Access and use of electronic resources by students at the selected campuses of the University of Namibia

by

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ABSTRACT

Academic libraries are now using electronic resources to fulfil the information needs of their clients. The study was carried out at the University of Namibia and was aimed at investigating access and use of electronic resources by undergraduate students at the selected campuses of the University of Namibia.

The investigation utilized the descriptive survey study design, which is quantitative in methodology. The target population was 1,460 undergraduate students enrolled at Neudamm, Khomasdal and José Eduardo dos Santos campuses were targeted for this investigation and, using stratified random sampling, a corresponding sample of 292 undergraduate students was obtained. The study utilized two questionnaires to collect data from undergraduate students and twelve library staff and data were analyzed by using SPSS software.

The study established that UNAM libraries were signed up to an extensive variety of electronic resources and that students were commonly mindful of the presence of these electronic resources. However, students were not using electronic databases, e-books, and e-journals provided by the library, to their fullest potential. Additionally, the study settled that students preferred to use search engines, such as ‘Google search, over other licensed databases for various purpose, including current and general information, preparing for examination, writing assignments and projects. Furthermore, the study reported lack of searching skills among students and ineffective information literacy program. Limited space in the training venues, limited online library guides and inappropriate timing of the training impedes the effectiveness of training programs.

The findings also reported that a lack of ICT infrastructure, such as the unavailability of web network connectivity, inadequate number of computers, and slow internet

connectivity were the primary elements limiting students from accessing and adequately utilizing electronic resources.

Lastly, the study infers that students showed a desire and readiness to access and utilize electronic resources for their course work and research purposes regardless of some recognized difficulties that hindered their effective usage of these resources. To encourage more noteworthy access to, and utilization of, electronic resources, various recommendations based on the findings were presented. These were that students should be assigned academic tasks that compel them to access and use licensed databases, that Internet bandwidth be increased to ensure high speeds, the number of networked computers in the libraries be increased, the plug in points in the libraries be expanded to allow students to plug in their own devices, training venues be expanded, online library guides be developed to guide all library users and structured information literacy programs be developed and integrated into the university curriculum.

KEY TERMS: academic libraries, social influence, information access, information literacy, undergraduate students, University of Namibia, e-books, e-journals, information use, facilitation conditions.

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In the first instance, I would want to express gratefulness to the Almighty God, for reestablishing life in me and for being there throughout my whole study. I want to offer my thanks to Professor Nampombe Saurombe for her directions, help, and support through the span of my study.

My extraordinary thanks additionally go to my family, for their patience and support rendered all through my time of undertaking this study. Finally, I would like to earnestly record my thankfulness to all persons that have given their full help in making this study possible.

DEDICATION

This dissertation is dedicated to my parents, Mr. Israel Natangwe Shigwedha; Mrs. Johanna Taatsu Shigwedha, who showed me that it is never too late to pursue your passion and to develop yourself personally and professionally.

DECLARATION

Name: Johannes Jane Omma Ndishishi Shigwedha

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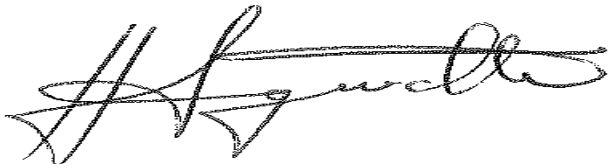
Access and use of electronic resources by students at the selected campuses of the University of Namibia

I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



SIGNATURE **DATE: 20 January 2020**

Johannes Jane Omma Ndishishi Shigwedha

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LIST OF ABBREVIATIONS AND ACRONYMS

AJO	African Journals Online
AGORA	Access to Global Online Resources in Agriculture
CD-ROM	Compact Disk Read Only Memory
DILP	Digital Information Literacy Program
DOAJ	Directory of Open Access Journals
DVD	Digital Video Disk
E-Books	Electronic books
EE	Effort Expectancy
E-Journals	Electronic journals
E-Resources	Electronic resources
FC	Facilitating Conditions
HPP	Harambee Prosperity Plan
HINARI	Health Inter Network Access to Research Initiative
ICT	Information Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
IFLA	International Federation of Library Associations and Institutions
INASP	International Network for the Availability of Scientific Publications
IDT	Innovation Diffusion Theory
IT	Information Technology
JNMC	Jawaharlal Nehru Medical College
LIST	Library and Information Skills Training
MARC	Machine-Readable Cataloging
NDP5	National Development Plan 5
OPAC	Online Public Access Catalogue
PC	Personal Computer
PDF	Portable Document Format
PEOU	Perceived Ease of Use
PE	Performance Expectancy
PDAs	Personal Digital Assistants
PU	Perceived Usefulness
SABINET	Southern African Bibliographic Information Network

SADC	Southern Africa Development Community
SEK	Swedish Krona
SCT	Social Cognitive Theory
SI	Social Influence
SANLiC	South African National Library and Information Consortium
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TEEAL	The Essential Electronic Agricultural Library
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UK	United Kingdom
UNAM	University of Namibia
UNISA	University of South Africa
USA	United States of America
UTAUT	Unified Theory of Acceptance and Use of Technology
WWW	World Wide Web
ZULC	Zimbabwe University Library Consortium

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1. Introduction

The manner in which information resources are stored and distributed has been changed by the breakthrough in Information and Communication Technology (ICT) (Mtega *et al.,* 2013). Butler (2018) pointed out that the world has undergone significant change through a series of industrial revolutions. He refers to the fact that, in the last four decades, the world has transformed from what is known 'knowledge', to a society that is able to obtain and utilize information using powerful computing and telecommunication devices. Schwab (2016) explains that, in recent years, the world has progressed from the third industrial revolution to the fourth industrial revolution where 'artificial intelligence' is around us.

The advancement from print to electronic resources has happened rapidly and libraries have experienced noteworthy changes so as to adequately convey electronic resources to their academic communities (Appleton 2006). Library electronic resources have moved forward from the presentation of Machine-readable Cataloguing (MARC) to web-based electronic resources toward the end of the twentieth century (Hawthorne 2008; Mutula 2012; Tlakula and Fombad 2017).

In the context of this study, the expression 'electronic resources' alludes to those materials that require computer access, regardless of whether through a personal

computer, centralized computer, or hand-held mobile device (IFLA 2012). E-books, e-journals, online databases and all materials accessible online either locally or remotely are classified as electronic resources (Johnson *et al.,* 2012).

Mogase and Kalema (2015) recognized the way that electronic resources have improved information retrieval processes and enhanced availability of scholastic materials. Equally, these developments are putting enormous pressure on academic libraries to incorporate electronic resources into their collections.

Consequently, academic libraries now have to spend substantial amounts of money subscribing to electronic resources to satisfy students', academics' and researchers' information needs and to support teaching, learning and research. Isibika and Kavishe (2018) admit that study, learning, teaching and research in academic institutions are enhanced by the presence of electronic resources, as they enable increased access to timely and diverse academic materials.

When faced with an information need, library users in academic libraries can access online information resources without physically going to the library. However, there are other benefits that library users can derive from using electronic resources. Adesoye and Amusa (2013) documented that the advantages of electronic resources include: adaptability in seeking, ease of accessibility at anyplace, including at home, or wherever there is web connection, and enabling access to an extensive variety of data.

Worthy of note, however, is that, regardless of these advantages related to the electronic resources and the increase amounts of money that academic libraries have spent to acquire such resources, there is a current concern that such resources are not

being used to their fullest potential by users in academic libraries. Studies on the acceptance and utilization of electronic resources uncover distinctive dimensions of electronic resources use in academic libraries around the world. Pietersen and Raju (2015) noticed that while academic libraries have had genuine accomplishment in adopting electronic collections, there is a lack of acknowledgment of digital books, specifically, as part of electronic collections, and they remain underutilized.

Most investigations in many parts of Africa reveal a low utilization of electronic resources. For instance, Dulle (2015), Isibika and Kavishe (2018), Pinigas, Cleopas and Phiri (2017), Mogase and Kalema (2015), and Mtega *et al.,* (2013) have recognized the following factors as hindrances to the acceptance and utilization of electronic resources: untrustworthy power supplies; inadequate ICT facilities and sporadic internet access; inadequate awareness of the availability of information resources; user's' interests pertaining to use of search engines; low dimensions of information proficiency abilities; the relevance of e- resources to needs; and the discipline of study and level of study.

Regardless of the challenges of grasping electronic resources, academic libraries must acquire such resources and upgrade their ICT infrastructure and facilities for users to have access to them. The University of Namibia (UNAM) library has adopted electronic resources to ensure that the academic community that it serves has convenient access to scholarly materials.

1.1 Contextual background of the study

After the promulgation of the UNAM Act No. 18 of 1992, UNAM was established on 31 August 1992. Originally, it came into existence with one campus situated in Windhoek, the capital city of Namibia. Nonetheless, it has now extended, with 12 campuses and nine regional centers in various locales of Namibia. To date, UNAM has registered over 20,000 students from various regions in Namibia including international students and at the time of writing, the number of academic staff members stood at 800. Various UNAM campuses offer university undergraduate and postgraduate programs.

The University of Namibia (UNAM) library is comparatively young when compared to other academic libraries within the Southern Africa Development Community (SADC) region. The primary focus of UNAM library is to essentially strengthen the academic programs and research capacity of the university. Thus, it is information learning resource center that supports teaching, learning and research.

The UNAM library is a network that comprises many branch libraries across campuses in the different regions of Namibia. This network can be equated to a national information support system providing access to the world's scientific knowledge. The library serves government officials, researchers and members of the public, whilst also affirming the centrality of its primary target groups, namely, UNAM students and staff.

The library has a staff complement of 111 (Library staff records from the Office of the Librarian 2017). By 1996, UNAM library had an internet connection and the library management system (INNOPAC Millennium System) was installed in 2006 with generous financial support from the Andrew Mellon Foundation.

