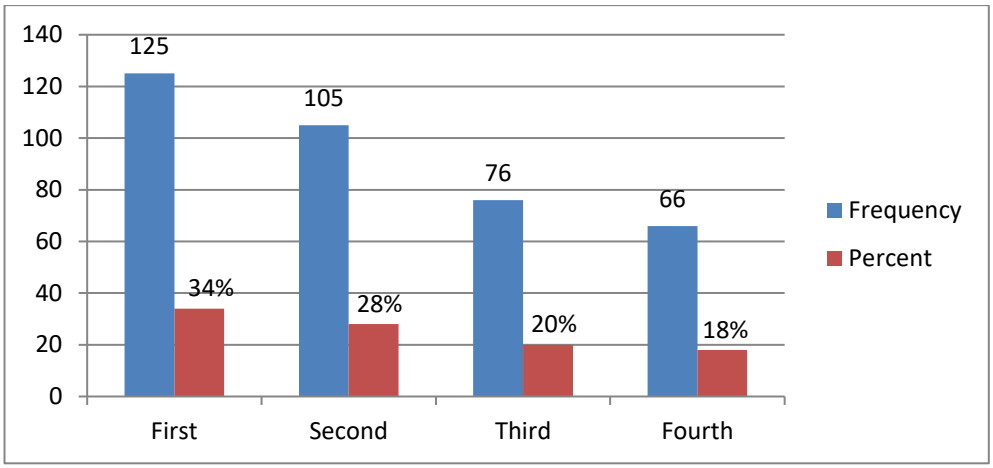

Figure 4.2 Students' year of study

The figure above shows a higher number of first years 125 (34%) who participated in the study, followed by 105 (28%) second years, 76 (20%) second years and the lowest was 4th years with 66 (18%) of participants. This is however not surprising; given that it speaks exactly to the sample that the study aimed for the study.

4.2 Students' views on accessing library e-resources using smartphones

This section presents data on types of phones students had; whether students had access to someone else's smartphones; whether students were aware of library e-resources; how students got to know library e-resources and an extent to which students were awareness of accessing library e-resources using smartphones. It further reveals data on an extent to which students were more likely to use smartphones to access library e-resources than any other mobile devices and lastly the extent to which there was a need for the library to create awareness of library e-resources. Figures 4.3 shows the types of phones students had.

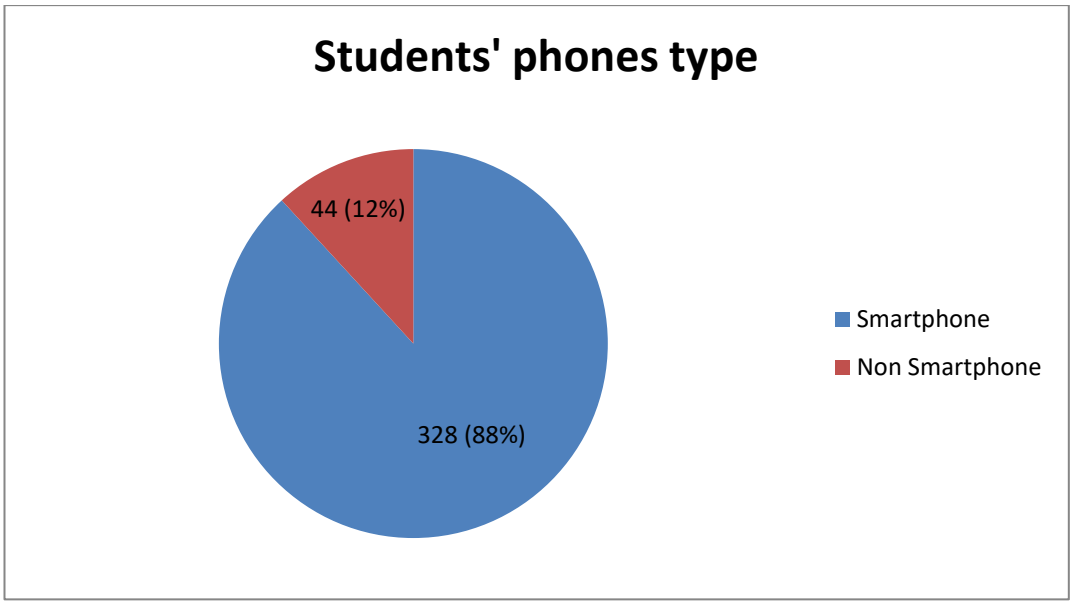

Figure 4.3 Types of phones students had

Figure 4.3 above indicates that that majority 382 (88%) of the participants had smartphones, and only a small number (44 =12%) did not have smartphones. The researcher went further to ask whether the participants had access to someone else's smartphones and these results are presented in figure 4.4 below.

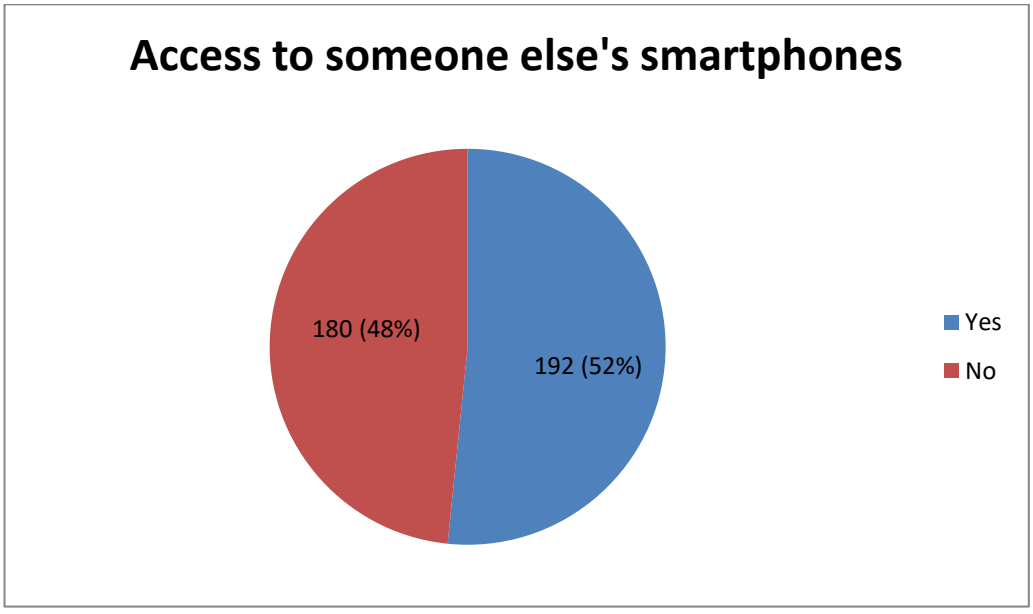

Figure 4.4 Students' access to someone else's smartphone

Although the majority of participants owned smartphones as indicated in figure 4.3, figure 4.4 still shows that the majority 192 (52%) had access to other people's smartphones compared to 180 (48%) who did not have access to someone else's smartphones. Students were further asked whether they were aware of e-resources. Figure 4.5 below shows the responses.

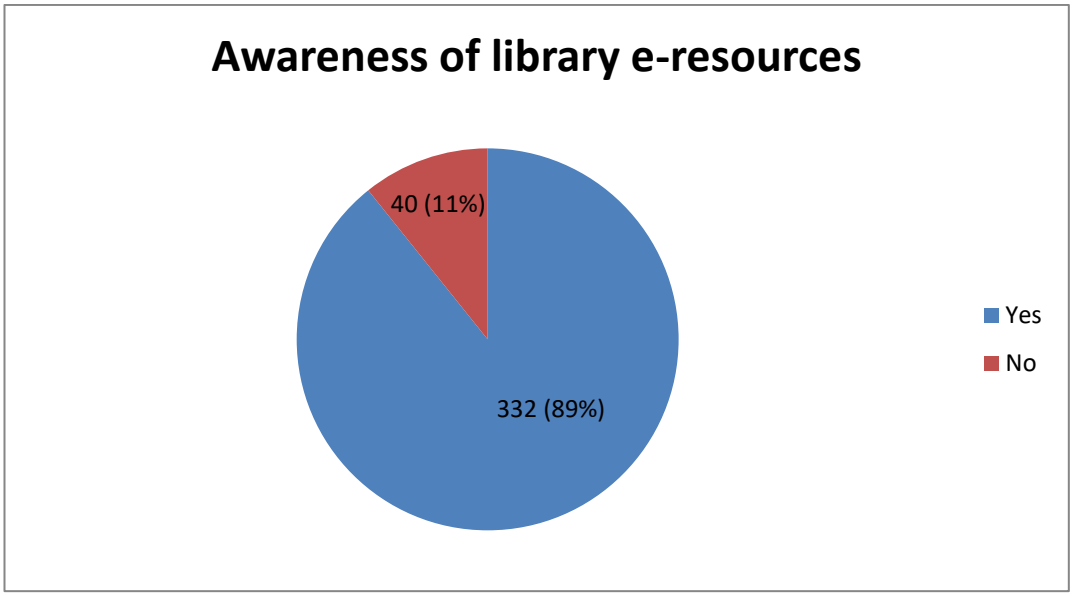

Figure 4.5 Awareness of library e-resources

Figure 4.5 reveals that the majority 332 (89%) of the participants were aware of library e-resources compared to 40 participants (11%) who were not aware of the e-resources. The same question was posed to staff members of which they confirmed that students were aware of e-resources, however not all knew that they can be accessed via smartphones. Staff members highlighted that students mostly realised that they could use their smartphones when computers are fully occupied in the library and when the campus Wi-Fi is down. In essence, Librarian B indicated that some students did not explore their smartphones to the fullest including accessing e-resources, instead they only use internet for social media.

Stating that “I would like to believe that some students are not aware that they can use their smartphones to access e-resources, because a student will wait for a computer for almost an hour while having a smartphone until you inform this student to use his/her smartphone”. The next figure below shows how students got to know e-resources.

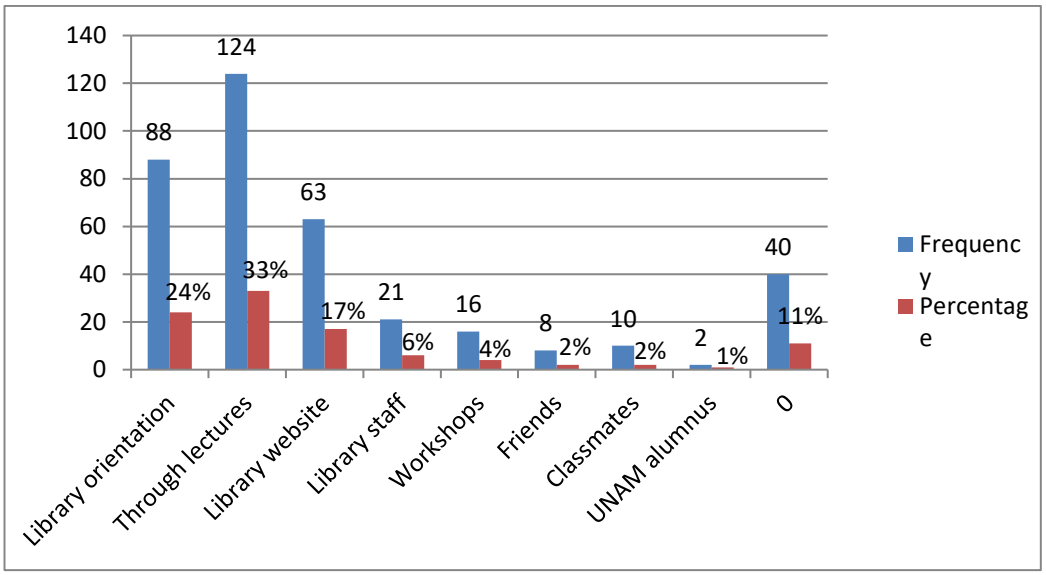

Figure 4.6 Knowing about library e-resources

Figure 4.6 above shows that, among the 332 (89%) participants who indicated that they were aware of library e-resources, as indicated in Figure 4.5, the majority, 124 (33%) got to know about them through lecturers, followed by 88 (24%) who got to know about them through library orientation and 63 (17%) through library website. 21 (6%) got to know about them via library staff, 16 (4%) through workshops, 10 (2%) via classmates, 8 (2%) through friends and 2 (1%) through the UNAM alumni respectively. Figure 4.7 below shows the level of awareness of using smartphones to access library e-resources.

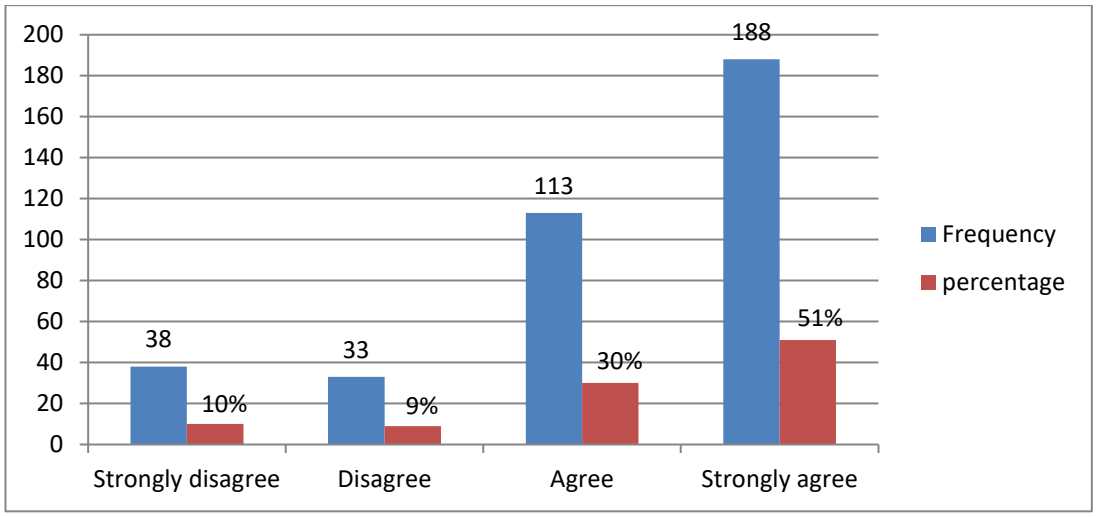

Figure 4.7 Awareness of accessing library e-resources via smartphones

Figure 4.7 above indicates that 188 (51%) strongly agreed and 113 (30%) agreed that they were aware that they could access library e-resources using smartphones, totaling to 301 (81%) who were in agreement. In contrast, only 33 (9%) disagreed and 38 (10%) strongly disagreed that they were aware that smartphones could be used to access library e-resources. The figure below indicates how students responded to whether they would prefer to use smartphones to access library e-resources than any other mobile device.