UNAM libraries have quality collections in a variety of formats; these, have been built over a number of years. Most of the book collections are in print format, and, due to the changes in information infrastructure as well as the need to guarantee that it addresses the information needs of the university community, the library subscribes to a number of electronic resources packages which are accessible online 24 hours a day via the library website.

To date, the library subscribes to over 20 electronic databases over the web. The library has also digitized part of its collection, including, for instance, past examination papers, the institutional repository for academic research and some local databases. All these resources are searchable through the library website both on and off campus at http://www.unam.edu.na/library

1.2 Statement of the research problem

As of late, electronic resources have progressively turned into noteworthy resources in every university library (Shuling 2007). Gakibayo, Ikoja-Odongo and Okello-Obura (2013) note that electronic resources have numerous capacities and advantages, which can be of enormous use to students and especially those inside academic institutions.

Several studies by Isibika and Kavishe (2018), Mogase and Kalema (2015), Salubi, Ondari-Okemwa and Nekhwevha (2018), and Tlakula and Fombad (2017) conducted in developing countries have concluded that there was under-usage of electronic resources in scholastic libraries in Africa when compared to the usage trend in developed countries.

The University of Namibia libraries have embraced electronic information resources so as to meet the scholarly information needs of the whole UNAM community. However, there is to date, an absence of persuasive proof of the extent of students' access and use of electronic resources at José Eduardo dos Santos, Neudamm and Khomasdal campus libraries.

It is against this background that this study means to see whether such resources at Neudamm, Khomasdal and José Eduardo dos Santos campuses are in actuality being utilized by students. Hence, there is a need to explore the behaviors of undergraduate students at UNAM campuses in respect of electronic resources use by applying the UTAUT and TAM models as a theoretical framework without considering the moderating effects of age, gender, experience and voluntariness of use.

In this regard, the knowledge and understanding garnered within this study about students' access and use of electronic resources could play a vital role in providing platforms for sound and practical mediations to enhance access and utilization of such resources later on in the future.

1.2.1 Research purpose

The general purpose of this study was to investigate access and utilization of electronic resources by undergraduate students with explicit reference to the Neudamm, Khomasdal and José Eduardo dos Santos campus libraries of the University of Namibia.

1.2.2 Research objectives

The investigation was guided by the following objectives:

1. To find out what type of electronic resources are available at UNAM libraries
2. To establish the awareness of undergraduate students regarding electronic resources
3. To find out which electronic resources are used by undergraduate students
4. To determine the availability of training programs to assist undergraduate students with their access to, and use of, electronic resources
5. To determine factors related to undergraduate students' access to, and use of, electronic resources

Table 1.1: Illustration of relationship between research objectives, research questions and possible sources of data

Objectives	Research question(s)	Theoretical Framework: theories that guide the study	Research method(s)	Population	Research instrument(s)
Find out the types of electronic resources available at UNAM libraries.	Which electronic resources are available at UNAM libraries?	UTAUT	Quantitative	Library staff	Library staff questionnaire **Qn. 5** Library website: http://www.unam.edu.na/library/e-resources
Establish the awareness of undergraduate students regarding electronic resources.	What is the level of awareness of undergraduate students of UNAM about electronic resources?	UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire **Qn.5, 6, 7.** Library staff questionnaire **Qn.6, 7.**
Find out which electronic resources are used by undergraduate students.	Which electronic resources do undergraduate students prefer to use?	TAM and UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses	Student's questionnaire **Qn.7, 8, 9, 10 11.** Library staff questionnaire **Qn. 8, 9, 16, 18.**
Determine the availability of training programs in place to assist undergraduate students with access to, and use of, electronic resources.	What training programs are in place at UNAM library? If there are training programs in place, how effective are these training programs?	UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire **Qn. 7, 12, 13, 14, 15.** Library staff questionnaire **Qn. 10, 11, 12, 13, 14**
To determine factors related to their access to, and use of, electronic resources.	How do undergraduate students get to electronic resources? What issues do undergraduate students experience when accessing and utilizing electronic resources?	UTAUT TAM and UTAUT	Quantitative Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire **Qn.7, 16, 17, 18, 19, 20, 21.** Library staff questionnaire **Qn. 8, 9, 17.** Student's questionnaire **Qn. Qn.7, 20.** Library staff questionnaire **Qn. Qn. 15.**

1.3 Justification for the study

Scholarly libraries have embraced technologies in expanding and maximizing entry to information resources that support teaching, learning and research (Mogase and Kalema 2015). Ayoo and Lubega (2014) and Rioux (2014), maintained that ICT improvements have resulted in an exponential growth in the acquisition of electronic resources as an integral part of academic libraries for research, teaching and academic activities. This clarifies why academic libraries are progressively exploiting the benefits offered by information technology (IT) to successfully accommodate the information requirements of their patrons.

Similar studies by Dauda (2014), Frandsen *et al.,* (2017), Hwang, Jayhoon and Hwan (2014), Mogase and Kalema (2015), Salubi, Ondari-Okemwa and Nekhwevha (2018), and Tlakula and Fombad (2017) on the use of electronic resources have reported underutilization as a matter of concern in academic libraries due to the challenges identified in section 1.1 of this dissertation. While academic libraries make information resources available for use, it is of utmost significance that libraries examine and understand the viewpoints identified with the access and utilization of such resources among its user communities. This in turn will help the library to account for the money it spends in acquiring or providing access to these resources.

Nicholas *et al.,* (2008) reported that librarians need to fully comprehend various aspects of use, including the amount of use, and the nature of utilization of electronic resources. For the past few years, the University of Namibia library has made funds available to procure electronic resources to better enhance scholarly activities of the university.

This study is, therefore, necessary to understand whether or not there has been an acceptance and optimal utilization of such resources by UNAM students, taking into account the challenge of underutilization revealed by the aforementioned studies with regard to academic libraries. The conclusions and recommendations of this investigation will go far in ensuring that measures and processes are introduced to inspire undergraduate students to accept and use electronic resources optimally in cases where they are found presently to be under-utilized.

1.4 Significance of the Study

Woodwall (2012) notes that the criticalness of a given study can be built up through understanding why the research is crucial and what input to new learning the research makes to the field of study. The significance of this study lies in the fact that it provides a better picture of how undergraduate students at UNAM campuses access and utilize electronic resources based on empirical evidence. This is especially imperative given how electronic resources are critical resources for both learning and research within tertiary education. Based on the problems that were identified, the study aimed to come up with recommendations to improve the usage of electronic resources at UNAM libraries.

Moreover, the study is significant because it: makes a decisive new contribution to the existing knowledge identified with the use of online resources in academic libraries. In the end, the findings of the study uncovered certain variances, which different researchers may consider for further research; thus it not only adds to existing knowledge - it also helps to inform future research. Other campus libraries of the

University of Namibia, and other academic libraries with similar conditions which are not covered by the investigation may, moreover, gain from the study's findings.

1.5 Definition of key terms

Academic libraries are libraries attached to tertiary academic institutions above secondary education level, which exist to serve the educational needs of students, support the teaching staff in terms of providing material needed for their teaching role, and provide support to academic staff with reference to their research needs (Wen 2005).

Electronic resources have been used to include all data sources for instance, books, journals databases, Online Public Access Catalogues (OPACs), CD-ROMs, DVDs and other resources that exist in electronic or computerized format and arranged and accessed through the Web.

Facilitating conditions: This simply refers to how much an individual believe that their organization's ICT infrastructure facilities and enabling electronic information environment are in place to enhance access and use of the information system (Venkatesh *et al.,* 2003).

Information access: The capacity to locate electronic resources effortlessly to meet students' information needs.

Information use: The Chamber Dictionary (2014) defines 'use' as to put to some purpose or deploy as a means of accomplishing or achieving something. This implies

access and consultation of electronic resources that undergraduate students feel best meet their information needs.

Information literacy: Information skills which incorporate individual capacity to perceive when information is needed, and aptitude to discover, assess and use information efficiently (Lau 2006).

Social influence: is how much the individual see how vital others trust that they should use an information system (Venkatesh *et al.,* 2003).

Undergraduate students: For the purpose of this study, undergraduate students are characterized as the full-time students enrolled for undergraduate qualifications at the University of Namibia's (UNAM) Neudamm, Khomasdal and José Eduardo dos Santos campuses.

1.6 Theoretical framework for the study

The theoretical framework for this study is drawn from the Unified Theory of Technology Acceptance and Use (UTAUT) and the Technology Acceptance Model (TAM). UTAUT is the key theory applied and it is enhanced by TAM in support of the research problem for this investigation. In spite of the fact that UTAUT is relatively new, its reasonableness, legitimacy and unwavering quality in technology acceptance studies in various settings has been demonstrated by researchers: for example, Davis (2000), Venkatesh *et al.,* (2003) and Williams, Rana and Dwived (2015).

Four main constructs from UTAUT, namely, performance expectancy, effort expectancy, social influence and facilitating, and two others from TAM, namely, perceived usefulness and perceived ease of use, were employed to comprehend the elements prompting the acceptance and use of electronic resources by undergraduate students at selected campuses of the University of Namibia.

A study by Pinigas, Cleopas and Phiri (2017) employed the UTAUT model to explore the acceptance of electronic resources by students in Zimbabwean universities. The results revealed that social influence is the major factor affecting students' behavioral intention to use electronic resources. In their study, Joo and Choi (2015) in the United States of America revealed that undergraduate student's intentions to use online library services is impacted by both the usefulness and the perceived ease of use.

1.7 Research methodology and design

The study was informed by the positivism paradigm and adopted a quantitative research approach to collect research data. This approach was fitting for this study since it empowered the researcher to arrange much information in numerical outlines as well as providing valid and objective descriptions of what was being researched.