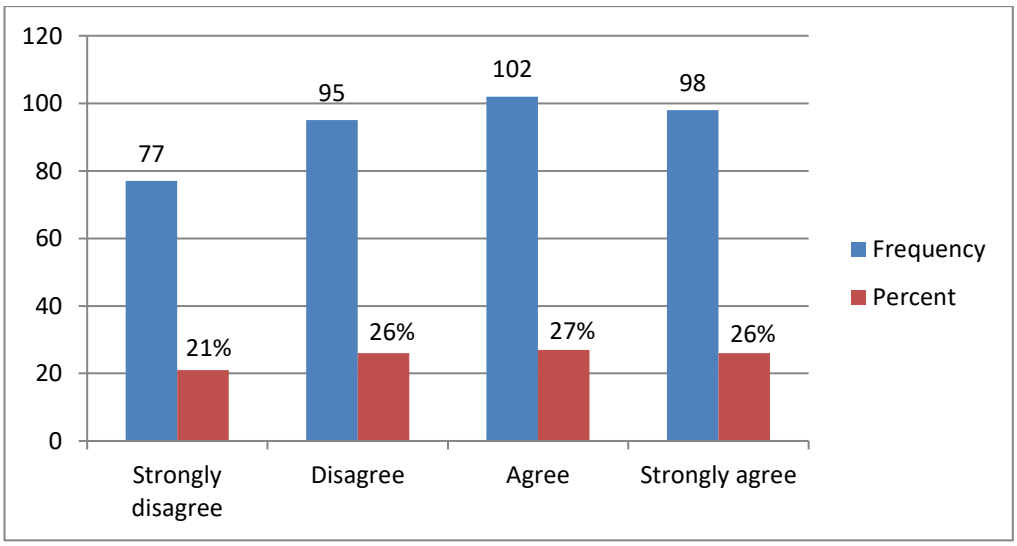

Figure 4.8 Likeliness of using smartphones to access library e-resources

As indicated in Figure 4.8 above, 102 (27%) agreed and 98 (26%) strongly agreed, totaling to the majority of 200 (53%) who said they were more agreeable to using smartphones than any other devices to access library e-resources. This was compared to 77 (21%) who strongly disagreed and 95 (26%) who disagreed, amounting to the minority, 172 (47%) who did not prefer the use of smartphones to access e-resources than any other devices.

The figure below shows whether there was a need for the library to create awareness on library e-resources.

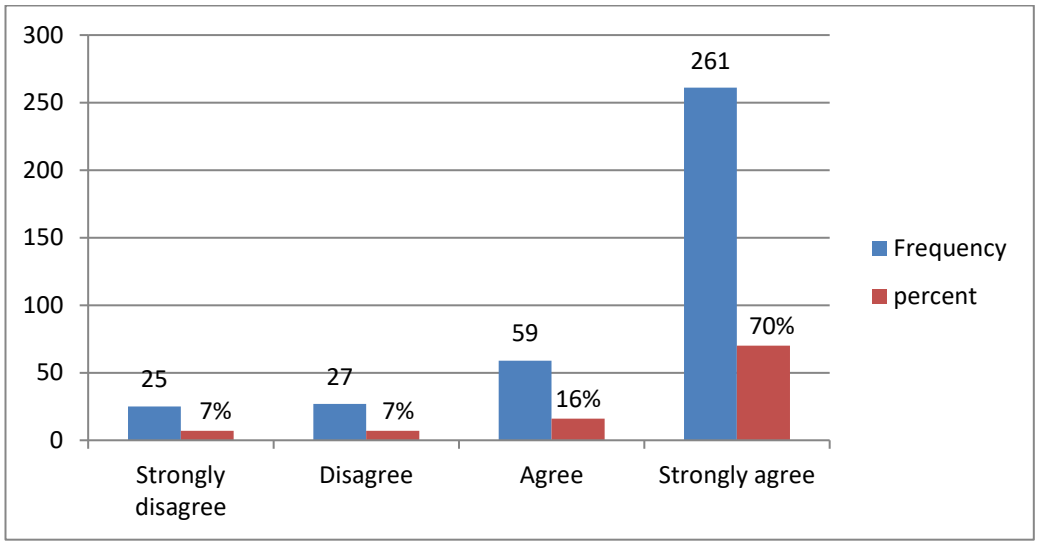

Figure 4.9 A need for the library to create awareness on library e-resources

Figure 4.9 above shows that 261 (70%) strongly agree and 59 (16%) agree, totaling 320 (86%) who agreed that there was a need for library to create awareness about library e-resources. However, minority of 25 (7%) strongly disagreed and 27 (7%) participants disagreed with the statement. Librarians also concurred with students, highlighting in their suggestions that although the library has tried to create awareness about library e-resources.

This entails that there is still a need to create more awareness on the library e-resources and mostly on how to access library e-resources using their smartphones.

4.3 Electronic resources students wished to access via smart phones

Another study's objective was to identify library e-resources that students wished to access through smartphones. In addressing this objective, some of the questions' students were asked were: whether students had accessed library e-resources via smartphones; how often they accessed e-resources; and the library e-resources which students wished to access via smartphones. Figures 4.10 – 4.12 below show responses to the aforementioned questions.

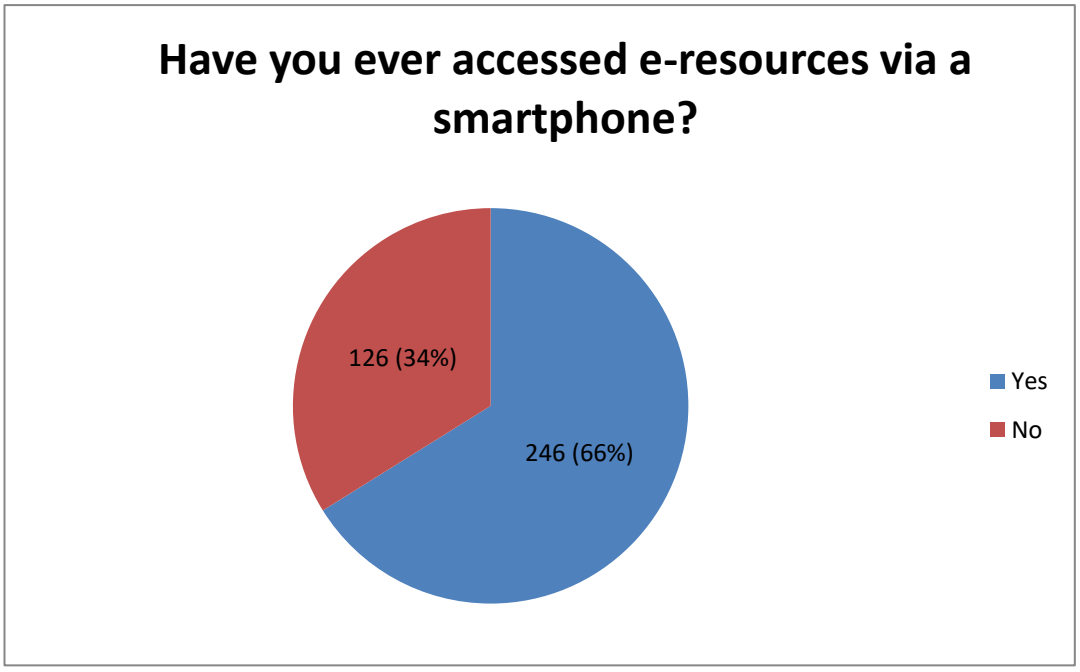

Figure 4.10 E-resources accessed via smartphones

The majority, 246 (66%) of the respondents, as shown in Figure 4.10 above indicated that they had accessed library e-resources via smartphones, compared to 16 (34%) who indicated that they had never accessed library e-resources via smartphones.

Figure 4.11 below shows how often students accessed library e-resources using smartphones.

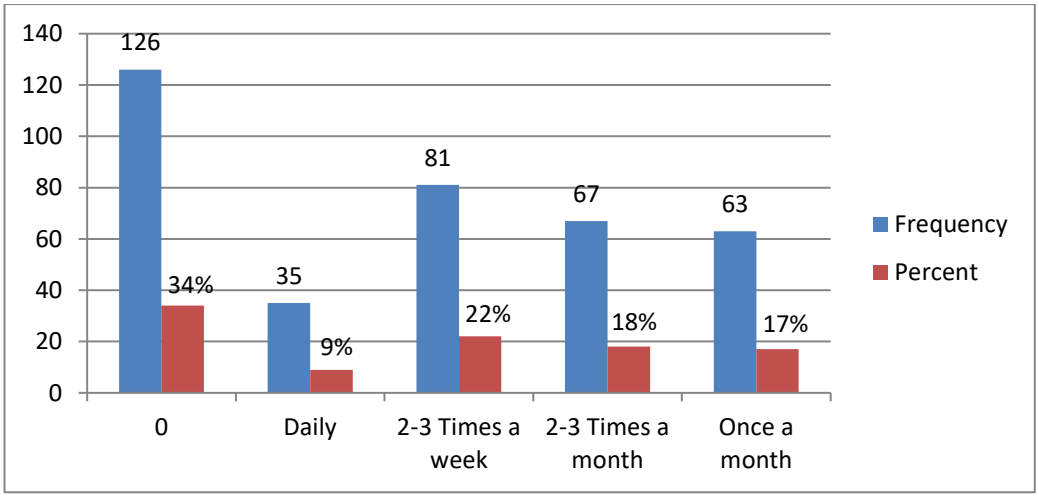

Figure 4.11 Frequency of students' access to e-resources via smartphones

Figure 4.11 above shows that 246 (66%) participants who indicated that they had accessed e-resources via smartphones, the majority, 81 (22%) participants had accessed them 2-3 times a week, 67 (18%) 2-3 times a month, 63 (17%) once a month and only 35 (9%) accessed daily.

Figure 4.12 below shows the types of e-resources students wished to access with smartphones.

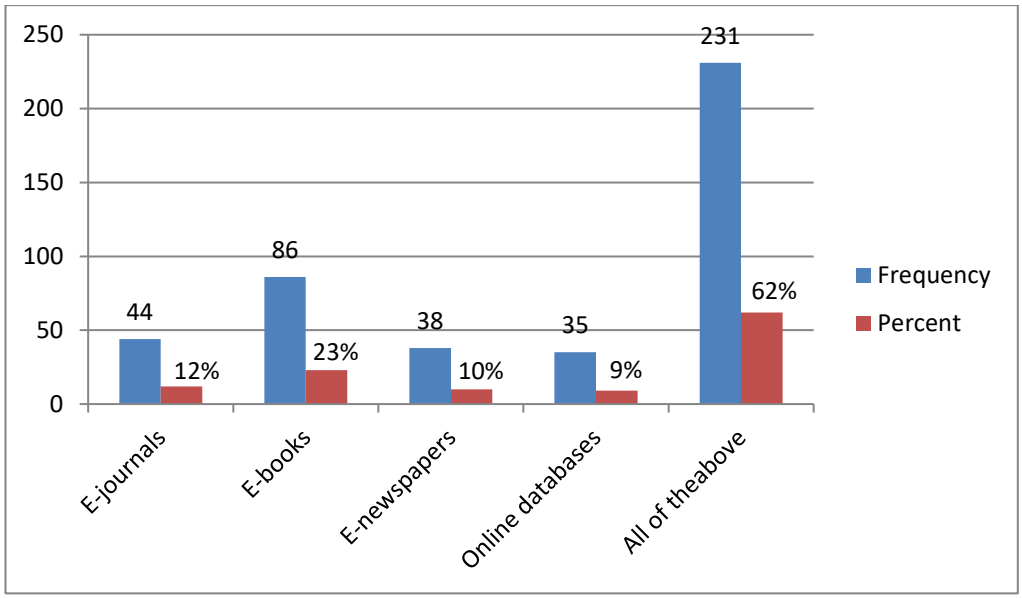

Figure 4.12 E-resources students wished to access with smartphones

Figure 4.12 above shows that 44 (12%) participants wished to access e-journals, 86 (23%) e-books, 38 (10%) e-newspapers, 35 (9%) online databases and 231 (62%) wished to access all of the listed above-resources. This was confirmed by all the librarians who indicated that although the students' needs depended on their specific needs, which differ from subject to subject, most students visit library asking for e-books, followed by e-journals. Librarian B however further stressed that there was a need to create awareness, stating that "students think that for every print book, there is an e-book available and that is not always the case". In response to the question whether they thought students could access e-resources using smartphones, all librarians said yes because librarians themselves had attempted accessing e-resources via smartphones.

4.4 E-resources available which could be accessed by students

This section covers the type of e-resources students could access via smartphones, the extent to which they could access e-resources via smartphones, and finally whether it was convenient for them to use library e-resources using smartphones. Figure 4.13 below shows the type of e-resources students could access.

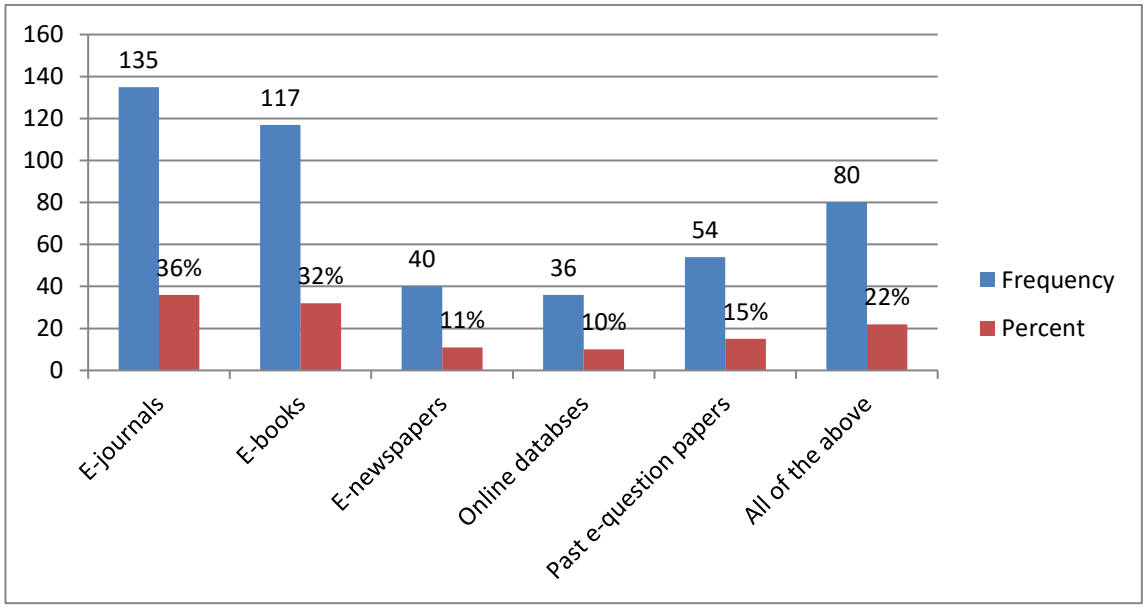

Figure 4.13 Type of library e-resources students could access

From figure 4.13 above, it came to light that 135 (36%) of the respondents could access e-journals, 117 (32%) e-books, 40 (11%) e-newspapers, 36 (10%) online databases, 54 (15%) past examination papers and 80 (22%) could access all of the above. Librarians were also asked the type of e-resources the university provided, of which they all confirmed e-journals, e-books, e-conference papers, and e-past examination papers. They further highlighted that, the university was busy digitising print content to be available to students electronically.