1.7.1 Population

Three out of twelve campuses of the University of Namibia were purposively chosen for this study. The three campuses were selected on the understanding that: each campus had a well-established library in terms of the collection that it houses and the online

information services that it provides access to. Other selection criteria included: student enrolment, geographical location, and the presence of undergraduate programs.

The objective population of this study was the undergraduate students and library staff in the chosen campuses. Undergraduate students were selected using a stratified random sampling technique, while library staff were purposively selected.

1.7.2 Data collection method

Data was gathered through self-administered questionnaires to students and library staff, respectively, utilizing a cross- sectional survey (see Chapter Three).

1.7.3 Data analysis

The information gathered was analyzed using SPSS software and presented in charts, graphs and tables. The utilization of charts and tables in breaking down quantitative data is supported by Neuman (2014), who fortifies that one ought to think about utilizing charts, graphs and tables in analyzing quantitative data.

1.8 Ethical considerations

The study got ethical clearance in accordance with the UNISA Research Ethics Policy of 2007 amended in 2012. UNISA's approach to research ethics guarantees that the

rights and interests of human respondents and organizations are secured (UNISA, 2007). Respondents were assured that their participation in the survey was optional and that the study was exclusively to complete a Master's dissertation. The approval to lead an investigation on the UNAM sites was acquired from the Research and Publication Office of the University of Namibia.

1.9 Scope and limitation of the study

This investigation was limited to three campuses of UNAM, namely, Neudamm, Khomasdal, and José Eduardo dos Santos. This limitation was necessary fundamentally because of time, constrained monetary assets and the difficulties that would have arisen had the researcher sought to undertake this research at all the UNAM campuses because of their being scattered in different geographical parts of the country.

In order to further delimit this study, only full-time undergraduate students participated in the study, thus excluding part time, distance, and post-graduate students, and academic staff of the University of Namibia. Postgraduate students were excluded on the assumption that they have reached a level in their studies where they are already engaging in academic research projects and are not likely to be experiencing difficulties accessing and using online information resources. However, this is an assumption that should be investigated further.

The study effectively reflects the situation and the needs of full-time undergraduate students. As a result of these delimitations, the generalization of the research findings is

only appropriate to the campuses included in the study. The recommendations are, however, applicable to the various campuses of the University of Namibia.

1.10 Chapter summary

This chapter discussed the foundation and background for the study. It further touched on the purpose and outlined the study objectives and research problem. The researcher, furthermore, provided detailed discussions on the justification of the study, significance of the study, definition of key terms, key theoretical frameworks, the research methodology and design, ethical considerations, scope and limitations of the study were explained. The next chapter discusses related literature and the theoretical framework relevant to the study.

CHAPTER TWO

LITERATURE REVIEW AND THE THEORETICAL FRAMEWORK OF THE STUDY

2. Introduction

Chapter One introduced the research problem relating to the utilization of electronic resources at selected UNAM campuses. This chapter reviews literature and the theoretical framework relevant to this study. It seeks to give an understanding of what electronic resources are used in academic libraries, as well as the reasons for their usage.

The chapter starts by providing clarity on how the study objectives were connected to the theoretical framework for this study, as illustrated in Figure 2.1. However, the main focus of the review is on the following: theoretical framework of the study; related studies on electronic resources used by undergraduate students worldwide and in Africa; historical background to electronic resources in academic libraries; provision of electronic resources a university environment; types of electronic resources in academic libraries, students' awareness of electronic resources at universities; electronic information sources preferences at universities; the rationale of accessing and using electronic resources in academic libraries; users' electronic resources usage training programs in academic libraries; accessibility and issues affecting access to, and use of electronic resources within universities; and lastly, the synthesis of the literature review and chapter summary.

In reviewing literature for this study, it was necessary to evaluate the sources and examine those that were most applicable to electronic resources utilization in academic libraries by undergraduate students worldwide and in Africa. Attempts were made to ensure that a higher percentage of sources used were not older than six years.

2.1 Literature review map

A literature review map outlines previously conducted studies represented ordinarily in figures and composed of various elements, which include hierarchical structures, flows charts and circles (Creswell 2014). The fundamental aim of the literature review map created for this investigation was to clarify how the study objectives were connected to the theoretical framework underpinning this specific study. Figure 2.1 presents the literature review map developed for this study. The overall topic, “Access and use of electronic resources at selected UNAM Campuses”, is placed at the top of the hierarchy, and this leads to the theoretical framework for the study, i.e. UTAUT and TAM models. The six broad sub-topics namely: Provision of electronic resources in academic libraries, Students’ awareness of electronic resources, Most preferred e-resources, Rationale towards e- resources, Users’ training programs, and issues affecting access to, and use of, e- resources, follow the general topic down the hierarchy. At the end of the map are the related studies conducted worldwide and in Africa, followed by the synthesis of the literature review, which is linked to the overall topic at the top and the theoretical framework.

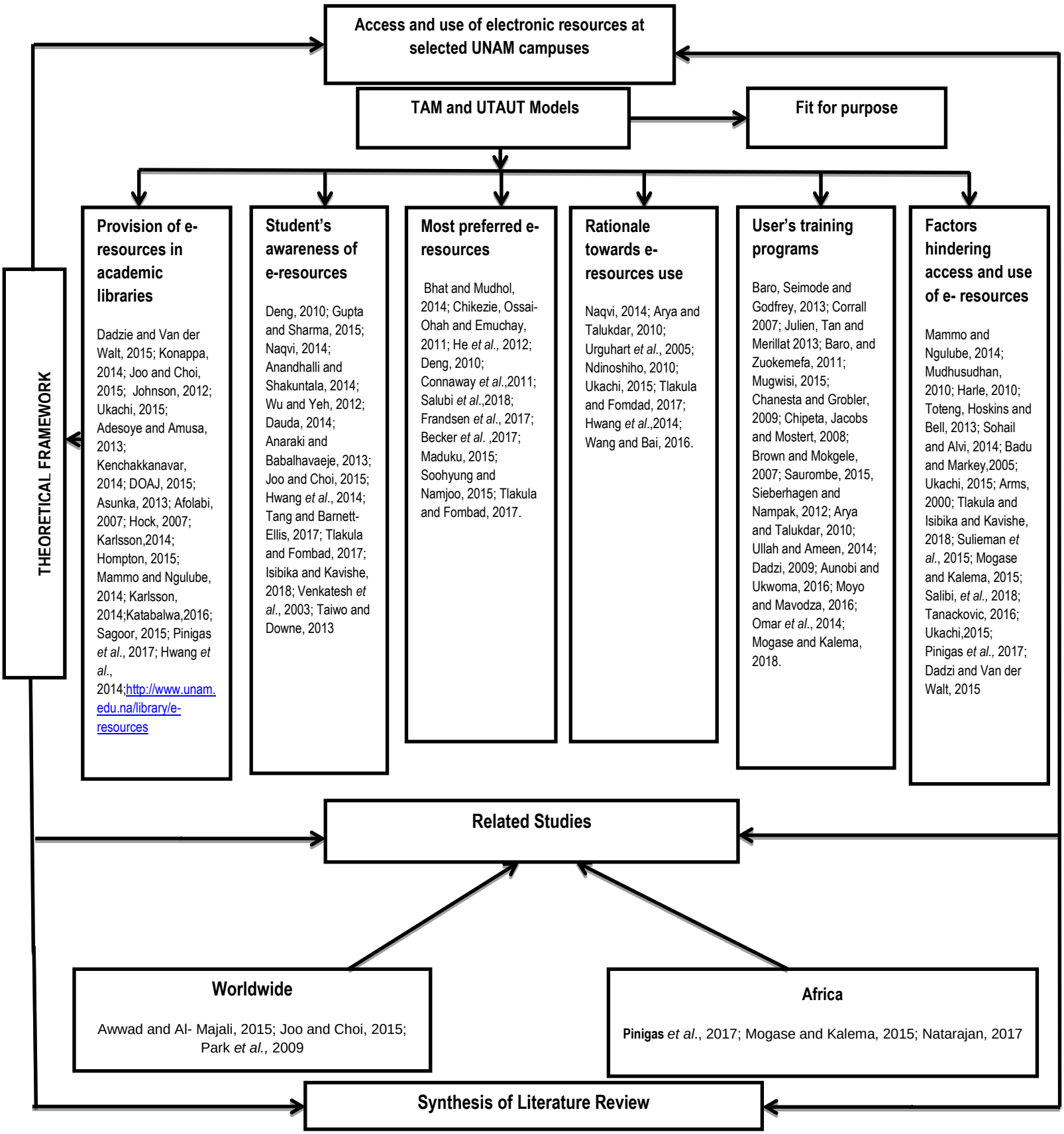

Figure 2.1: Literature review map

2.2 Theoretical framework of the study

The theoretical framework, according to Neuman (2014), can be regarded as a general theoretical system comprised of possible assumptions, key concepts and specific social theories. In this study, the theoretical framework provides the link to the literature review, the research approach and the subsequent discussions of the research findings.

2.2.1 Technology acceptance model (TAM)

The technology acceptance model (TAM) was created by Davis (1989) to clarify personal computer (PC) utilization conduct. The model depended on the Theory of Reasoned Action (TRA), which recommends that convictions impact frames of mind, which, thus, lead to intentions and, after that, generate behavior (Lu *et al.,* 2003). TAM suggests that, when libraries and users are provided with electronic resources, various elements impact their choices relating to how and when electronic resources will be utilized.

Such factors incorporate perceived usefulness (PU), portrayed by Davis (1989) as when people trust that using an explicit information system would enhance their job performance. The perceived usefulness element, as defined above, is relevant to the study because undergraduates believe that using computer systems connects them to online databases and/-or the internet. Information systems and other electronic devices enable them to search for information electronically, which enhances their academic activities. It follows that students can read and search for information to undertake assignments and research faster using electronic resources. Perceived ease of use (PEOU) is defined by Davis (1989) as when a person believes that he or she will utilize

a particular system with ease. PEOU is another element in the theory that is relevant to this study. The ability of students to accept and use electronic devices increases their usefulness, and learning becomes easier because the amount of effort required to search for information is reduced.