Figure 4.14 below shows the extent to which students could access e-journals via smartphones.

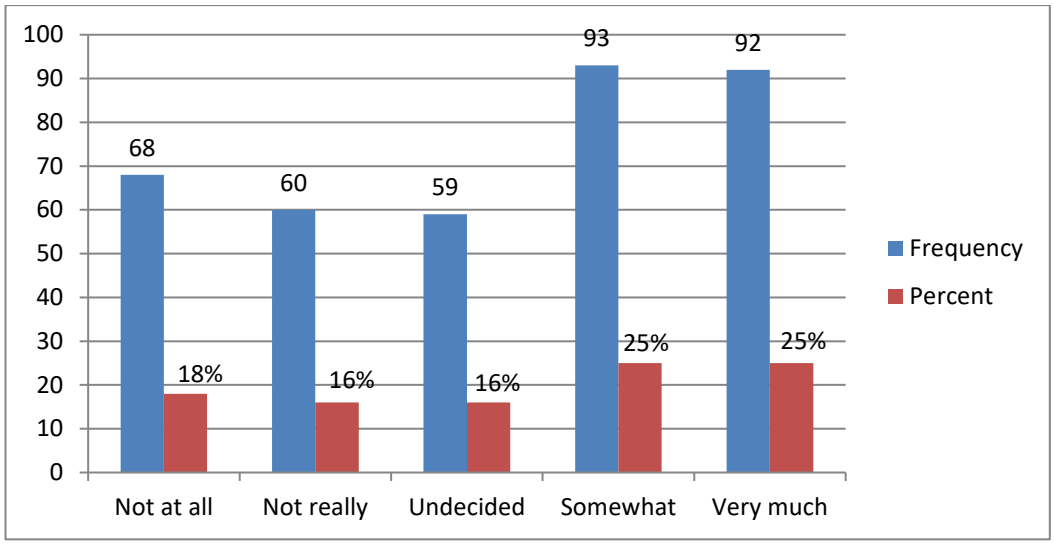

Figure 4.14 An extent to which students could access e-journals

Figure 4.14 above shows that 92 (25%) of participants accessed e-journals very much, 93 (25%) somewhat, 59 (16%) were undecided, 60 (16%) not really and 68 (18%) had not accessed-journals at all.

Figure 4.15 below shows the extent to which the students could access the e-books via smart phones.

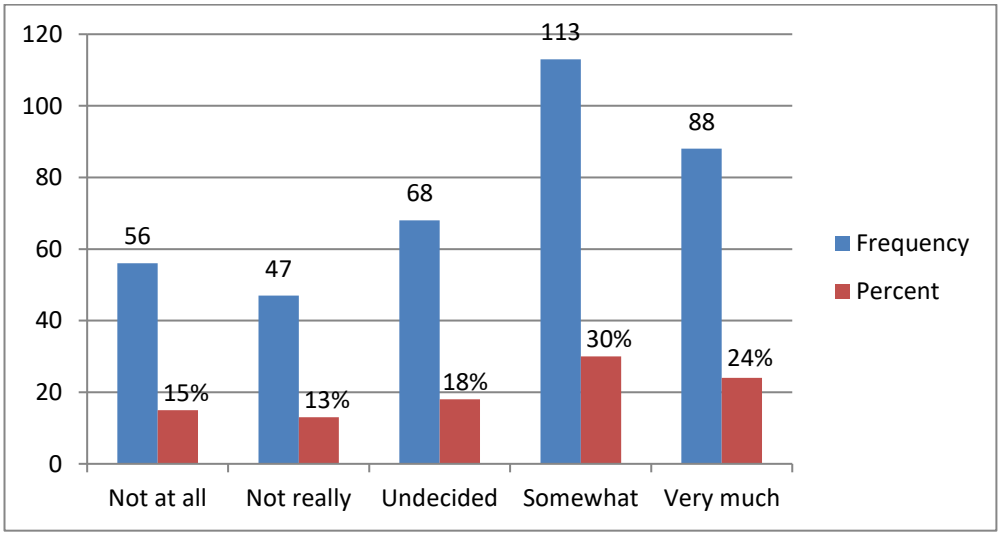

Figure 4.15 An extent to which students could access e-books

Figure 4.15 above shows that 88 (24%) of participants accessed e-books very much, 113 (30%) somewhat, 63 (18%) were undecided, and 47 (13%) not really and 56 (15%) not at all.

Figure 4.16 below shows the extent the students could access the e-newspapers via smartphones.

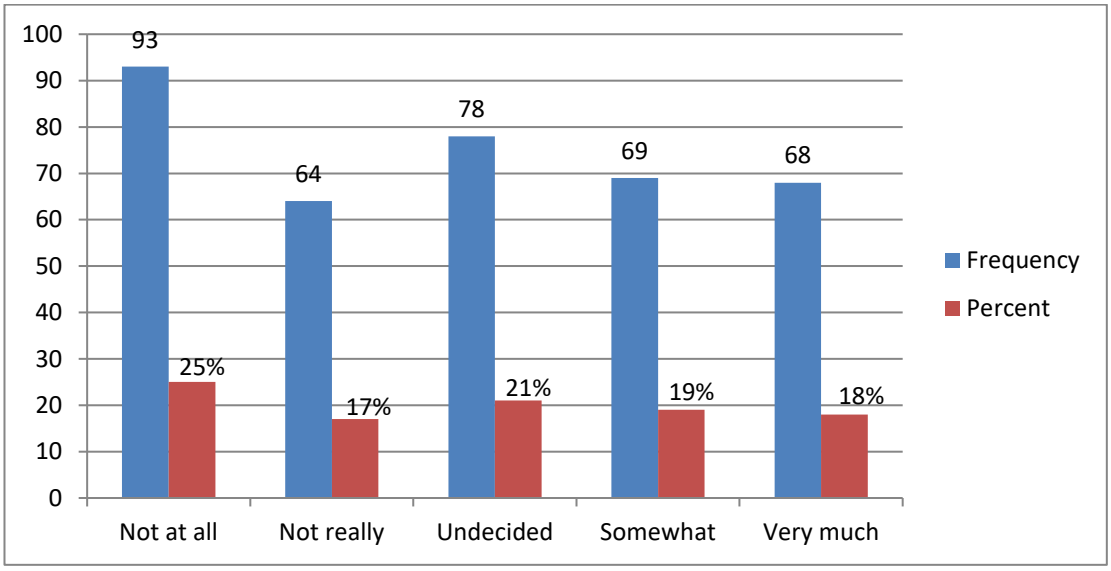

Figure 4.16 An extent to which students could access e-newspapers

As indicated in Figure 4.16, only 68 (18%) participants could access e-newspapers very much, 69 (19%) somewhat, 78 (21%) were undecided, 64 (17%) not really and the majority, 93 (25%) not at all.

Figure 4.17 below shows an extent student could access online databases via smartphones.

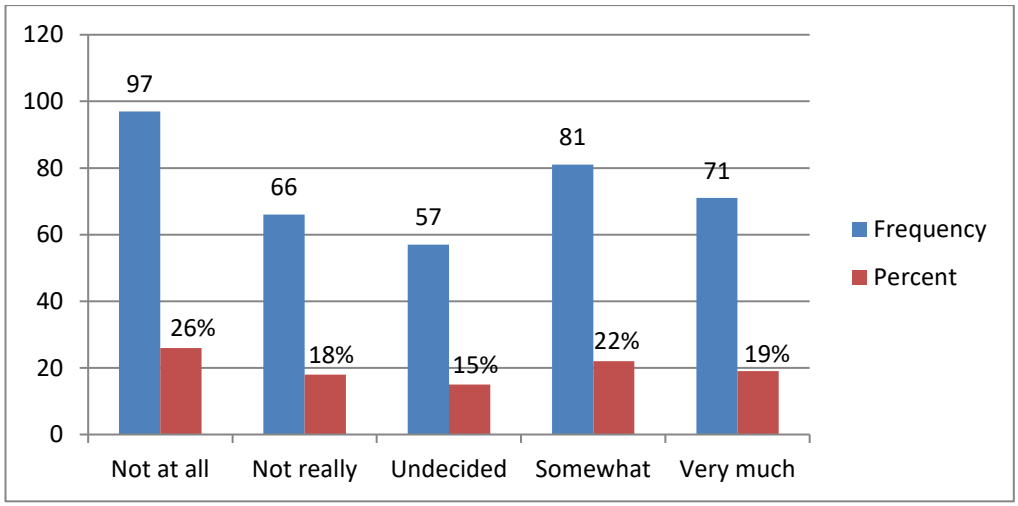

Figure 4.17 An extent to which students could access online databases

Figure 4.17 above shows that 71 (19%) participants accessed online databases very much, 81 (22%) somewhat, 57 (15%) undecided, 66 (18%) not really and majority 97 (26%) not really.

Figure 4.18 shows whether it was convenient for students to use smartphones to access e-resources.

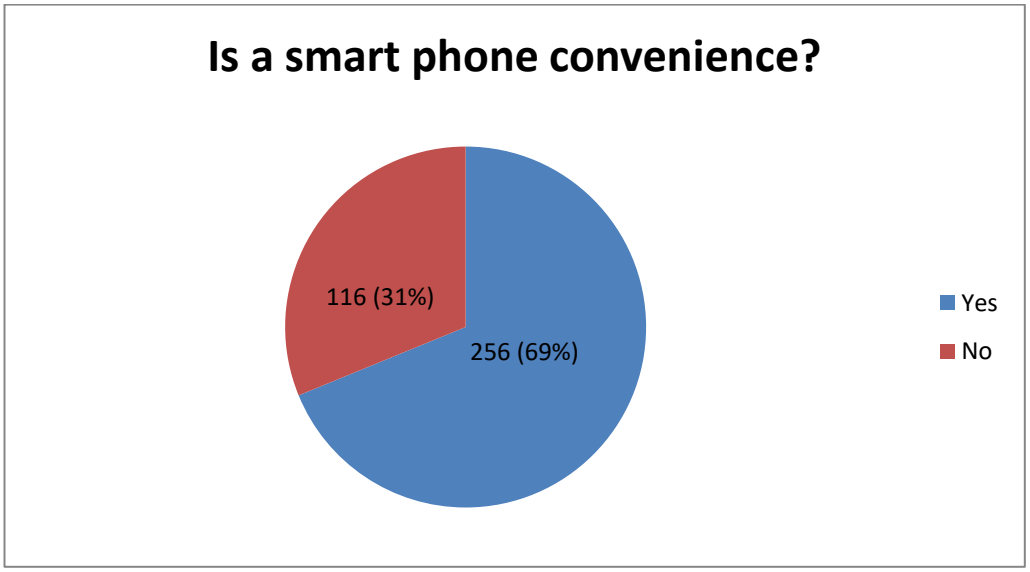

Figure 4.18 Students' convenience for using smartphones to access e-resources

The majority, 256 (69%) of the participants found it convenient to use smartphones to access e-resources, while minority, 116 (31%) participants indicated that it was not convenient for them to use smartphones to access e-resources. The same question was also posed to librarians who confirmed that it was convenient for students to use smartphones to access e-resources using smartphones, provided that students had logging in credentials. Figure 4.19 below shows why students considered the use of smartphones convenient to access e-resources.

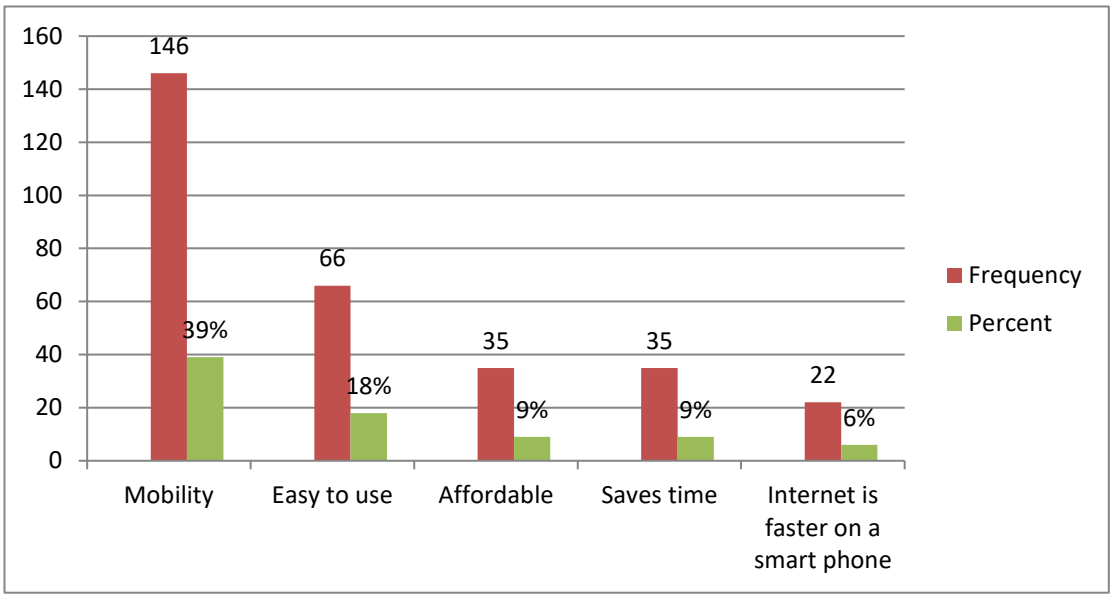

Figure 4.19 Reasons for convenience of using smartphones to access e-resources

As indicated in Figure 4.19 above, students found using smart phones convenient because of its mobility 146 (39%), easy to use 66 (18%), affordable 35 (9%), saves time 35 (9%), and because internet is faster on a smart phone 22 (6%). Librarians confirmed the above, highlighting that smartphones are reliable, and students can carry them wherever they go. They further stated that not all students had laptops and the Library could not cater for them all at their convenient times.