Perceived usefulness is accepted to be affected by the perceived ease of use (Davis 1989). In the event that a system is easy to utilize, it is accepted to be helpful and useful (Venkatesh and Davis 2000). Nonetheless, the other determinant of TAM's perceived ease of use demonstrates an altogether reduced effect on the aim to utilize information system (Venkatesh and Davis 2000).

Numerous studies have been undertaken that included the adoption of online library resources in the scholarly setting using TAM (Joo and Choi 2015, Miller and Khera 2010, Park *et al.,* 2009, Tella 2011, Wiese and du Plessis 2014). In their study, Wiese and du Plessis (2014) used TAM to explore students' acceptance and use of e-textbooks at the University of Pretoria, South Africa. The study found that, because of the perceived usefulness and the simplicity of use, e-textbooks were utilized at the university. Another survey conducted by Joo and Choi (2015) in the United State of America revealed that undergraduate students' intentions to use online library services is impacted by both the usefulness and the perceived ease of use.

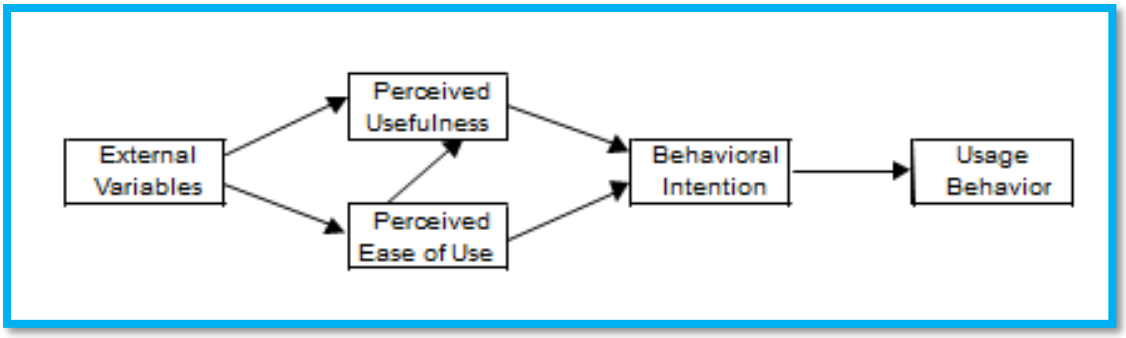

Figure 2.2 Technology Acceptance Model (TAM)

(Source: Venkatesh and Davis, 1996:476)

The final version of the TAM model as in Figure 2.2 was developed by Davis and Venkatesh in 1996. The two authors eliminated the attitude construct, as they maintained that attitude assumed an insignificant role in system utilization conduct. After a comprehensive review of the TAM model, it was assumed that the model is important and helpful for envisioning students' acknowledgement of new advancements in technology such as electronic resources. In accordance with the objectives of this study, TAM is considered well-suited to investigate factors surrounding technology acceptance (electronic resources) by undergraduate students at selected UNAM campuses.

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT) model

Formulated by Venkatesh *et al.,* (2003), the Unified Theory of Acceptance and Use of Technology (UTAUT) was also adopted as the study theoretical framework. The theory was developed through an analysis and combination of eight other theories and models, in particular: The Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behavior (TPB), a combined

TPB/TAM, the model of PC Utilization, Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT) (Venkatesh *et al.,* 2003, Williams*,* Rana and Dwived2015).

The UTAUT model provides a valuable tool to members of management when they need to evaluate the probability of a specific technology introduction and also help members of management to comprehend the drivers of technology acceptance (Venkatesh *et al.,* 2003). It further assists management to proactively structure mediations, including training and marketing, focused at users who conceivably are not empowered and confident enough to utilize information systems (Kripanont 2007, Venkatesh *et al.,* 2003).

Performance expectancy, effort expectancy, social influence, and facilitating conditions are the four variables that explain the UTAUT model (Venkatesh *et al.,* 2003). These factors are illustrated in Figure 2.3. Furthermore, gender, age, experience and voluntariness of use are the four key UTAUT moderator variables. This study, however, did not consider the effects of these moderators in the UTAUT model due to its more limited scope.

As indicated by Venkatesh *et al.,* (2003), the three UTAUT variables, namely; performance expectancy, effort expectancy, and social influence are considered to influence behavioral intentions, whilst use behavior is influenced by behavioral intentions and facilitation conditions.

The following is a description of the UTAUT variables and their specific application to this study.

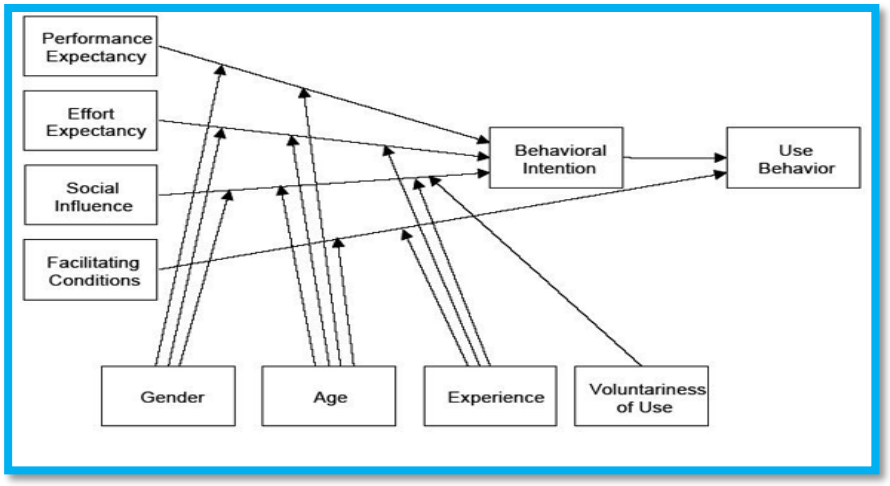

Figure 2.3: The interrelatedness of the determinants of UTAUT

(Source: Venkatesh *et al.,* 2003: 447)

2.2.2.1 Performance expectancy: is how much a student trusts that to access and utilize electronic resources certainly helps to discover pertinent information to complete assessment undertakings and obtain high grades.

2.2.2.2 Effort expectancy: The level of effortless ease of access and utilization of electronic resources. In TAM, effort expectancy is considered similar to the perceived ease of use. According to Venkatesh *et al.,* (2003), effort expectancy influences behavioral intention to use information systems/ electronic resources.

Several studies (Awwad and Al-Majali 2015; Sargent, Hyland and Sawang 2012; and Venkatesh and Davis 2000) demonstrated that effort expectancy had a positive and salient association with the behavioral intention to accept information systems. Moreover, the model proposes that students are possibly going to indicate enthusiasm for electronic resources usage on the off-chance that they think that it is simple to

access and use. In essence, this implies that users of the system might be unwilling to embrace a complex system or a web interface once it is found to be hard to explore (Byun and Finnie 2011).

2.2.2.3 Social influence: is how much students see how vital others trust that they should use electronic resources. Put differently, how students perceive that their lecturers, tutors and library staff believe they should use electronic resources in their studies.

2.2.2.4 Facilitating conditions: This simply refers to how much students believe that their university ICT infrastructure facilities and enabling electronic information environment are in place to enhance access and use of the electronic resources. This variable, in the context of this study, is about whether ICT facilities, library support services (such as training) are available to enable students to access and use electronic resources in an optimal manner.

2.2.2.5 Behavioral intention

Behavioral intention refers to the willingness of individual to use information technology (Davis 1989). With regards to this study, it refers to students' intention to continuously and regularly access electronic resources in the future to obtain information for academic work. Behavioral intention has been observed to be the most grounded forerunner to the genuine use of technology (Davis *et al.,* 1989, Venkatesh *et al.,* 2003).

As indicated by Davis (1989) behavioral intention and actual technology use are affected by external factors which affect perceived usefulness and perceived ease of use. Factors that affect behavioral intentions, adoption and use of electronic resources

include facilitating conditions, awareness, accessibility, self-efficacy relevance, attitude, and credibility (Awwad and Al-Majali 2015, Chang *et al.,* 2015, Joo and Choi 2015, Miller and Khera 2010, Park *et al.,* 2009, Tella 2010).

In South Africa, Maduku (2015) studied tertiary education students' behavioral intentions to use e-books in five tertiary institutions using the UTAUT model and found that performance expectancy, social influence and facilitating conditions influence behavioral intentions significantly.

Studies that explored the acceptance and usage of information systems and technology have adopted the technology acceptance and use models and theories as the theoretical framework (Williams, Rana and Dwived 2015). Various studies have used UTAUT to investigate the acceptance and usage of electronic resources in higher learning institutions in Africa and other parts of the world (Awwad and Al-Majali 2015, Chang *et al.,* 2015, Pinigas, Cleopas and Phiri 2017).

Awwad and Al-Majali (2015) conducted a study to assess electronic library services in public Jordanian universities and found that students' intention to use electronic library services is subject to performance expectancy, effort expectancy and social influence, while students' use behavior is reliant on facilitating conditions and intention to use.

Another study by Chang *et al.,* (2015) examined library electronic resources usage in Taiwanese public and private universities. The study revealed that behavioral intention is affected by performance expectancy and social influences.

Furthermore, Pinigas, Cleopas and Phiri (2017) employed the UTAUT2 model to explore the acceptance of electronic resources by students in three Zimbabwean state

universities. The results reveal that social influence is the major factor affecting students' behavioral intention to use electronic resources.