Librarian B added, “A smart phone is a powerful tool in an academic environment in advancing your life”, while Librarian C said “a smartphone serves as a first aid tool, because students who don’t have computers and laptops can use smartphones to access e-resources at their convenience”.

Figure 4.20 below shows the preference of using smart phones to access e-resources.

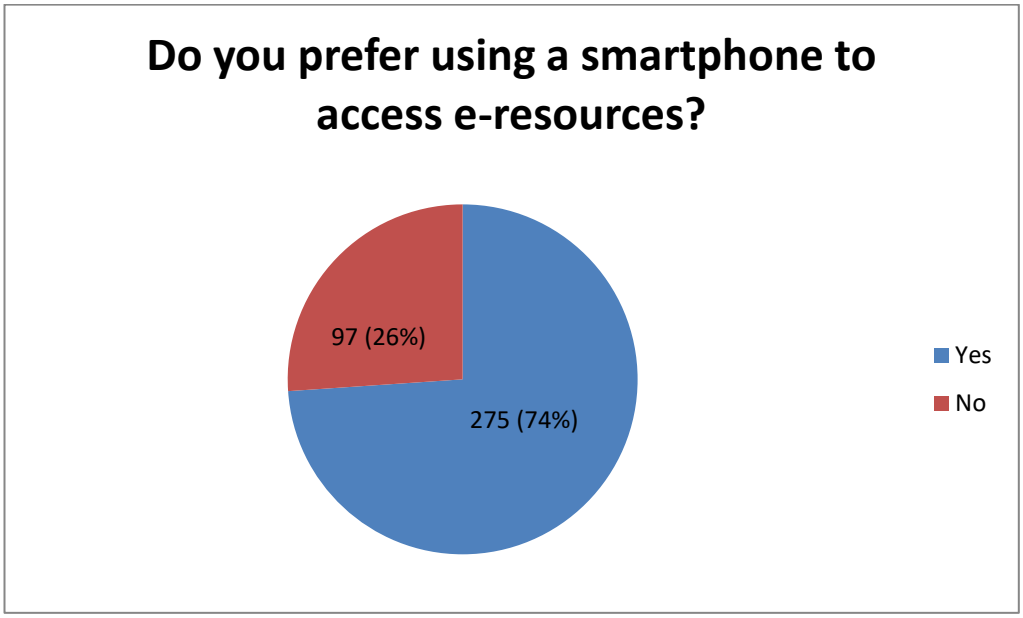

Figure 4.20 Students’ preference of using smartphones to access e-resources

From figure 4.20 above, majority (275 = 74%) of students preferred using smartphones to access e-resources, while 97 (26%) did not. The objective below looks at the enablers and barriers of students’ accessing e-resources via smartphones.

4. 5 Enablers and barriers to accessing e-resources using smartphones by students

One of the study's objectives was to determine enablers and barriers to the use of smartphones by students to access e-resources. Figures 4.21 and 4.31 below show factors that can enhance or hinder the use of smartphones to access e-resources.

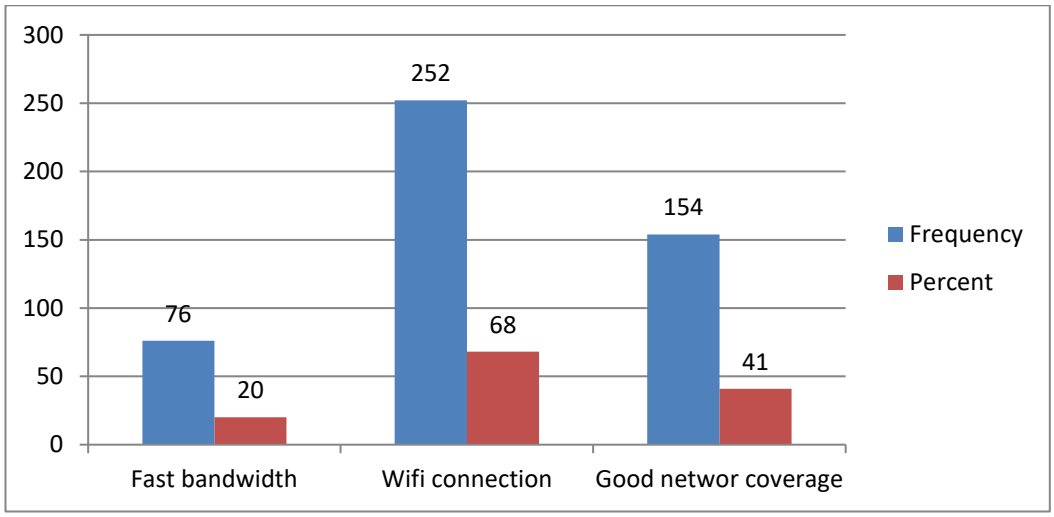

Figure 4.21 Factors that enhanced the use of smartphones to access e-resources

Figure 4.21 above indicates that majority, 252 (68%) of participants believed that Wi-Fi connection could enhance the use of smartphones to access e-resources, followed by good network coverage 152 (41%) and fast bandwidth with 76 (20%). In conformity with what the students said, the librarians indicated the following factors: fast Wi-Fi, good network coverage, good bandwidth and well skilled students on how to access e-resources with smartphones

Figure 4.22 below shows challenges students faced when accessing e-resources via smartphones.

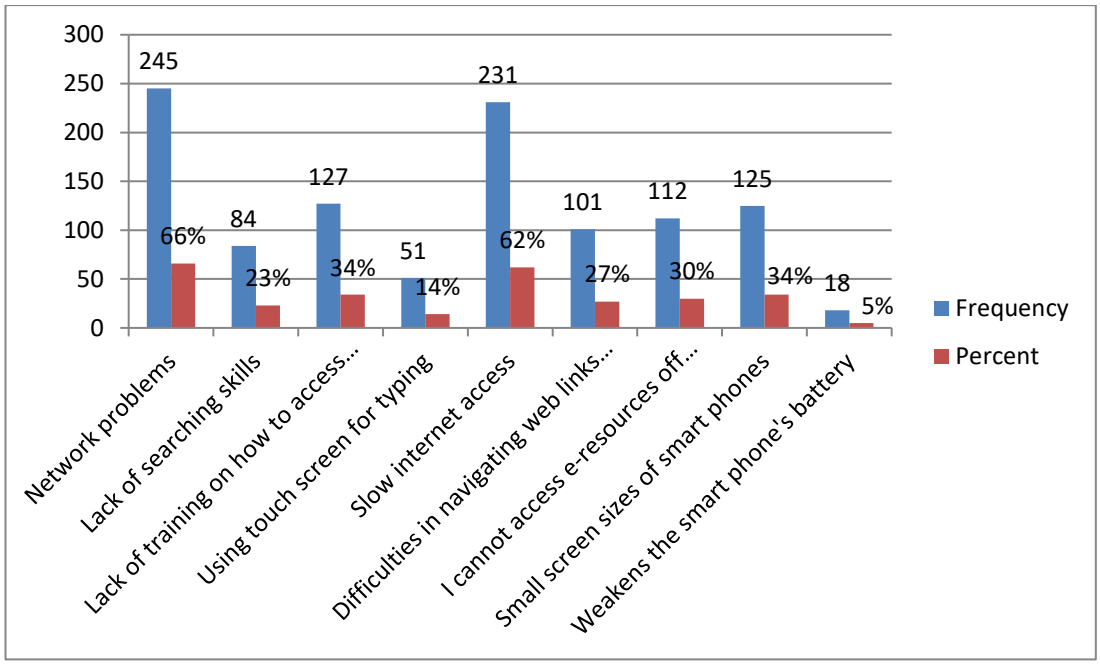

Figure 4.22 Challenges students face when accessing e-resources via smartphones

Figure 4.22 shows that network problems were the biggest challenge with 245 (66%) responses, followed by slow internet 231 (62%), lack of training on how to access e-resources 127 (34%), small screen sizes of smart phones 125 (34%), no access off campus 112 (30%), difficulties navigating web links through smart phones 101 (27%), and lack of searching skills 84 (23%). Fifty-one (51) (14%) respondents said that it was challenging using a smartphones' touch screen for typing and 18 (5%) participants said it weakened smartphones' batteries. One of the staff also affirmed the issue of small screens, stating that "some features may be hidden due to the phone size". All in all, staff were of the opinion that lack of skills on how to access e-resources and awareness of using smartphones to access e-resources, slow and unreliable Wi-Fi, and some type of smartphones students used could hinder access.

Figure 4.23 below shows an extent to which network problems affected the use of e-resources via smartphones.

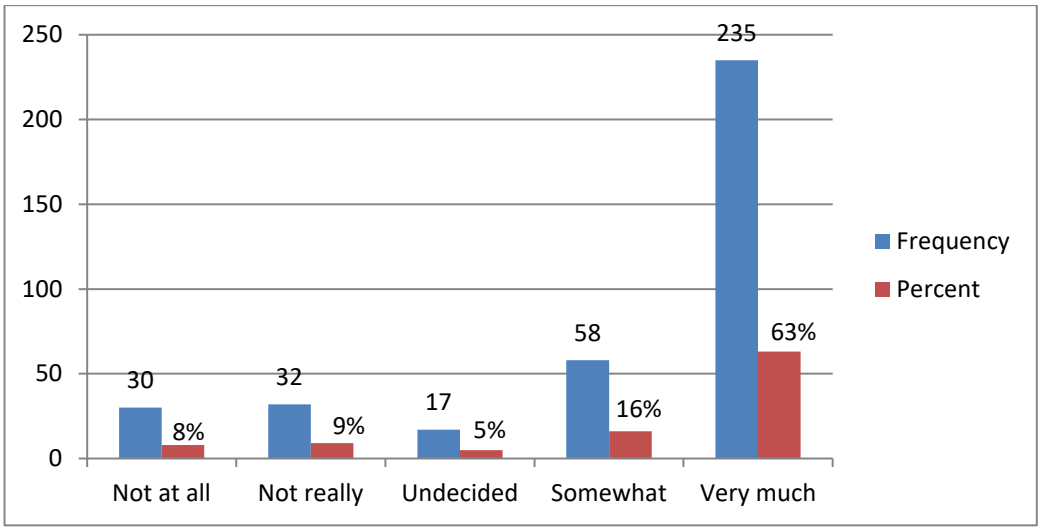

Figure 4.23 An extent to which network problems affected the use of e-resources

Figure 4.23 above shows that 235 (63%) of the respondents indicated that network problems affect the usage of e-resources via smartphones very much, 58 (16%) somewhat, 17 (5%) undecided, 32 (9%) not really and 30 (8%) not at all.

Figure 4.24 below shows an extent to which lack of searching skills affected the use of e-resources via smartphones.

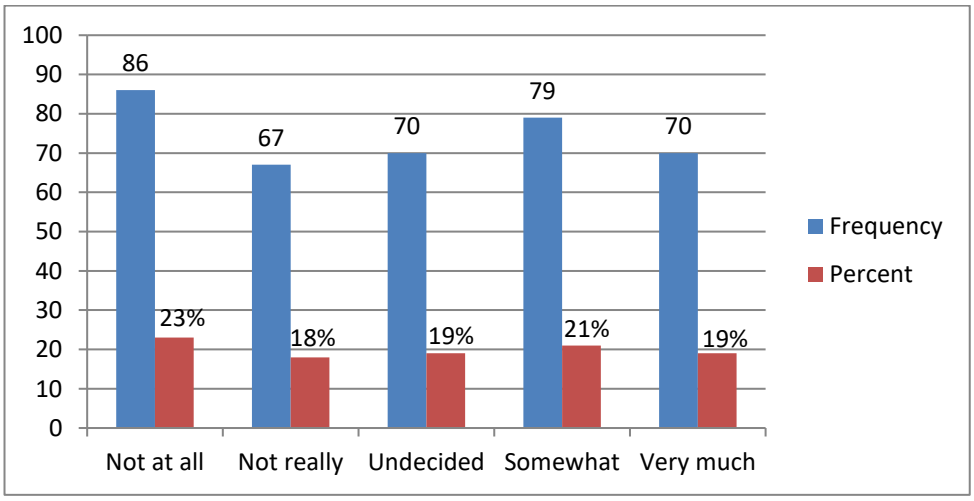

Figure 4.24 An extent to which lack of searching skills could affect the use of e-resources

Figure 4.24 above shows that 70 (19%) of participants indicated that lack of searching skills affected their use of e-resources very much, 79 (21%) somewhat, 70 (19%) undecided, 67 (18%) not really and 86 (23%) not at all.

Figure 4.25 below shows an extent to which lack of training affected access to e-resources via smartphones.

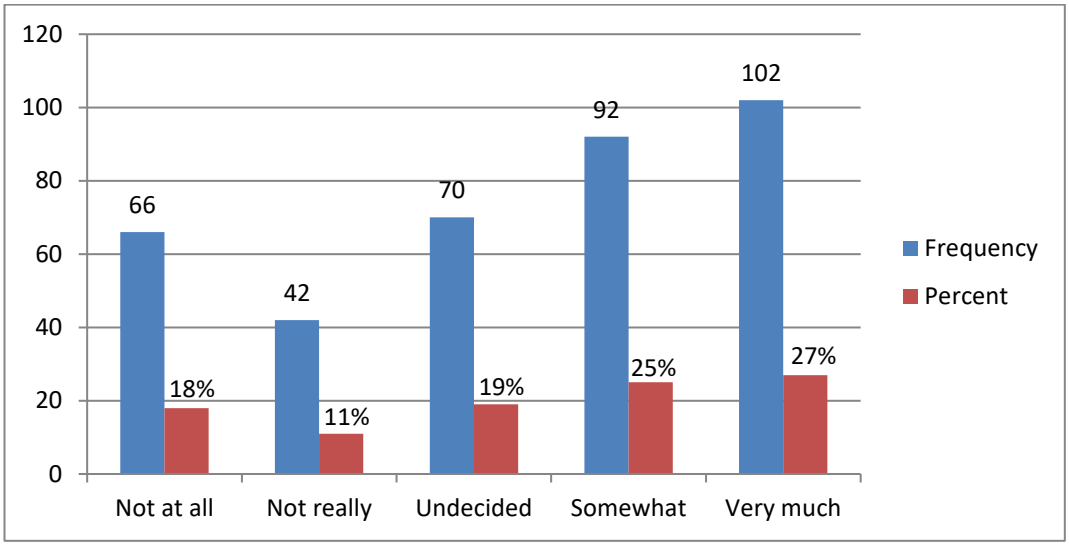

Figure 4.25 An extent to which lack of training could affect the use of e-resources

Figure 4.25 shows that 102 (27%) participants said lack of training affected e-resources' access very much, 92 (25%), undecided 70 (19%), 42 (11%) not really and 66 (18%) said it does not affect an access of e-resources at all. Librarians responded that they were being given continuous training to deliver services through smartphones by the university. Librarian B highlighted an issue of traditional librarians, saying that *"the university has some traditional librarians, however they should continue to learn on the job and embrace technology on daily basis to harness their skills"*.

Librarian C said: *"The university has done its part; librarians are forerunners of information and should be at the forefront to find out gaps on everyday basis"*.

This was supported by Librarian D who said, *"we have skilled librarians; they should just familiarise themselves with the website interface and learn as they assist students*".

The figure below shows how using touch screens for typing could affect the use of smartphones to access e-resources.

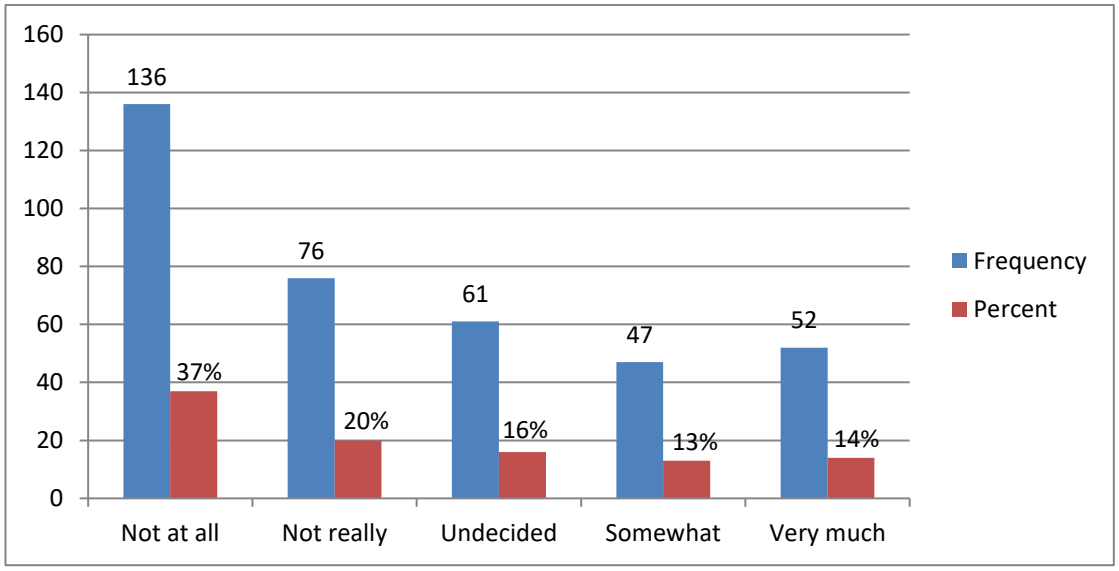

Table 4.26 An extent to which using touch screen could affect the use of e-resources

Figure 4.26 shows that 52 (14%) participants indicated that using touch screens for tying affects e-resources' access very much, 47 (13%) somewhat, 61 (16%) undecided, 76 (20%) not really, and majority 136 (37%) not at all.

Figure 4.27 below shows how slow internet affected the use of smartphones to access e-resources.

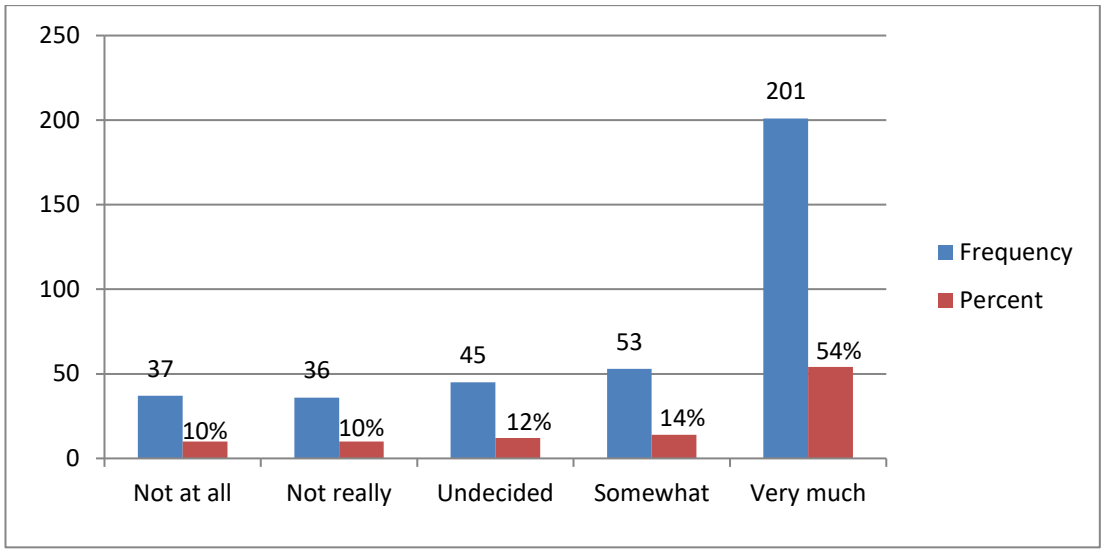

Table 4.27 An extent to which slow internet could affect the use of e-resources

Figure 4.27 shows that majority, 201 (54%) of the participants indicated that slow internet could affect e-resources' access very much, 53 (14%) somewhat, 45 (12%) undecided, 36 (10%) not really, and 37 (10%) not at all.

Figure 4.28 below shows how difficulties is navigating web links through smartphones affected the use of smartphones to access e-resources.

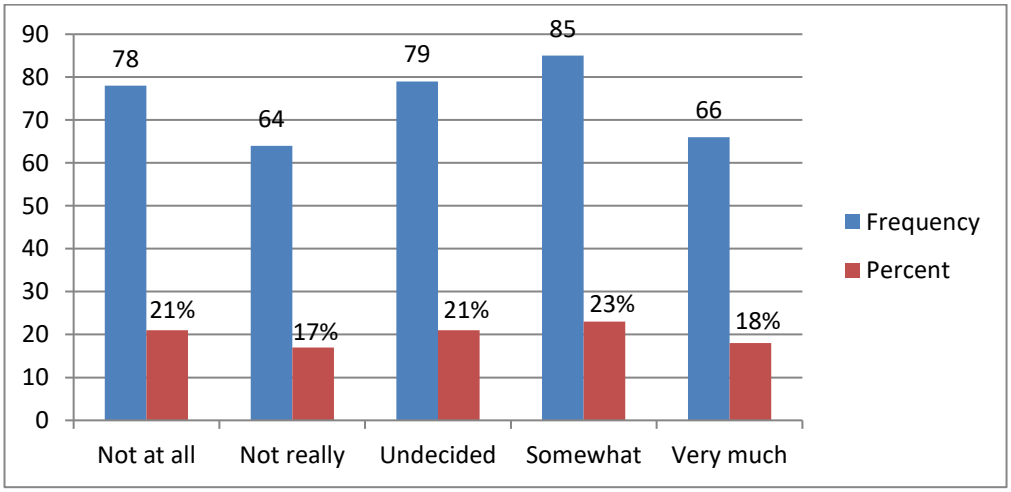

Figure 4.28 An extent to which difficulties in navigating the web the use of e-resources

Figure 4.28 shows that 66 (18%) participants indicated that difficulties in navigating web links through smartphones affected e-resources access very much, 85 (23%) somewhat, 79 (21%) undecided, 64 (17%) not really, and 78 (21%) not at all. The figure below shows how lack of access off campus affected the use of smartphones to access e-resources.

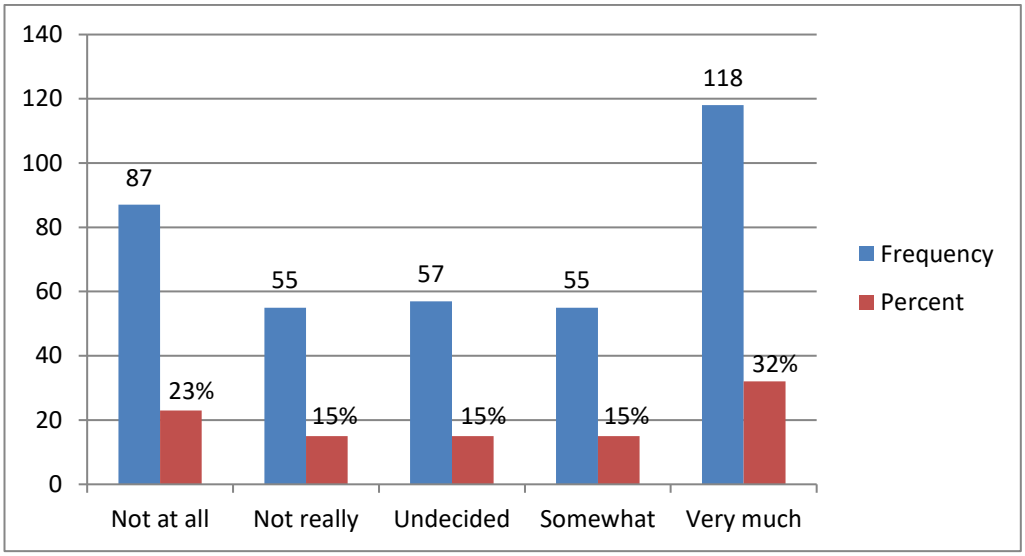

Figure 4.29 An extent on lack of access off campus could affect the use of e-resources

Figure 4.29 shows that 118 (32%) participants indicated that lack of access to off campus affected e-resources' access very much, 55 (15%) somewhat, 57 (15%) undecided, 55 (15%) not really, and 87 (23%) not at all.

Figure 4.30 below shows how small screen sizes of smartphones affected the use of smartphones to access e-resources.

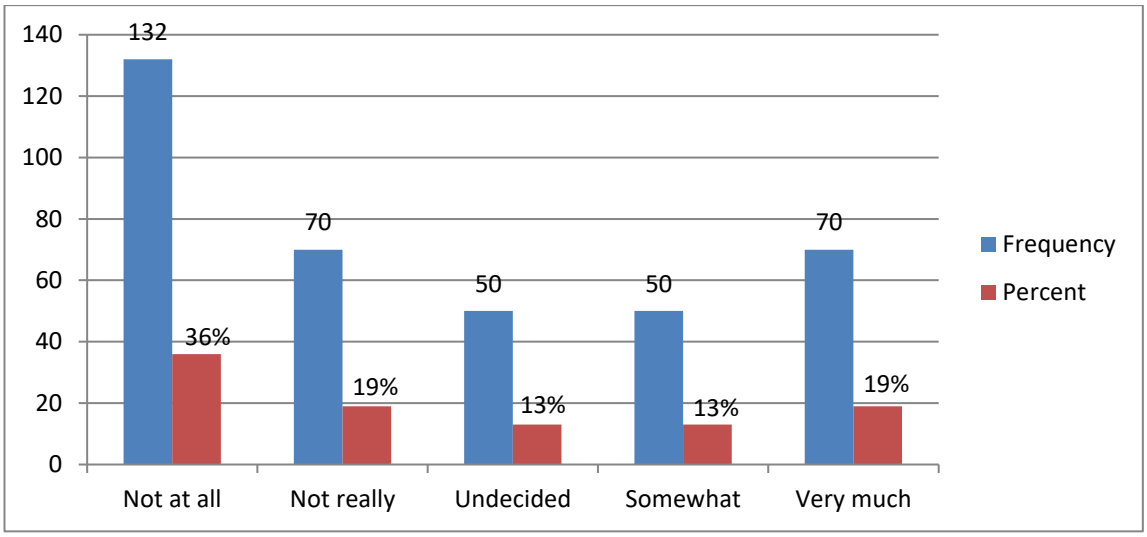

Figure 4.30 An extent to which small screen sizes could affect the use of e-resources

Figure 4.30 shows that 70 (19%) participants indicated that small screen sizes of smartphones affected e-resources' access very much, 50 (13%) somewhat, 50 (13%) undecided, 70 (19%) not really, and 132 (36%) not at all.

4.6 Suggestions on how UNAM Library could enhance the accessibility of e-resources through the use of smartphones

Figure 4.31 shows students' suggestions on how UNAM library could enhance the accessibilities of e-resources through the use of smartphones.

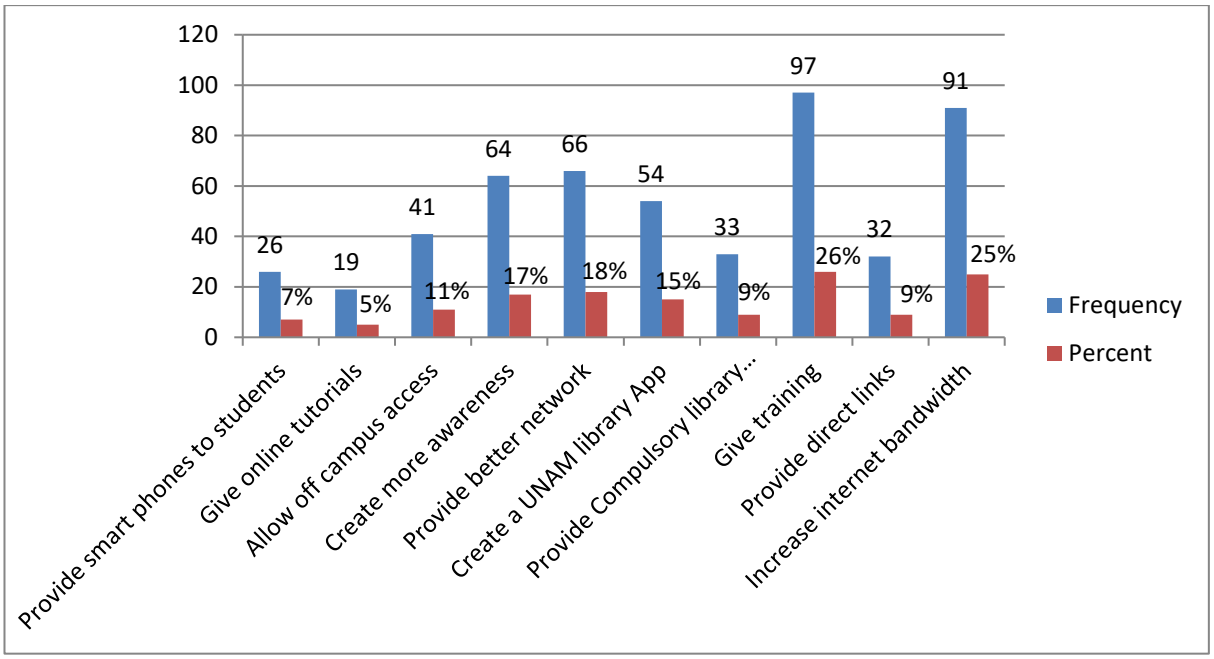

Table 4.31 How UNAM library can enhance the access of e-resources via smartphones.