In light of this, TAM and UTAUT were identified as the most appropriate models, as they help to understand usage and behavior intention of undergraduate students to use electronic resources. The models (TAM and UTAUT) were selected, given that they use behavioral intention to predict usage of a system by a user by focusing on determinants, such as performance expectancy, effort expectancy, social influence, facilitating conditions, perceived usefulness and perceived ease of use, which are not found in literacy models. The literacy models were found to be not correspondingly useful in determining students' behavior intention to use electronic resources. Figure 2.4 below presents a single integrated model developed for this study based upon the description provided in section 2.2.

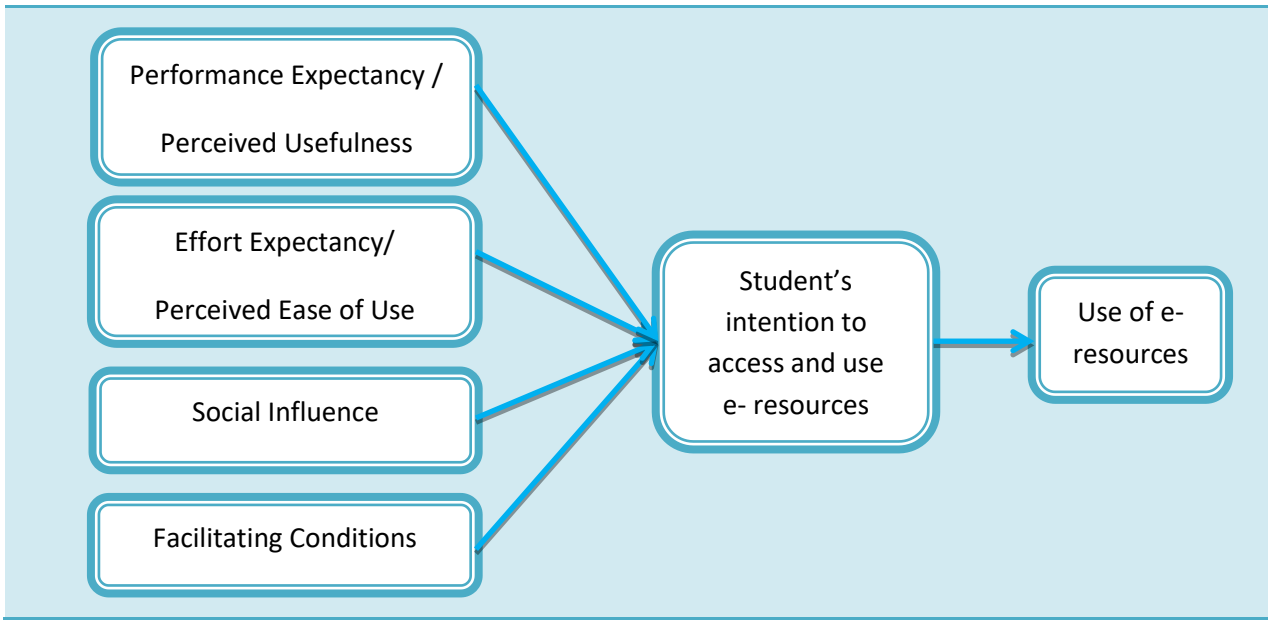

Figure 2.4: Modified Unified Theory of Acceptance and Use of Information Technology UTAUT

Source*:* Modification from Venkatesh *et al.,* (2003:447)

2.2.3 The link between the theoretical framework and the research problem

The theoretical framework for this study is drawn from the Technology Acceptance Model and the Unified Theory of Technology Acceptance and Use of Technology. The research problem of this study is underpinned by the UTAUT theory which is the main theory and is supplemented by TAM. Due to the validity and reliability in determining factors affecting the acceptance and use of electronic resources, a mix of UTAUT and TAM was embraced as the theoretical framework for this study.

Using UTAUT and TAM, this study combined four constructs from UTAUT and two from TAM to understand the factors that determine the acceptance and use electronic resources by undergraduate students at selected campuses of the University of Namibia. Table 2.1 presents the research questions and how they are aligned with variables of theoretical models used in this study.

Table 2.1: Mapping of research questions to constructs of UTAUT and TAM

Question no.	Research questions	TAM and UTAUT attributes	Theoretical models
1	**Which electronic resources are available at UNAM libraries**	Facilitating conditions	UTAUT
2	**What is the level of awareness of undergraduate students of UNAM about electronic resources?**	Facilitation conditions, social influence	UTAUT

3	**Which electronic resources do undergraduate students prefer to use?**	Perceived usefulness, actual use, behavioral intention	TAM and UTAUT
4	**What training programs are in place at UNAM libraries?**	Facilitation conditions	UTAUT
5	**If there are training programs in place, how effective are these training programs?**	Facilitation conditions, perceived usefulness	TAM and UTAUT
6	**How do undergraduate students get to electronic resources?**	Perceived ease of use	UTAUT
7	**What issues do undergraduate students experience when utilizing electronic resources?**	Perceived ease of use, facilitating conditions	TAM and UTAUT

2.3 Review of related studies

Previous studies related to this study are discussed in sections which include: related studies on electronic resources used by undergraduate students worldwide and in Africa, the advancement of the concept of electronic resources, the provision of electronic resources in academic environments, students' awareness and use of electronic resources at universities, electronic information source preferences at universities, the rationales that exist with regards to accessing and using electronic resources in academic libraries, users' electronic resources usage training programs in academic libraries, and issues affecting access to, and the utilization of electronic resources at universities. These overarching issues are related to worldwide and African studies.

2.3.1 Related studies on electronic resources used by undergraduate students worldwide and in Africa

Various investigations on aspects identified with the utilization of electronic resources in institutions of higher learning in general both in Africa and across the wider world have been investigated and documented. From a worldwide perspective, Awwad and Al-Majali (2015) applied the Unified Theory of Acceptance and Use of Technology (UTAUT) model to electronic library services in public Jordanian universities. Joo and Choi (2015) explored multiple factors affecting online library resource selection by undergraduate students in a state university in the USA whilst Park *et al.,* (2009) examined the factors that influence people's adoption and use of digital library systems and tested the applicability of the Technology Acceptance Model (TAM) to the context within developing countries.

From the African perspective, Mogase and Kalema (2015) assessed electronic resource usage in South African higher institutions of learning. Pinigas, Cleopas and Phiri (2017) assessed the acceptability of electronic resources by students in Zimbabwean state university libraries. In addition, Natarajan (2017) described the use of electronic resource and the services provided by the social science library of Jimma University in Ethiopia. These past investigations have informed this study as they are all related. It is, in any case, the studies undertaken by Awwad and Al-Majali, (2015), Natarajan (2017), and Park *et al.,* (2009) which have the most direct relevance to this study, although each employed different data collection and analysis techniques.

2.3.1.1 Awwad and Al- Majali study

Awwad and Al-Majali (2015) applied the unified theory of acceptance and use of technology (UTAUT) model to electronic library services in public Jordanian universities.

The study was conducted at four universities in Jordan, to be specific: the University of Jordan, Yarmouk University, the University of Mutah, and Hashemite University.

Five hundred and seventy-five students participated in the survey and a questionnaire was used to gather quantitative data. The study's findings demonstrated that students' aim to use electronic library services is subject to performance expectancy, effort expectancy and social influence, while facilitating conditions and intention to use influence students to use electronic library services (Awward and Al-Majali 2015).

2.3.1.2 Natarajan's Study

Natarajan (2017) carried out a study on the use and impact of the electronic resources upon information science students at Jimma University in Ethiopia. The study aimed to describe the use of electronic resources and services provided within the social science library of Jimma University. The study adopted a survey method and 182 undergraduate information science students participated in the survey.

Self-administered questionnaires were used to gather data from undergraduate students during 2015-2016 academic years. Overall, the response rate of 81.32% was encouraging. Although the study used the questionnaire method for collecting the data, the researcher did not provide sufficient information on the data analysis techniques used. For instance, the researcher did not spell out the tools used in the study to analyze research data. The paper focused on finding out which resources were used most by the students of information science as well as ascertaining how frequently they used electronic resources and establishing from where such resources were accessed. Further, the students were requested to remark upon their inclinations identified with

utilization of journals both in digital and print formats. It was found that students were aware of the electronic resources and increased use of electronic journals was evident (Natarajan 2017).

2.3.1.3 Park, Roman, Lee and Chung study

Park *et al.,* (2009) examined the factors that influence people's adoption and use of digital library systems and tested the applicability of the Technology Acceptance Model (TAM) in the context of developing countries. Factors, which affected users in research institutions with specific reference to their adopting and use of the online library system, TEEAL were explored.

The study surveyed 16 institutions in Africa, Asia and Central/ Latin America. A survey questionnaire was used and handed to 1370 users of the TEEAL system at the 16 institutions and yielded a response rate of 79%. Convenience sampling as a sampling method was used to select the institutions which were targeted to take part in the survey. The study concluded that perceived usefulness played a fundamental role in explaining behavioral intention to use the digital library system TEEAL across continents (Park *et al.,* 2009).

2.3.2 Historical background to electronic resources in academic libraries

According to Harthorne (2008), libraries in the mid-1960s started using the Machine-readable Cataloguing (MARC) format. MARC was followed by the development of the Online Public Access Catalogue (OPAC). The library card catalogue which served as the gateway to the library collection was quickly replaced by the online catalogue in the mid-1980s (Hawthorne 2008). Bibliographic databases were introduced in the late

1980s and CD- ROM databases were developed. Online databases and the internet took center stage at the beginning of the 21st Century; resulting in the development of electronic books and journals.

Shuling (2007) affirms the advancement of electronic resources have transformed step by step into vital and noteworthy resources in every university library, as students and academics are now presented with a wide array of insightful global access to electronic resources to enhance their scholarly work (Shuling, 2007).

2.3.3 Provision of electronic resources in a university environment

In recent years, university libraries across the globe have become far more than simple storage of print collections, expecting library users to utilize the information physically held. Instead, they have become nodes that offer online resources, which users can access from anyplace (Dadzie and Van der Walt 2015). The major benefit of electronic resources in university libraries is that access can be achieved remotely (Johnson *et al.,* 2012). Mammo and Ngulube (2014) also argued that university libraries are moving away from a scholarly communication model based on print sources to one based on electronic information.

Electronic resources are an undeniably imperative part of libraries' collections (Konappa 2014). Further, Appleton (2006) asserts that research and development activities and the possibility to substantially improve how individuals locate and access information is enhanced by electronic information. Electronic resources are, as per existing literature, essential to students in their scholarly and lifelong learning. Ukachi (2015) opined that

individuals in academic institutions are empowered as they now have access to the most recent information published online.

2.3.4 Types of electronic resources in academic libraries

Table 2.2: Types of electronic resources

Types of e-resources	Description
E-book	E-books are a computerized adaptation of a printed book that can be perused on electronic devices, for example, PCs or hand-held devices, for example, individual advanced partners (PDAs), tablets and cellphones. E-books are continuously assuming a central role in teaching, learning and research as they enable incremental access to opportune and insightful scholarly materials (Asunka 2013). Thus most academic libraries currently provide e-book access through subscription services or through direct purchase and provide them to library users via the library OPAC or websites (Asunka2013).
E-journal	E-journals are journals in a computerized format to access by means of a web browser on a PC or other electronic devices (Johnson *et al.,* 2012). Examples of e- journals are: African Journals Online (AJO) and the Directory of Open Access Journals (DOAJ) (DOAJ 2017).
Indexing and abstracting databases	These are the reference sources which give bibliographic information about journals including abstracts of the articles: for example SCOPUS.
Full-text databases	Full text databases are organized collections of information pertaining to particular subjects or multidisciplinary subject areas. Information inside full text databases can be sought and retrieved electronically. Examples of full-text databases are for example: the Access to Global Online Resources in Agriculture (AGORA) database, Emerald, Science Direct and EBSCOhost. They are either free or come with charges (Kenchakkanavar 2014).
Reference databases	Reference databases are online reference sources comprised of dictionaries, almanacs, and encyclopedias.
E- theses	These databases are comprised of PhD theses and dissertations accessible online.
OPAC	The Online Public Access Catalogue (OPAC) acts as an information retrieval system for library users. It can also be defined as a computerized database of a library's holdings. OPACs allow searches by author, title, subject, keyword, call number, publisher, place of publication, and year of publication.
E- past exam papers	These are online electronic versions of past exam papers made available by faculties.
CD- ROM databases	Storage devices that are designed to store computer data in the form of text and graphics, as well as sound.
Internet search engines	Search engines, according to Hock (2007:63), can be regarded as software used to search databases for information. The search engine enables one to search by means of keywords, and subjects.

Globally, various studies revealed that diverse sorts of electronic resources were made accessible in academic libraries both in developed and developing countries.

Hampton (2015), Hwang, Jayhoon and Hwan (2014), Karlsson (2014), and Min and Yi (2010) identified e-journals, e-books, online databases, online computer catalogue (OPAC), CD-ROM databases and internet resources as the most widely recognized kinds of electronic resources accessible in academic libraries in Sweden and the USA. Meanwhile, Katabalwa (2016), Mammo and Ngulube (2014), Pinigas, Cleopas and Phiri (2017) and Satgoor (2015) have identified the same types of electronic resources as being available in academic libraries in Africa.

In Sweden, the Swedish Uppsala University library acquired electronic information resources at the expense of 33.7 million SEK 73% of the aggregate expenditure on the procurement of information resources (Karlsson 2014). While in the USA, The Xavier University of Louisiana, subscribed to electronic resources to back up the greater part of its print collection in 2013 (Hampton 2015).

In China, Min and Yi (2010) found that the Tsinghua University library had a subscription of up to 450 databases. Similarly, Hwang, Jayhoon and Hwan (2014) reported that e-book usage and subscriptions at university libraries in South Korea have significantly increased.

In Africa, Mammo and Ngulube (2014) reported that all seven universities targeted by their study in Ethiopia were providing access to full-text electronic information resources. In South Africa, according to Satgoor (2015), electronic resources have been

made accessible by the South African National Library and Information Consortium (SANLiC) which ensures affordable access to its institutional members.

The situation is the same in Zimbabwe, according to Pinigas, Cleopas and Phiri (2017), as the university libraries targeted by their study were found to be providing electronic resources that were subscribed to by the Zimbabwe University Library Consortium (ZULC). Likewise, Katabalwa (2016) uncovered that the initiatives of the International Network for the Availability of Scientific Publications (INASP) assisted the University of Dar e Salaam immensely with subscriptions to journal databases accessible by faculty members, students and researchers.

2.3.5 Students' awareness of electronic resources at universities

Awareness on the part of students regarding the existence of online information resources is crucial, as this translates into optimal use of electronic resources. When electronic resources are made available in universities, their existence should be made known to the university community to explore fully the benefits that come with them. A study conducted by Joo and Choi (2015) at the University of Kentucky in the United States of America revealed the intention to use online library resources is affected significantly by individual familiarity with such resources combined with adequate searching abilities.

From the literature, the level of awareness and use of electronic resources differ from institution to institution around the world. Higher awareness and use of electronic resources have been reported by several studies in academic institutions (Anandhalli

and Shakuntala 2014, Gupta and Sharma 2015, Hwang, Jayhoon and Hwan 2014, Isibika and Kavishe 2018, Naqvi 2014).

In India, studies by Anandhalli and Shakuntala (2014), Gupta and Sharma (2015), and Naqvi (2014) uncovered that various electronic resources were well known to be available and used by undergraduate students at their respective institutions. For example, Naqvi (2014), in a study on awareness, use, and impact of electronic information services at JNMC Library, India, confirmed that 90% of undergraduate students were aware and utilized electronic resources.

Similarly, in South Korea, Hwang, Jayhoon and Hwan (2014) reported that most (90%) e-books users at the university libraries in Korea knew that e-books were accessible through the libraries websites. The study further revealed that user's' e-book experiences were comparatively poor. In Ethiopia, Natarajan's (2017) study found that e-journals have been found to be increasingly utilized with information science students appearing to be more familiar with the existence of such resources. In Tanzania, a recent study by Isibika and Kavishe (2018) at Mzumbe University Library revealed that participants were knowledgeable of the electronic resources available to them from the library.

In contrast, several studies by Anaraki and Babalhavaeje (2013) in Iran, Dauda (2014) in the Philippines, Tang and Barnett-Ellis (2017) in the USA, and Tlakula and Fombad (2017) in South Africa reported that students were not familiar with electronic resources and, as a result, there was low usage of such resources at their respective institutions.

In the Philippines, a study by Dauda (2014) at the University of Philippines revealed that, due to lack of students' awareness of electronic resources, the utilization was reported to be minimal.

Similarly, Anaraki and Babalhavaeji (2013) surveyed medical students from Iranian universities and found that lack of awareness, as shown by 52% of the surveyed students, was the main hindrance to the use electronic resources available in their academic libraries. Tang and Barnett-Ellis (2017), in their study of Jackson ville State University in the USA found that 50% of the students surveyed indicated that they were not aware of the availability of an e-book collection.

Furthermore, in South Africa, a study by Tlakula and Fombad (2017) attempted to investigate the use of electronic resources by undergraduate students at the University of Venda. The findings revealed that undergraduate students were unable to differentiate between electronic resources and web-based internet sources due to lack of awareness to distinguish the two online resources. The above findings imply that students' lack of familiarity with electronic resources could possibly be a result of inadequate marketing and promotional campaigns to make students aware of the availability of such resources at their respective institutions. It is therefore imperative that academic libraries should constantly popularize their electronic resources more to increase appreciation of these resources.

2.3.6 Electronic information sources preferences at universities

Although electronic resources are made available in academic libraries, preferences vary among the student populations as far the use of electronic resources is concerned.

Some electronic resources appeared to be highly preferred and used as compared to others. This section of the literature analyzes which electronic information resources are used and preferred by students in academic institutions in developed and developing countries.

A number of studies, including Becker, Hartle and Mhlauli (2017), Bhat and Mudhol (2014), Cannaway, Dickey and Radford (2011), Chikezie and Emuchay (2012), Deng (2010), Frandsen *et al.,* (2017), He *et al.,* (2012), Maduku (2015), and Salubi, Ondari-Okemwa and Nekhwevha (2018) have been conducted on the preferences of students for different electronic resources in academic libraries in different parts of the world. For example, in Australia, Deng (2010) found that students preferred to use electronic resources to meet their information needs.

In India, Bhat and Mudhol (2014) found that a large number of medical and business students preferred using search engines to other digital resource to access information. Cannaway, Dickey and Radford (2011) found that search engines were highly favored and preferred by undergraduate students when accessing information for academic purposes.

A recent study carried out by Salubi, Ondari-Okemwa and Nekhwevha (2018) at the Nelson Mandela University and the University of Fort Hare found that the majority (69.5%) of the students never used e- journals, 56.3% did not consult library databases, while 69.5% never used e-books. In a study conducted by Tlakula and Fombad (2017) it was found that, among undergraduate students at the University of Venda, an

incredibly large number of students preferred Google and Google Scholar, while only one student preferred to use e-books.

Similarly, He *et al.,* (2012) found, in their comparative study of China and the USA, that library subscription databases were least preferred and used compared to Google Scholar. Frandsen *et al.,* (2017) observed that Google was the most popular internet source and further noted that everywhere throughout the world; academic libraries are battling with low use of subscription based resources.

On the other hand, literature revealed that the situation in Africa, in as far as electronic resources preferences are concerned, is different to that of India, the USA and China as electronic resources, such as online database, e-books, and e- journals were found to be preferred by students in academic institutions in Africa.