Figure 4.31 above shows the following suggestions from students on what UNAM could do to enhance access to e-resources by students via smart phones:

- 26 (7%) UNAM should provide smartphones to student;
- 19 (5%) give online tutorials;
- 41 (11%) allow off campus access;
- 62 (17%) create more awareness;
- 54 (15%) create UNAM Library Application (App);
- 33 (9%) provide a compulsory library literacy class;
- 97 (26%) give training;
- 32 (9%) provide direct links, and;
- 91 (25%) increase internet bandwidth.

The librarians' suggestions were not far from what was suggested by students, indicating that although they had been doing awareness, there was still a need to create more awareness and training students especially on how to utilise their phones for access.

Librarian B added that the library should have its own server, increase the bandwidth and ensure effective Wi-Fi on campus. According to Librarian A, "there are the Access and Usability Committee and the Training Committee in place to assist the library" that will help them to map the way forward.

Librarians were also asked if the library had ICT policies in place which support the use of smartphones. Furthermore, librarians indicated that they were not aware of the Library Policy on ICT. However, they were certain that the Computer Center had a policy on ICT because it is the department that deals with all ICT related issues. Librarian A however added that the university had ICT hub on campus for all technological support to students. Being asked whether the university had adequate facilities to facilitate access, all librarians indicated that the university has computer labs for all faculties in addition to computers in the library with IT support. They also indicated that it would be vague to say that the facilities were adequate.

4.7 Summary

The chapter analysed and presented both qualitative and quantitative data that was gathered in this study. The quantitative data from the questionnaires was first coded, entered into IBM SPSS Statistics, analysed via descriptive statistics using the same software and later presented via figures from Microsoft Excel.

Qualitative data from interviews was analysed manually, through content analysis and presented through descriptive narrative, with some direct quotations from the respondents and later integrated with quantitative data. The study revealed that the majority of the participants had smartphones and for those without they had access to someone else's smartphones. It further revealed that students were aware of e-resources and believed that it was convenient to use smartphones to access e-resources, therefore gave preference of using smartphones to access e-resources than any other devices. The following chapter discusses the findings.

CHAPTER FIVE

DISCUSSIONS AND INTERPRETATIONS OF RESEARCH FINDINGS

5.1 Introduction

While the previous chapter analysed and presented data for this study, this chapter discusses and interprets the findings of the study. The importance of data interpretation cannot be overemphasised in research. Leedy and Ormrod (2010) highlighted the importance of data interpretation, emphasising that data interpretation is the essence of research. The interpretation of the research findings is done in comparison to the literature reviewed in Chapter 2, as possible explanations are offered for findings that are corroborate and contradict previous studies. The discussion is done under the following themes drawn from each research objective: students' views on accessing library e-resources using smartphones; e-resources students wished to access via mobile smartphones; library e-resources available to students; enablers and barriers to students' use of smartphones to access e-resources; and suggestions on how to enhance access of the library e-resources through smart phones.

5.2 Types of phones students had

It was evident in this study that most (88%) of the students had smartphones. Similarly, Sharma and Madhusudhan's (2017) after studying the use of mobile devices by Library and Information Science students in central universities of Uttar Pradesh in India also found that a larger number (92%) of the respondents used smartphones. This is a good indication for the study, because for the library e-resources to be accessed by the students via smartphones, students should have smartphones at their disposal.

Although the majority of the students owned smart phones as indicated above, the study revealed that 52% had access to other people's smartphones. This is an indication that although students may not own smartphones to access e-resources, they are more likely to use other people's smartphones to access library e-resources.

5.3 Students awareness of e-resources and use of smartphones to access them

This study revealed that the majority (89%) of students were aware of library e-resources. These are notable findings for this study because students can only adapt to the use of smartphones, if they are aware of these resources. These findings correspond with Gakibayo, Ikoja-Odongo, and Okello-Obura (2013) who established in a study on electronic information resources utilisation by students at Mbarara University Library in Uganda that 92% of students were aware of the e-resources that the library provided. In the same way, a study by Ankrah and Atuase (2018) on the use of electronic resources by postgraduate students of the University of Cape Coast, found that the majority (73%) of the respondents were aware of the available e-resources offered by the University Library. Equally important, Thanuskodi (2012) reported a high rate of e-resources awareness at the University of Annamalai in India.

Librarians however highlighted that not all students knew that they could access e-resources via smartphones. One of the librarians expressed that students did not explore their smartphones to the fullest including accessing e-resources, instead they only used internet for social media. This librarian's statement is supported by Adeleke and Emeahara (2016) who alluded that although the Ibadan University library continued subscribing to e-resources, students surfed the internet more, accessed non-academic resources and checked their emails instead of using the available university electronic resources.

It was clear in this study that amongst the 89% who indicated that they were aware of e-resources, the majority (33%), got to know about e-resources through their lecturers. This was followed by 24% who got to know about e-resources through the library orientation, 21% via library staff, 17% through library website, 4% through workshops, 2% via classmates, 2% through friends and 1% through the UNAM alumni respectively. This clearly shows the significance of lecturers informing their students about the library e-resources in their disciplines.

Library orientation came out to be another good platform to create awareness about e-resources. This could be because during orientation, many of the first year students are keen to know information about the university. Ankrah and Atuase (2018) also found similar results, indicating that students got to know about e-resources via library orientation programmes, which they indicated as one of the efficient ways to create awareness for library e-resources, including workshops, departmental lectures, library guides, library's website, as well as awareness through library staff. Gakibayo et al. (2013) on the other hand, found that students at Mbarara University Library in Uganda got to know about e-resources mainly through their colleagues. Sejane (2017) after studying access to and use of electronic information resources in academic libraries of the Lesotho Library Consortium, pointed out that all 39 (100%) respondents became aware of e-resources through library orientation and training.

Although 89% of the students indicated that they were aware of library e-resources, 86% needed the library to create awareness about library e-resources. Similarly, librarians admitted that, although they had tried to create awareness, much is still needed to be done, especially creating more awareness on how to access e-resources using smartphones. This highlights a need to strengthen the awareness of e-resources amongst students.

The call to create awareness was correspondingly highlighted by Ahmed (2013) when he pointed out that adding open access resources on the university's website can help with sensitising students about e-resources. Although 81% of the students were aware that they could use smartphones to access e-resources, 53% of the students were not likely to use smartphones to access e-resources. This could be associated with challenges that students encountered in accessing e-resources using smartphones. Challenges associated with the use of smartphones highlighted by students in this study were network problems, lack of training on how to access e-resources, small screen sizes of smartphones, no access to e-resources off campus, difficulties navigating web links through smartphones, lack of searching skills, difficulties using smartphones' touch screen for typing and weakening of the smartphones' batteries. George, Maina and Wanangeye (2016) acknowledged that university libraries were failing to implement the use of smartphones to access e-resources primarily due to, internet failure and lack of training of users on how to access e-resource via smartphones. In the same vain, Ankrah and Atuase (2018) highlighted lack of information on how to use e-resources and insufficient search skills.

Even though students indicated that they could use smartphones to access e-resources, librarians opined that most of the students were not aware that they could access e-resources via smartphones. Librarians said they have observed students waiting for computers in the library while having their smartphones which they could equally use to access e-resources. Based on this, the researcher deduces that the librarians got it wrong as students were aware, however they were not likely to access e-resources using smartphones due to challenges stated above. The study further revealed that 69% of the participants found accessing e-resources via the smartphone convenient. Students believed that it was convenient to use smartphones to access e-resources

because of smartphones' mobility convenience with 39%, easy to use 18%, affordable 9%, saves time 9%, and because internet is faster on smartphones 6%.

These findings confirm Ocran's (2017) findings, on perceptions of students on mobile technology based library services at the University of Cape Coast in Ghana, which established that students found it easier to search and access information on smartphones anywhere, which saves time of moving from one location to another in search of learning materials. Similarly, Saxena and Yadav (2013) discovered that students make use of their mobile smartphones in their comfort zones accessing information faster with no orientation and training required and information is accessed anytime. In the same vain, Dukic, Chiu and Lo (2015) emphasised the importance of smartphones' portability arguing that it enables its owner to use it for learning purposes under exceptional circumstances, for example emergency situations. Sharma and

Madhusudhan (2017) also revealed similar findings in a study on the use of mobile devices by library and information science students in central university of Uttar Pradesh in India, also discovered that students use mobile devices to access e-resources for day to day usage of mobile device 85.62%, access to resources anytime 83%, mobile devices' portability 66.01%, and the fact that it saves time 58.82%. The same question was also posed to librarians who confirmed that it was convenient for students to use smartphones to access e-resources using smartphones, provided that students had logging in credentials.

Librarians confirmed the above, highlighting that smartphones are reliable and students can carry them wherever they go. They further stated that not all students had laptops and the Library could not cater for them all at their convenient times.

Undoubtedly, both students and librarians found smartphones convenient to use to access e-resources. This argument is supported by Malathy and Kantha (2013) who argued that library users are familiar with their own mobile devices which aid them to access the information effortlessly anywhere, anytime with no required orientation and training.

This is very significant in this digital age where most universities have gone digital. As a result, this speaks to the Convenience Concept Model, the model that was adopted in this study that is concerned with time and effort spent by users in accessing information. The Convenience Concept Model highlights the significance of using smartphones as mobile applications to access e-resources without difficulty and/or delay. Similarly, Shidi and Terna (2013) highlighted that people are likely to accept the use of technologies through online resources which would easily enhance their job performance without spending too much time and effort. This is essential as users do not need to visit libraries to access the e-resources, therefore becoming convenient for them to access library e-resources at any given time and anywhere around the globe.

The study revealed that 74% of the respondents preferred using smartphones to access e-resources. The high number of preference of using smartphones to access e-resources can be associated to the reasons that students stated when highlighting that smartphones are convenient to use. Those reasons are mobility, easy to use, affordability, saves time, and because internet is faster on smartphones as stated above. In the same way, students have shown positive perception of the usefulness of smartphones in increasing their skills and knowledge (Hossain & Ahmed, 2016).

5.3 E-resources students wished to access via a mobile smartphone

One of the objectives of the study was to assess library e-resources that students wished to access through smartphones. Majority (62%) of the respondents indicated that they wished to access all types of e-resources via their smartphones. This is an indication that students were eager for access and were not limited to the types of e-resources available. However, 23% wished to access e-books, followed by e-journals with 12%, 10% e-newspapers and only 9% wished to access different databases.

This study's findings are in line with Ocran's (2017) findings which revealed that students wished they could access databases, journals, digitised thesis and relevant books using mobile devices and without necessarily visiting the library building. Bushhousen et al. (2013) similarly shared the same sentiments that students liked to access databases and accessing full text journal articles using their smartphones. Librarian B indicated that students thought that for every printed book, there was an e-book which was not always the case. However, Librarian A further pointed out that the University was busy digitising print content to be available to students electronically. These findings highlight the needs for the library to subscribe more e-books and e-journals to satisfy students' needs.

5.4 Library e-resources available for students to access

This section discusses findings on the available e-resources that students could access. The librarians indicated that the university subscribed databases with mostly e-journals and e-books. The university also provided e-conference papers and e-past examination papers. Equally, Tripathi, and Kumar (2014) also discovered that Jawaharlal Nehru University in India subscribed e-journals online databases which provide access to students.

Similarly, Chaputula and Mutula (2018b) revealed that universities in Malawi had a variety of e-resources provided to the students ranging from e-journals, OPAC and institutional repositories of local content which potentially could be utilised with smartphones. It also came to light in the study by Ankrah and Atuase (2018) that the University of Cape Coast in Ghana provided different e-journals and e-books through different databases. These findings are in line with those of Akinola et al. (2018) who found that the University of Ibadan in Nigeria provided different electronic databases.

Even though the university did not subscribe e-newspapers because the providers did not have packages that were suitable for the university to grant access to students, there is a need for the library to engage the providers for suitable packages in meeting the library users' needs. Although 62% wished to access all e-resources through their smartphones, only 22% could access all the e-resources.

It also came to light that the majority (36%) could access e-journals, followed by e-books with 32%, past question papers 15%, e-newspapers 11% and online databases 10%. Equally, Abubakar and Adetimirin (2016) established that students accessed e-journals, e-research reports, e-newspapers, and e-magazines, after studying the postgraduate students' use of e-resources in Nigerian University Libraries. Moreover, Sharma and Madhusudhan (2017) after studying the use of mobile devices by library and information science students in Central Universities of Uttar Pradesh in India, revealed that a large number of respondents (83.66%) utilised mobile devices to access the library website, 45.75% checked library hours, 41.83% accessed institutional repository, and 39.87% contacted a librarian. Additionally, only few respondents (16.34%) used web OPAC and even fewer (12.42%) accessed e-journals and e-books (1.96%).

Moreover, Mawere and Sai (2018) specified that the Great Zimbabwe University had an advanced search engine, institutional repository, online databases and electronic past examination papers available online and could be accessed via the university link. The study further established that 66% of the respondents had accessed library e-resources via smartphones.

This is an indication that, if majority of students have already used smartphones to access e-resources at this stage, the possibility of the university increasing its access to e-resources through smartphones can be achieved. Nevertheless, Mtega, Dulle, Malekaniand, and Chailla (2014) study on the usage of e-resources among agricultural researchers and extension staff in Tanzania found a low usage (29.9%) of smartphones in accessing e-resources. Detailing that the low usage was not due to limited ownership of smartphones, but due to other factors such as the small screen sizes.

This could mean that if it was not of the challenges that students experienced, then more students could have accessed e-resources via their smartphones. Additionally, the researcher believes that the 66% recorded in this study could also increase if most of the challenges recorded in this study could be resolved.

5.5 Enablers and barriers to students' use of smartphones to access e-resources

Another objective of this study was to find out the enablers and barriers to students' use of smartphones in accessing e-resources.

This study revealed that 68% of participants believed that Wi-Fi connection could enhance the use of smartphones to access e-resources, followed by good network coverage 41% and fast bandwidth at 20%. In conformity with what the student said, the librarians indicated the following factors: fast Wi-Fi, good network coverage, good bandwidth and well skilled students on how to access e-resources with smartphones.

Agreeing to this is Akinola et al. (2018), who emphasised a need for a university library to have its own dedicated bandwidth with fast internet connectivity to avoid problems of network fluctuations and slow speed in the process of downloading information. In the same vain, Sajane (2017) highlighted good bandwidth, stating that users want the quickest possible way to access e-resources especially when downloading articles, adding that if the bandwidth is poor, users lose interest which leads to negative attitude towards the use of e-resources. Wi-Fi is believed to be a facility that allows computers, smartphones, or other devices to connect to the internet or communicate with one another wirelessly within a particular area (Sajane, 2017).

Good Wi-Fi connection allows users to connect to internet wirelessly, which could be a great approach to enhance access through students' mobile devices at any given time. This study revealed a lot of challenges that needs to be addressed as they hinder access of e-resource via smartphones.

These challenges are network problems, slow internet, lack of training on how to access e-resources, small screen sizes of smartphones, no access off campus, difficulties in navigating web links through smartphones, and lack of searching skills, difficulties using smartphones' touch screen for typing, weakening of the smartphones' batteries, unreliable Wi-Fi, and some type of smartphones students used could hinder access. Sharma and Madhusudan (2017) highlighted similar challenges of poor network coverage, slow internet, and slow loading time are impediments associated with accessing e-resources via smartphones.

These findings correspond with other researchers who found that constrains of accessing e-resource on mobile devices is high cost of data subscription and poor internet connectivity (Fasae & Idowu, 2015; Madhusudhan, 2016).

Additionally, Maranna and Janti (2016) underpinned similar challenges of poor internet connection and slow Wi-Fi access. Similarly, Li et al. (2016) conducted a systematic review of literature on the use of mobile phones among health professional students to access e-resources, which revealed internet connectivity as a big challenge which was also highlighted by (Akinola et al., 2018; Ankrah & Atuase, 2018). Additionally, Mawere and Sai (2018) revealed that at the Great Zimbabwe University, the e-resources could not be accessed outside campus due to the fact that most of the e-resources offered by the institution were only available within the university's network infrastructure. George, Maina and Wanangeye (2016) affirmed that university libraries were failing to implement the use of smartphones to access e-resources primarily due to internet failure, lack of training of staff members, lack of willingness from other library users to use mobile technologies and lack of training of users on how to access e-resource via smartphones phones. By the same token, Ankrah and Atuase (2018) highlighted similar challenges, lack of information on how to use e-resources and insufficient search skills.

Giving reference to these challenges, it could be believed that low usage and/or access of e-resources using smartphones is associated to these challenges, and for the library to ensure access to e-resources, there is a need to address the issue creating awareness of e-resources, reliable Wi-Fi and stable internet on campus, allowing e-resources access off campus, and giving training to students on how to access e-resources using smartphones. Chaputula and Mutula (2018a) expressed that accessing e-resources on mobile phones is being hindered by lack of operational ICT policies to govern the operations of library and information services.

This was however not the case in this study, as librarians revealed that the ICT policies were in place, however, it was being dealt with directly by computer center and not the library department. The researcher uncovered that UNAM has the general ICT Policy which was enacted in 2016 and Computer Centre and Library Information and Technology Committee (LITC) are responsible of overseeing the review of that Policy. In addition to that is the Library Services Policy (LSP), which came into effect in September 2020.

This is a policy of library services and its operations including ICT services. However, the Policies are mute on acquisition of e-resources. In a study on adoption of radio frequency identification technology in university libraries in Kenya, Makori (2013) highlighted that attention is given to policies favoring acquisition of physical information sources at the expense of technological systems, and lacking ICT policies to adopt and embrace modern technological solutions, which hinders development. The study shows that students were mostly affected by network problems, followed by slow internet, the challenge of not accessing e-resources off campus, lack of training on how to access e-resources, lack of searching skills and small screen sizes of smartphones, difficulties navigating the web and finally using touch screen for typing.

The librarians commenting on the issue of training have indicated that they were being given continuous training to deliver services through smartphones by the University. This is an indication that given the fact that the librarians were given continuous training, it is up to the librarians to ensure that the knowledge is transferred to the students through trainings.

5.6 Suggestions on what UNAM could do to enhance access to e-resources by students via smartphones

This section discusses findings on suggestions on what UNAM can do to enhance access of e-resources by students through smartphones. With rapid rise in usage of smartphones, libraries are urged to leverage e-resources access through smartphones (Mi et al., 2016). However, for it to be realised, the study suggested that UNAM should increase internet bandwidth, students get training on how to access e-resources, the library create more awareness on how to access e-resources via smartphones, the library to create a library application with the library e-resources, allow off campus access, have a compulsory library module on accessing library e-resources, provide direct library e-resources links, UNAM to provide smartphones to students and finally, give online tutorials on how to access e-resources.

Saxena and Yadav (2013) voiced that libraries should create their own mobile sites with mobile friendly interface, which allow the user to rearrange, control and navigation to suit the size of the screen. Similarly, Bushhousen et al. (2013) in a study on smartphone use at a University of Health Science Center in the United States of America, had the following suggestions from respondents: provision of access to literature databases by the university; development of mobile-friendly version websites; internet connectivity and provide access to full text electronic journals which will be utilised via mobile smartphones.

Internet connection creates no room for e-resources access, thus a high number of researchers has highlighted the need to improve internet connectivity (Bushhousen et al, 2013; Matheus & Abankwah, 2018; Saxena & Yadav, 2013; Madhusudhan, 2016).

Moreover, Sharma and Madhusudhan (2017) proposed that libraries should provide Wi-Fi facilities for users, design library apps for android and windows-based smartphones, and develop effective use of mobile devices for library resources and service. Suggestions from librarians were to: create more awareness, give training to students especially on how to utilise their phones for access, the library to have its own server and UNAM to increase the bandwidth and ensure effective Wi-Fi on campus. These findings agree with Akinola et al. (2018) who argued that a library has a significant role to perform in creating more awareness among students on the availability of electronic databases, including developing a functional library website, installing the mobile library applications and physically meeting with students to educate them on needs, use and benefits of using electronic resources.

Other suggestions brought forward from other studies in literature comprised of ICT policies and training for library staff. Sharma and Madhusudhan (2017) advised that library authorities should lay down policies towards the use of mobile devices and develop new tools and mobile apps for delivering access to e-resources. Correspondingly, Chaputula and Mutula (2018a) stated that libraries need to draft Information and Communication Technology (ICT) policies that support the use mobile telephones to access e-resources. It could be drawn that, policies need to be put in place to harness the maximum benefits of ICT use.

Furthermore, lack of skilled librarians hampers the deliverance of access to e-resource on smartphones. Chipatula and Mutula (2018a) further suggested that university and college library staff should be given trainings on how to manage and access e-resources using smartphones prior to the implementation.

They went on to argue for continuous professional development programmes related to the deliverance of library e-resources through mobile phones to ensure that library staff continue to update their knowledge and skills, as technology is very dynamic. Equally, George, Maina and Wanangeye (2016) recommended that the government should initiate and implement training programmes in all academic institutions on the use of mobile phone technology in accessing and utilising e-resources, including seminars and workshops by involving all the stakeholders in various academic libraries. Okello-Obura (2010) also highlighted the need for not only training staff members but also introducing the e-resources training and ICT use to first year students together with awareness campaigns and short messages that should be integrated with e-resources.

5.7 Summary

The chapter discussed the findings of the study. The findings disclosed that students were aware of library e-resources, however both students and librarians indicated that the library needed to create more awareness on how to access e-resources using smartphones. It further showed that students wished to access different e-resources with most students wishing to access all types of e-resources via their smartphones. The study further revealed that students found accessing e-resources via the smartphone convenient. The reasons for convenience were the mobility of smartphones, smartphones are ease to use, it is affordable, it saves time using a smartphone and that internet is faster on smartphones. The study revealed that students preferred using smartphones. Despite of the preference, the study also showed that students experienced challenges, stating network problems, slow internet, the challenge of not accessing e-resources off campus, lack of training on how to access

e-resources, lack of searching skills, small screen sizes of smartphones, difficulties navigating the web and finally using touch screen for typing.

It was also made vividly clear that ICT policies were managed by the IT department and not the Library, therefore a need for the Library to integrate and harmonise its policies to the IT department to support the use and access to e-resources using smartphones. The next chapter comprises of the summary of the findings, the conclusions, and recommendations.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary of the study's findings, conclusions and recommendations emanating from the study. According to Babbie (2010), it is in this chapter that the author summarises the sense of the main body of the study and formulate recommendations which should naturally flow from the drawn conclusions. This chapter is therefore structured as follows: the summary of findings, conclusions and lastly recommendations. This chapter's summary is arranged according to themes drawn from the objectives. The conclusions' section is presented under the objectives of the study and finally the recommendations. The substantial

recommendation originating from the study is for the library to have an ICT policy that supports the use of smartphones to access e-resources in embracing technology in libraries.

6.2 Summary of findings

The findings are summarised within the following themes from the research objectives: students' views on accessing library e-resources using smartphones; e-resources students wished to access via mobile smartphones; library e-resources available to students; enablers and barriers to students' use of smartphones to access e-resources; and suggestions on how to enhance access of the library e-resources through smartphones.

6.2.1 Students' views on accessing library e-resources using smartphones

The study unveiled a positive perception on accessing e-resources using smartphones with more students having smartphones and also having access to other people's smartphones.

It is evident that the majority of students were aware of library e-resources, of which librarians also confirmed that students were aware of e-resources. It was made vividly clear in this study that students who indicated that they were aware of e-resources, the majority of them got to know about them through lectures, library orientation and library staff respectively.

The study further showed that students were aware that they could access library e-resources using smartphones. However, librarians opined that most of the students were not aware that they could access e-resources via smartphones, based on the fact that they observed students waiting to use computers in the library even though they had their smartphones with internet access.

Furthermore, students were not likely to use smartphones to access library e-resources, however most of the students found accessing e-resources via the smartphone convenient. Reasons for convenience included smartphones' mobility, easy to use, affordability, saves time, and because internet is faster on a smartphone. It was also evident in the findings that students preferred using smartphones. The study also indicated a need for the Library to create more awareness about its e-resources. Librarians also admitted a need to create awareness on how to access e-resources using smartphones.

6.2.2 E-resources students wished to access

The study showed that students wished to access all types of e-resources. The study further revealed that the majority wished to access e-books, followed by e-journals, e-newspapers and lastly databases. These findings highlighted a need for the library to subscribe and/or digitise to more e-books and e-journals to satisfy the needs of the students.

6.2.3 Library e-resources available to students

The Library subscribes to databases which are available to students for access. The databases comprised of mostly e-journals and e-books. In addition, the Library also provided e-conference papers, and e-past examination papers. However, given that the majority of students wished to access all e-resources, it came to light that only 22% could access all the e-resources. The study showed that the mostly accessed e-resources were e-journals, followed by e-books with, past question papers, e-newspapers and online databases respectively.

The e-resources access recorded in the study was however very low. The study further revealed that the University did not subscribe e-newspapers, because the providers did not have packages that were suitable for the university to grant access to students.

6.2.4 Enablers and barriers to students' use of smartphones to access e-resources

The study further revealed that students found that reliable and stable Wi-Fi connection could enhance the use of smartphones to access e-resources, followed by good network coverage and fast bandwidth. In conformity, librarians indicated the following factors: fast Wi-Fi, good network coverage, good internet bandwidth and well skilled students on how to access e-resources with smartphones. Whereas, challenges recorded in order of importance were: network problems, followed by slow internet, lack of training on how to access e-resources, small screen sizes of smartphones, no access to e-resources off campus, difficulties navigating web links through smartphones, and lack of searching skills, challenging using a smartphones' touch screens for typing and weakening the smartphones' batteries. The study further showed that librarians were of the opinion that lack of skills on how to access e-resources and awareness of using smartphones to access e-resources, slow and unreliable Wi-Fi, and also some type of smart phones students used could hinder access to e-resources through smartphones.

Additionally, the study revealed that network problems affected the use of e-resources, followed by slow internet, not able to access e-resources off campus and lack of training on how to access e-resources. Other challenges recorded were lack of searching skills, small screen sizes of smartphones, difficulties navigating the web and finally using touch screen for typing.

6.3 Conclusions

In this section, the researcher concluded the main findings of the study. The section of this study is arranged according to the following research objectives: determine the students' views on accessing library e-resources using smartphones; assess library e-resources that students wish to access through smartphones; explore the university e-resources available to be accessed via smartphones; discover enablers and barriers to the use of smartphones by students to access e-resources; and provide suggestions on how libraries can enhance access of e-resources through smartphones.

6.3.1 To determine students' views on accessing library e-resources using smartphones

Most of the students had smartphones, and above that, the majority had access to other people's smartphones. Students were aware of library e-resources, of which the majority of them got to know about them through lectures, library orientation and library staff respectively. Both students and librarians highlighted a need for the library to create awareness about the library e-resources.

6.3.2 To assess library e-resources that students wish to access through smartphones

The study showed that students wished to access all library e-resources via their smartphones. Equally, students wished to access e-books, followed by e-journals, e-newspapers and lastly databases.

6.3.3 To explore the University e-resources available to be accessed via smartphones;

The University subscribes to databases with mostly e-journals and e-books, and in addition to that is e-conference papers, and e-past examination papers. Majority of the students could access e-journals, followed by e-books with, past question papers, e-newspapers and online databases respectively. The mostly accessed e-resources were e-journals, followed by e-books, online database and lastly e-newspapers.

A low access of e-resources was recorded in the study with some not accessing them at all. Students preferred using smartphones to access e-resources and found accessing e-resources via the smartphones convenient. Reasons for convenience included smartphones' mobility, easy to use, affordability, saves time, and because internet is faster on a smartphone.

6.3.4 To discover enablers and barriers to the use of smartphones by students to access e-resources

Students found Wi-Fi connection, good network coverage, and fast bandwidth as factors that could enhance the use of smartphones to access e-resources, with librarians adding well skilled students on how to access e-resources with smart phones. Challenges recorded in order of importance were: network problems, followed by slow internet, lack of training on how to access e-resources, small screen sizes of smartphones, no access off campus, difficulties navigating web links through smartphones, and lack of searching skills, challenging using a smartphones' touch screens for typing and weakening the smartphones' batteries. Moreover, librarians found lack of skills on how to access e-resources, awareness of using smartphones to access e-resources, slow and unreliable Wi-Fi, and the type of smartphones students use as some factors that could hinder access.