In Nigeria, a study by Chikezie and Emuchay (2012) found that online resources, such as online databases, e-books and e-journals were most preferred in Nigerian academic libraries, as they offer students access to a wide range of information for study and research purposes. They found that electronic books were preferred and mostly utilized by students in preference to e-journals and e-theses, while mobile phones and cyber cafés were used to access online resources.

In South Africa, Becker, Hartle and Mhlauli (2017) reported that students at the Cape Peninsula University of Technology preferred using online resources and recorded that there had been a 93% increase in e-book page downloads since 2011. Similarly, Maduku (2015) reported that, among the 312 tertiary education students in the Gauteng Province of South Africa, who used e-books, 130 (41.7%) had found them useful.

2.3.7 The rationale for accessing and using electronic resources

The interest in understanding why students utilize library electronic resources is not surprising in light of the fact that the library university administrators might want to establish whether the funds allocated to procure electronic resources are justifiable (Ndinoshiho, 2010). In their studies, Arya and Talukdar (2010), Hwang, Jayhoon and Hwan (2014), Naqvi (2014), Tlakula and Fombad (2017) Ukachi (2015), Urquhart *et al.,* (2005), and Wang and Bai (2016) investigated why various electronic resources are accessed and used.

With regards to the internet, a study conducted in fifteen education colleges in the UK reported that students search for online lists of products with the purpose of conducting online shopping (Urquhart *et al.,* 2005).

In India, Arya and Talukdar (2010) surveyed 120 students from the Delhi College of Engineering Library. The results of the study demonstrated that the Web was used by 79% of the students mainly for study/- research- related work. Sixty-four per cent used the internet to keep up with new subject matters and 56% used the internet to obtain information updates.

As far as libraries electronic resources are concerned, Hwang, Jayhoon and Hwan (2014), Naqvi (2014), Tlakula and Fombad (2017), Ukachi (2015) and Wang and Bai (2016) have highlighted various reasons for which electronic resources were used by undergraduate students. These included preparing homework, completing assignments, to learn, to obtain current information and research resources, to update their

knowledge and study purposes. Nagvi (2014) found similar results and noted that students used electronic resources primarily for educational purposes at Jawaharlal Nehru Medical College (JNMC) in India.

In China, Wang and Bai (2016) reported that undergraduate students at Zhejiang University utilized digital books fundamentally with the end goal of relaxation. This finding is consistent with the study of Hwang, Jayhoon and Hwan (2014), who found that users at university libraries in South Korea utilized digital books for relaxation purposes.

A study carried out by Ukachi (2015) among undergraduate students at the University of Lagos revealed that students used electronic resources for academic purposes specifically to search for recent publications pertaining to their studies, complete assignments, research and project writing. Similarly, a recent study conducted by Tlakula and Fombad (2017) discovered that a great majority of undergraduate students at the University of Venda used Sabinet African Journals and EBSCOhost databases to access e-journals. It is apparent in the above discussion that respondents in the studies had utilized the available electronic resources for meeting their day by day information needs.

2.3.8 Users' electronic resource usage training programs in academic libraries

Information literacy programs in institutions of higher learning have been established with specific emphasis on enhancing students' competency and empowering them to become effective information seekers (Baro, Seimode and Godfrey 2013). Numerous studies on various information literacy aspects among students have been undertaken

both in academic institutions and in countries that possess advanced information literacy systems, particularly the USA, UK and Canada (Baro, Seimode and Godfrey 2013, Corrall 2007, Julien, Tan and Merillat 2013).

Similar studies have been conducted in other parts of the world. These include Ullah and Ameen (2014) in Pakistan. Equally, in developing nations in Africa, a number of such investigations have been undertaken (Aunobi and Ukwoma 2016, Brown and Mokgele 2007, Chanesta and Grobler 2009, Moyo and Mavodza 2016, Mnkeni-Saurombe 2015, Mugwisi 2015, Omar, Haji and Mwitube 2014 and Sieberhagen and Nampak 2012).

International studies and related studies conducted in Africa on the training interventions in academic libraries have been reviewed.

Writing on information literacy programs in university libraries in the UK, USA, and Nigeria, Baro, Seimode and Godfrey (2013) revealed that university libraries in the UK and the USA provide information literacy training in a greater number of areas than their counterparts in Nigeria. This may be a direct result of the absence of ICT facilities and staff with competencies to provide training effectively in Nigeria.

In his survey in universities in the UK, Corall (2007) revealed that 75% of undergraduate and postgraduate students are taught information literacy courses, which are embedded in universities' curricula and that the anticipation was to achieve 100% full participation. In Canada, Julien, Tan and Merillat (2013) conducted a survey in academic libraries. The results showed that 89% of respondents received training. Training was provided

on how to use online databases, catalogue/OPAC, and search strategies for Boolean operators, library use in general, the internet, and electronic documents.

Challenges reported in providing instruction covered an array of issues such as the integration of information literacy into curricula, lack of pedagogical and instructional experience amongst librarians, and lack of time and resources.

Further, Ullah and Ameen (2014) examined information literacy practices in medical libraries in Pakistan. The study uncovered that in their institutions, a few kinds of information instruction were offered by librarians earlier in the academic year, ranging from library orientation to research proficiency. The study concluded that information literacy interventions in the libraries are in their earliest stages and that librarians need efficient ways to offer information literacy instruction, as they lack coordinated approaches in the program offering.

In Africa, studies conducted by Aunobi and Ukwoma (2016), Chanetsa & Grobler (2009), Mogase and Kalema (2018), Moyo and Mavodza (2016), Mugwisi (2015), Omar, Haji and Mwitube (2014), and Tlakula and Fombad (2017) found that, regardless of difficulties, which negatively affected the capacity of libraries to administer training programs, training was offered to the users in some libraries. A recent study by Aunobi and Ukwoma (2016) established that well-coordinated training programs are not yet in place in many universities in Nigeria. The library instruction offered focused merely on library usage. In establishing whether or not universities in Zanzibar offer information literacy courses, a study by Omar, Haji and Mwitube (2014), found that there are institutions in Zanzibar which offer information literacy classes and a few which do not.

Moyo and Mavodza (2016) reported that most universities in South Africa offer students general library orientation sessions. There is developing proof of a more noteworthy number of information literacy modules being implanted in different educational programs (De Jager, Nassimbeni and Underwood 2007).

A similar study by Chanesta and Grobler (2009) at the Namibia University of Science and Technology revealed that library patrons were fully assisted to use the library resources, services and facilities as the library had in place strong user education programs.

A study by Mugwisi (2015) found that 84% of university libraries surveyed in South Africa and Zimbabwe were teaching information literacy, while 16 were not. Investigation by nation showed that 93% of South African libraries were teaching information literacy, while 73% of libraries in Zimbabwe were doing so. Respondents in the investigation were asked whether the information literacy programs were accomplishing their planned targets. It appears from the findings of the study that the majority (79%) of respondents felt that the planned targets were accomplished. By comparison, the reactions from Zimbabwe demonstrated that just 64% felt that the targets were being met.

The contents of the library training program offered to students at the University of South Africa (UNISA), according to Brown and Mokgele (2007), is similar to that of the University of Ghana. At UNISA, the library presents library skills training which consists of two separate units namely: basic library skills and advanced library skills. This finding concurs with a study by Mnkeni-Saurombe (2015) at the University of South Africa. Her

study indicated that, the training offered to distance students at UNISA library is classified into the same levels.

Due to various challenges, information literacy interventions have not yet been truly considered and actualized in many African nations (Baro and Keboh 2012). Information literacy skills training, usually involves large groups of students and this, obviously, presents libraries and librarians with many challenges. Baro, Seimode and Godfrey (2013), Moyo and Mavodza (2016) and Mugwisi (2015) all singled out key factors that hinder the successful offering of information literacy training programs in university libraries in Tanzania, the United Kingdom, Canada, the United States of America, South Africa and Zimbabwe.

Challenges experienced included: inadequate online training materials, lack of clear policies, high numbers of students against teaching librarians, a lack of support from faculty and administration, and lack of adequate ICT facilities. In contrast, the effectiveness of information literacy training was reported in a study by Sieberhagen and Nampak (2012) in which they evaluated the digital information literacy program (DILP) designed and developed for South African students. Their findings revealed that the DILP was generally effective in enhancing students' digital information literacy skills.

Different findings were revealed in a recent study conducted by Mogase and Kalema (2018) on the usage of e- resources by students at Tshwane University of Technology, which found that the training programs in place were not comprehensive enough to prepare students to fully utilize electronic resources. Similarly, Tlakula and Fombad (2017) found that at the University of Venda, training in the use of electronic resources

is as yet conventional as it is generally being offered to students in the first year in a form of orientation.

Baro, Seimode and Godfrey (2013) recommended in their study that university libraries in developing nations should prioritize the provision of adequate ICT facilities combined with training of librarians on IT to ensure effective implementation of information literacy programs. Furthermore, they called on stakeholder collaborations in formulating IL policy and ensuring implementation thereof. Despite some minor differences in terms of the training offered by academic libraries, much of which is attributable to contextual variations, what is exceptional is the fact that there is consistency worldwide in the delivery of IL training programs and the challenges encountered in the implementation of the programs.

2.3.9 Issues affecting the use of electronic resources within universities

In order to meet their information needs, students should have the capacity to access electronic resources. Arms (2000) emphasized that universities are obliged to put adequate facilities in place to enable this goal to be realized. Toteng, Hoskins and Bell (2013) mentioned that such facilities should include the number of computers provided, the existence of network systems, and convenient internet connectivity.

The following researchers Isibika and Kavishe (2018), Mogase and Kalema (2015), Salibi, Ondari-Okemwa and Nekhwevha (2018), and Tlakula and Fombad (2017), have concurred that, while electronic resources have enhanced access to information in academic libraries, there are likewise various hindrances that keep students from

completely exploring different electronic resources. Among these are issues identified with ICT infrastructure, constrained access to information technology facilities, such as deficiencies of computers, slow internet speed identified at some institutions, absence of searching abilities, and lack of knowing the available electronic resources.