6.3.5 To provide suggestions on how libraries can enhance access of e-resources through smartphones.

Both students and librarians provided suggestions on how libraries can enhance access of e-resources through smartphones. In overcoming challenges students encountered, the library should:

1. Give training to students on how to access e-resources: this is because students indicated that they needed training in order to know how to access the e-resources using smartphones.
2. Create more awareness on how to access e-resources using smartphones: although the study revealed that students were aware of e-resources, students have seen awareness as an important aspect and they have strongly recommended that the library continues to create awareness of available library e-resources to be accessed by students.
3. Create a Library Application (App) with the library e-resources: this is significant taking into consideration access via smartphones whereby mostly everything is accessed in applications, having an App for e-resources will be convenient for students.
4. Allow off-campus access to e-resource. Students highlighted that accessing e-resources is limited to being on campus only, there is therefore a need to allow off-campus access to e-resources.
5. Give a compulsory library module on library e-resources: to know and effectively use e-resources, students suggested a library module where they will not only be sensitized about e-resources but be taught also about e-resources.

6. Provide direct links to e-resources. This is to avoid students getting lost while surfing the internet.
7. Give online tutorials on how to access e-resources with smartphones: this can be step by step guide or show videos on how to access e-resources with possible quizzes and frequently asked questions and answers.
8. Give training to students especially on how to access e-resources using smartphones. With the knowledge on how to access e-resources, students will access them with ease.
9. The Library should have its own server. This will mean fast internet that will allow students to access and use it effectively because of high bandwidth.
10. Ensure effective and reliable Wi-Fi on-campus. Students complained of unreliable Wi-Fi on-campus, therefore a need to ensure stable Wi-Fi on campus.

6.4 Recommendations

According to an interpretation of the findings in the previous chapter, it is of outmost importance that the Library improves its services and operations to cater for all students' needs when it comes to accessing e-resources through smartphones. The researcher therefore recommends the following:

6.4.1 Policies

The researcher acknowledges the UNAM Library Services Policy. However, the researcher recommends that UNAM Library takes a leaf from the UNAM ICT Policy which supports gadgets like smartphones, to be clear on using mobile library applications. It is vital for the library to maximize the benefits of ICT use and embrace modern technological solutions such as smartphones, which will facilitate development at all levels in academics.

6.4.2 E-resources Awareness

The study found that although students were aware of e-resources, there is still a need to create more awareness on how to access e-resources using smartphones. Therefore, the researcher recommends that the Library create more awareness on how to access e-resource through smartphones. This will stimulate students not only to know about e-resources, but also how to best access e-resources and utilised in their academics.

6.4.3 Mobile Library Application

With the Library e-resources still being underutilised, the Library should create a mobile Library App for e-resources. Like any other application, this will be easy for students to access e-resources at any time, through a unified application. The university already has an ICT Policy that supports the use of smartphones; thus it will be easier for the Library to ensure that the App materialises. In addition, marketing e-resources in the App will make the library staff sensitise students with ease.

6.4.4 Information Literacy module

Given the fact that there were many challenges that students brought forward in the study, it is of high importance that as part of the core courses, UNAM introduces a compulsory module on information literacy that will include trainings on how to access library e-resources.

This will be a core module to be attended by all first year students in their first semester. This will acquaint the students with the basic knowledge on how to access library e-resources and all other physical resources. Students can only access e-resources if they are knowledgeable on how to access them.

6.4.5 Wi-Fi Bandwidth

One of the challenges highlighted in the study was slow internet and unreliable Wi-Fi on campus. The researcher therefore proposes that librarians should advocate for the University through the ICT department to increase its Wi-Fi bandwidth, to ensure effective Wi-Fi coverage on campus in serving its population.

6.6 Areas for further research

Areas for further research should include but not limited to the following:

1. The inability to access e-resources off-campus was highlighted in the study, therefore there is a need to investigate the access of e-resources off-campus.
2. There is a need for a study that will investigate the effectiveness of using mobile Library Apps of e-resources to be accessed via smartphones.

6.7 Final Conclusion

This UNAM study on the use of smartphones in accessing e-resources recognises that with the increase of smartphones in this era, there is potential use and access of e-resources via smartphones. This is because students gave preference of using smartphones to access e-resources and found smartphones convenience to use in accessing e-resources. Moreover, low usage and access of e-resources was recorded in this study regardless of the fact that the University subscribe to e-resources. The study has also shown the importance of creating more awareness to improve access, training students on how to access e-resources, using the Library App for e-resources, allowing off-campus access of e-resources and the need to increase the University's bandwidth for efficient Wi-Fi on-campus. The recommendations brought forward by the researcher were as a result of challenges anticipated by the respondents, therefore could aid in enhancing an access of e-resources at UNAM.

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APPENDIX A: RESEARCH PERMISSION LETTER UNAM

CENTRE FOR POSTGRADUATE STUDIES

University of Namibia, Private Bag 13301, Windhoek, Namibia
340 Mandume Ndemufayo Avenue, Pioneers Park
☎ +264 61 206 3275/4662; Fax +264 61 206 3290; URL.: http//www.unam.edu.na

UNAM
UNIVERSITY OF NAMIBIA

RESEARCH PERMISSION LETTER

Student Name: Elizabeth Matheus

Student number: 201078058

Programme: Masters in Information and Communications Studies

Approved research title: An investigation into the use of smartphones in accessing electronic resources at the University of Namibia.

TO WHOM IT MAY CONCERN

I hereby confirm that the above mentioned student is registered at the University of Namibia for the programme indicated. The proposed study met all the requirements as stipulated in the University guidelines and has been approved by the relevant committees.

The proposal adheres to ethical principles as per attached Ethical Clearance Certificate. Permission is hereby granted to carry out the research as described in the approved proposal.

Best Regards

Prof. M. Hedimbi
Director: Centre for Postgraduate Studies
Tel: +264 61 2063275
E-mail: directorpgs@unam.na

13/09/18
Date

APPENDIX B: RESEARCH PERMISSION LETTER UNAM LIBRARY

OFFICE OF THE UNIVERSITY LIBRARIAN
Mr Joseph Ndinoshiho: University Librarian
University of Namibia, Private Bag 13301, Windhoek, Namibia
340 Mandume Ndemufayo Avenue, Pioneers Park
☎ +264 61 206 3873/74; Fax: +264 206 3876; E-mail: jndinoshiho@unam.na; URL.: http//www.unam.edu.na

UNAM
UNIVERSITY OF NAMIBIA

17 July 2019

Ms Elizabeth Matheus

Department of Information and Communication Studies

Faculty of Humanities and Social Sciences

University of Namibia

Windhoek

Dear Ms Matheus,

Subject: Request for permission to interview librarians at UNAM Main Campus library

Your email dated 16 July 2019 regarding the above subject matter bears reference.

I am pleased to inform you that approval has been granted to you to conduct interviews for the purpose of your research project required for your Master Degree with the following title.

"An investigation into the use of smartphones in accessing electronic resources at the University of Namibia".

Let me take this opportunity to wish you all the best in the successful completion your research project.

Sincerely,

Joseph Ndinoshiho

University Librarian

APPENDIX C: ETHICAL CLEARANCE CERTIFICATE

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: FHSS /425/2017 **Date: 1 October, 2018**

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: An Investigation Into The Use Of Smartphones In Accessing Electronic Resources At The University Of Namibia

Researcher: ELIZABETH MATHEUS

Student number: 201078058

Supervisor(s) Prof Cathrine Nengomasha

Faculty: Faculty of Humanities and Social Sciences

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.

(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.

(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.

(d) The UREC retains the right to:

(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

(ii) Request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

Dr. J.E. de Villiers : UREC Chairperson

Ms. P. Claassen: UREC Secretary

APPENDIX D: INFORMED CONSENT FORM

TITLE OF RESEARCH : AN INVESTIGATION INTO THE USE OF SMARTPHONES IN ACCESSING ELECTRONIC RESOURCES AT THE UNIVERSITY OF NAMIBIA

RESEARCHER : Ms. Elizabeth Matheus
Master of Arts in Library and Information Science
Department of Information & Communication Studies
University of Namibia
+264 81 4810713
leez22@live.com

Research Information

This research aims to investigate the use of smartphones in accessing electronic resources at the University of Namibia. Students will fill in a questionnaire, which will take approximately 10 to 15 minutes, whilst library staff will be interviewed for approximately 30 to 45 minutes.

You have been selected as a prospective participant as your input would be of great significance to this study. All responses are confidential and your privacy will be protected, as no name will be mentioned. Please note that participation is voluntary and you are free to decline to participate for any reason known by you. If you say no, this will not affect you negatively in any way whatsoever.

This study will benefit The University of Namibia Library and other libraries, which provides electronic resources to the users, and it will provide guidelines on how libraries can enhance access of electronic resources in libraries using smartphones.

For any questions or further clarifications with any aspect regarding this research, please feel free to contact me or my research supervisors, in the Department of Information & Communication Studies, University of Namibia: Professor Catherine T. Nengomasha; e-mail: cnengomasha@unam.na.

If you voluntarily agree to participate in this research, kindly indicate your consent by signing below:

Signature Date

…… ……..

APPENDIX E: QUESTIONNAIRE FOR THE STUDENTS

Questionnaire for students, to investigate the use of smartphones in accessing library electronic resources at the University of Namibia.

SECTION A: Demographic data

*"Please **tick one** appropriate answer"*

1. **What is your sex?**

a. Female	
b. Male	

2. **What is your year of study?**

a. First year	
b. Second year	
c. Third year	
d. Fourth year	

SECTION B: Students' views on accessing library e-resources using smartphones

*"Kindly **tick one** appropriate answer"*

3. **What type of phone do you have?**

a. Smartphone	
b. Non Smartphone	

4. Do you have access to someone else's smartphone?

a. Yes	
b. No	

5. Are you aware of library e-resources?

c. Yes	
d. No	

6. How did you get to know about library e-resources?

a. Library orientation	
a. Through lectures	
b. Library's website	
c. Library staff	
d. Workshops	

Any other, please specify:

……

……

7. **Please indicate to what extent you agree with the following:**

Survey scale: *Strongly agree= 4; Agree=3; Disagree=2; Strongly disagree=1*

To what extent do you agree with the following statements below?	**4**	**3**	**2**	**1**
I am aware that I can use smartphones to access library e-resources				
I am more likely to use a smartphone to access library e-resources than any mobile device				
There is a need for the library to create awareness of the e-resources				

SECTION C: Electronic resources students wish to access via a mobile smartphone

8. **Have you ever accessed e-resources via a smartphone?**

a. Yes	
b. No	

*(If your answer is **no please proceed to question 10**)*

9. **How often do you access e-resources via a smartphone?**

a. Daily	
b. 2-3 times a week	
c. 2-3 times a month	
d. Once a month	

10. What type of library e-resources do you wish to access with a smartphone?

*"Please **tick any** applicable"*

a. Electronic journals	
b. Electronic books	
c. Electronic newspapers	
d. Online databases	
e. All of the Above	

SECTION D: Library e-resources available to be accessed by students

11. What type of available library e-resources do you currently access?

*"Please **tick any applicable**"*

a. Electronic journals	
b. Electronic books	
c. Electronic newspapers	
d. Online databases	
e. All of the Above	

Any other, please specify:

……

……

12. Please indicate to what extent you access the following resources via smartphones?

Survey scale: *Very much= 5; somewhat=4; Undecided=3; Not really=2; Not at all=1*

Please tick only one scale per statement

To what extend do you access the following resources via smartphones?	**5**	**4**	**3**	**2**	**1**
a. Electronic journals					
b. Electronic books					
c. Electronic newspapers					
d. Online databases					

13. Is it convenient for you to access the library resources through a smartphone?

a. Yes	
b. No	

If yes, please motivate your answer:

……

……

14. Do you prefer using a smartphone to access library electronic resources?

a. Yes	
b. No	

SECTION E: Enablers and barriers of students' smartphones use in accessing e-resources

15. What factors can enhance the use of smartphones to access e-resources?

a. Fast bandwidth	
b. Wifi connection	
c. Good network coverage	

Any other, please specify:

……

……

16. What challenges do you face when accessing electronic resources via a smartphone?

*"Please **tick any applicable**"*

a. Network problems	
b. Lack of searching skills	
c. Lack of training on how to access the e-resources	
d. Using touch screen for typing	
e. Slow internet access	
f. Difficulties in navigating web links through a smartphone	
g. I cannot access e-resources off campus	
h. Small screen sizes of smartphones	

Any other, please specify:

……

……

17. Please indicate to what extent the following factors affect the usage of e-resources through smartphones?

Survey scale: *Very much= 5; somewhat=4; Undecided=3; Not really=2; Not at all=1*

Please tick only one scale per statement

To what extent do the following factors affect the usage of e-resources through smartphones?	**5**	**4**	**3**	**2**	**1**
a. Network problems					
b. Lack of searching skills					
c. Lack of training on how to access the e-resources					
d. Using touch screen for typing					
e. Slow internet					
f. Difficulties in navigating web links through a smartphone					
g. I cannot access e-resources off campus					
h. Small screen sizes of smartphones					

SECTION F: Suggestions on how to enhance access of the library e-resources

18. Please suggest ways on how libraries can enhance access to e-resources through the use of smartphones

……

……

……

……

T**hank you for your participation!**

APPENDIX F: INTERVIEW GUIDE FOR LIBRARIANS

Interview guide for the librarians to investigate the use of smartphones in accessing library electronic resources at the University of Namibia.

Librarians' views on access to e-resources by students using smartphones

1. What are your views about students accessing library e-resources using smartphones?

Library e-resources that students wish to access through smartphones

2. In your opinion, what are the library e-resources students' wishes to access through smartphones? Please motivate.

The University e-resources available to be accessed via smartphones

3. What e-resources does the University library provide to students?

4. What library e-resources do students currently access?

5. In your opinion, do you think students can access the University e-resources by the use of smartphones? Please motivate.

Enablers and barriers students face while accessing e-resources using smartphones

6. What are the factors that can enhance students' access to e-resources using smartphones? Please motivate.

7. What are the factors that can hinder the students' access to e-resources using smartphones?

8. In your opinion, do you think it is convenient for the users to access the library electronic resources using smartphones?

9. Are the librarians given continuous professional training to deliver services through smartphones?

Librarians' suggestions on how the library can enhance access of e-resources through xsmartphones.

10. Does the library have Information and Communication Technology (ICT) policies that support the use of smartphones to access e-resources?

11. In your view, does the University have adequate ICT facilities in libraries to support the access of library e-resources?

12. Please suggest ways on how libraries can enhance access of e-resources through the use of smartphones

Thank you for your participation!