With regards to ICT infrastructure, a study conducted by Mammo and Ngulube (2014) in Ethiopia indicated that poor connection due to low bandwidth, poor ICT infrastructure, and a lack of adequate fast computer to access electronic information resources, which led to poor connectivity were the top three major problems that students faced in their attempts to fully maximize and explore electronic information resources.

These findings are in line with an observation made by Madhusudan (2010), who demonstrated that it is practically impossible for one to download electronic information during the busiest hours of the day due low bandwidth. These constraints or challenges were also found in a study conducted by Toteng, Hoskins and Bell (2013) at the University of Botswana. The issues most experienced by students while getting to the databases were slow internet speed, absence of an adequate number of computers, and secret log in key requirements.

In Tanzania, a recent study by Isibika and Kavishe (2018), which investigated the utilization of subscribed electronic resources by academic staff, undergraduate students and postgraduate students at Mzumbe University Library, revealed that absence of searching abilities and unreliable internet connectivity were some of the significant obstructions subsequently leading to the under-utilization of libraries' subscribed electronic resources. Furthermore, Tanackovic, Ivanovic and Cupar (2016) observe that

limited access to databases from home was a major impediment related to electronic database use among students at three Croatian state universities.

Sohail and Alvi (2014), in a study on the use of web resources by medical students of Aligarh Muslim University in India, found that, 45.65% of students questioned stated that slow internet speed obstructed them in using the electronic resources.

On the other hand, Badu and Markey (2005) have observed that lack of searching abilities is one element that prevents the student population from utilizing various electronic resources. The observations by Badu and Markey (2005) are in line with the findings of Mammo and Ngulube (2014) and Ukachi (2015). For example, the study by Mammo and Ngulube (2014) reported that a high level of information illiteracy (lack of information skills) was an impediment to accessibility and use among users in higher learning institutions in Ethiopia.

Similarly, a lack of information searching skills was reported by Ukachi (2015) when his study found that undergraduate students at the University of Lagos do not have the information proficiency abilities important for ideal usage of the library's electronic resources. It is imperative that undergraduate students secure the search aptitudes fundamental for them to successfully utilize electronic resources so that they may subsequently improve their academic performances. Along these lines, information literacy training can be a convincing answer to building students searching skills; an answer that will positively affect user's' intentions to use electronic resources (Joo and Choi 2015).

The literature additionally shows that another significant hindrance to student's utilization of electronic resources is their absence of familiarity with the availability of such resources. For example, a study that investigated the use of electronic resources by undergraduate students at the University of Venda conducted by Tlakula and Fombad (2017), found that students' dimension of familiarity with various electronic resources was exceptionally low. This could be attributed to ineffective methods used by the library in creating student awareness of the electronic resources that it offers.

A number of studies mentioned above identified numerous physical and personal hindrances that obstruct students from viably accessing and using electronic resources in institutions of higher learning. Although some studies found a lack of adequate ICT infrastructure in some universities, certain studies provided contradictory evidence. For example, a recent study by Pinigas, Cleopas and Phiri (2017) reported that the Great Zimbabwe university, Harare Institute of Technology, and Chinhoyi university of Technology capacities and infrastructure do not altogether influence student's' choices to grasp electronic resources.

Contrary to the findings of Pinigas, Cleopas and Phiri (2017), Tlakula and Fombad (2017) noted that the absence of physical hindrances influencing the utilization of electronic resources is evident at the University of Venda (Tlakula and Fomband 2017).

Similarly, a study of three Ghanaian Universities by Dadzi and Van der Walt (2015) found that access to digital resources from the libraries was very encouraging; implying that the university's' existent level and breadth of services provision is such that they

ensure that there is adequate access to computers, and reliable and stable internet connections.

The following section discusses related studies conducted worldwide and in Africa.

2.3.10 Synthesis of the literature review

The analysis of the literature revealed that different types of electronic resources, such as e-journals, e-books, online databases and OPAC, have been provided in academic libraries both in Africa and worldwide, though this has happened at different speeds and at different levels (Hampton 2015, Hwang, Jayhoon and Hwan 2014, Karlsson 2014, Katabalwa 2016, Mammo and Ngulube 2014, Pinigas, Cleopas and Phiri 2017, Min and Yi 2010, Satgoor 2015, Ukachi 2015).

With regards to the awareness of, and actual use of, electronic resources, a few investigations have uncovered that these vary from one academic institution to another worldwide. Some authors, such as Anandhalli and Shakuntala (2014), Gupta and Sharma (2015), Hwang, Jayhoon and Hwan (2014), Isibika and Kavishe (2018), and Naqvi (2014) have revealed high awareness and usage while others (Anaraki and Babalhavaeje 2013 in Iran, Dauda 2014 in the Philippines, Tang and Barnett-Ellis2017 in the USA, and Tlakula and Fombad 2017 in South Africa) indicated low awareness and usage by student populations.

Studies conducted by researchers, such as Becker, Hartle and Mhlauli (2017), Bhat and Mudhol (2014), Cannaway, Dickey and Radford (2011), Chikezie and Emuchay (2012), Deng (2010), Frandsen *et al.,* (2017), He *et al.,* (2012), Maduku (2015), and Salubi,

Ondari-Okemwa and Nekhwevha (2018), also demonstrate that some electronic resources were preferred over others by student populations.

The analysis of literature additionally uncovered that students used electronic resources for an array of purposes (Arya and Talukdar 2010, Naqvi 2014, Ukachi 2015, Urquhart 2005, Tlakula and Fombad 2017). The need to complete assignments and research papers were two of the reasons for which most of the students utilized the different electronic resources. It also emerged from the literature that some students use electronic resources for leisure (Hwang, Jayhoon and Hwan 2014, and Wang and Bai 2016).

As demonstrated above, what is remarkable in terms of library training programs offered to students is the fact that the practices and challenges facing academic libraries are consistent globally. The manner, in which library user training programs have been executed, varies from institution to institution. Some academic libraries seem to provide students with adequate training, while others do not.

It has also turned out to be evident that major challenges to students' accessing and using electronic resources include personal and physical barriers, such as, low bandwidth, shortage of computers and off campus access, lack of familiarity with electronic resources available, and lack of basic searching skills (Isibika and Kavishe 2018, Mammo and Ngulube 2014, Tanackovic, Ivanovi and Cupar 2016, Tlakula and Fombad 2017, Toteng, Hoskins and Bell 2013, Ukachi 2015). These challenges may affect students in their efforts to access and use electronic resources effectively.

With respect to the methodology used, similar studies have used a survey method which was applied by this study to investigate access and use of electronic resources by students at selected UNAM campuses. Most of the reviewed studies adopted a survey method with self-administered questionnaire data collection tools. Studies by, amongst others, Awwad and Al-Majali (2015), Joo and Choi (2015), Pinigas, Cleopas and Phiri (2017), Mogase and Kalema (2015), Natarajan (2017), and Park *et al.,* (2009) provided insightful findings comparable to this study.

The literature revealed limited research conducted in African countries, and, with particular reference to Namibia, on technology acceptance models as the main gap. The present investigation used TAM and UTAUT models to explore student's' behaviors toward the use of electronic resources at selected campuses of the University of Namibia. This study builds on existing knowledge gaps on how undergraduate students in Namibia can effectively access and use electronic resources.

2.3.11 Chapter summary

This chapter discussed appropriate literature and the theoretical framework that influenced the study. It shed some light on the following themes and sub themes: related studies on electronic resources used by undergraduate students worldwide and in Africa, a brief historical background of electronic resources trends in academic libraries, provision of electronic resources in academic libraries, student's' awareness and use of electronic resources at universities, electronic information sources preferences at universities , rationale towards access and use of electronic resources in

academic libraries, usage training programs in academic libraries, and issues that affect access to, and use of, electronic resources at universities.

Chapter Three focused on the methodology used during this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3. Introduction

The previous chapter reviewed related literature and the theoretical framework for the study. This chapter outlines the research methodology applied in conducting this study. It describes the research paradigm, methodology, research design, the study population, sampling techniques, data collection instrument and procedures applied to gather the desired data, validity and reliability, how the data was analyzed, ethical considerations and evaluation of the research methodology.

This study employed a survey research method, which is underpinned by positivism. The choice of the survey research method was inspired by the kinds of questions asked and the data required for this study.

3.1 Research paradigm

Research paradigm, as defined by Bryman and Bell (2011), indicates a cluster of beliefs and directs researchers in a specific discipline to what impact ought to be contemplated, how research ought to be done, and how results ought to be interpreted.

There are three widely used research paradigms: positivism, interpretivism and pragmatism (Babbie 2011, Creswell 2014, Neuman 2014). Positivism is recognized as the key paradigm that guides quantitative research; it is connected to the natural sciences (Neuman 2014).

Designs that are associated with positivism are surveys and experiments and they tend to be used in the natural sciences (Creswell 2014). Creswell (2014) further clarifies that studies that concentrate on empirical observation, the verification of theory and measurements, use surveys and experiments methods.

The positivist paradigm was opted for and applied to this study in support of the view of emphasis stated by Welman, Kruger and Mitchell (2005), who hold that research must be constrained to what the researcher can watch and measure unbiasedly, which will be what exists freely of people's feelings and the conclusions they make.

3.2 Research design

Babbie and Mouton (2009) use term, research design, in alluding to the plan of how one intends to conduct the research, and the structure and procedure to answer research questions. In other words, a research design is a blue-print indicating the way the research is planned to be done in order to achieve its goals. The research design in this study involved the researcher's decisions associated with the research approach, target population, sampling procedures, sample size, data collection instruments, data collection procedures, data analysis, and interpretations.

Figure 3.1 shows the methodological choices made for this positivist study.

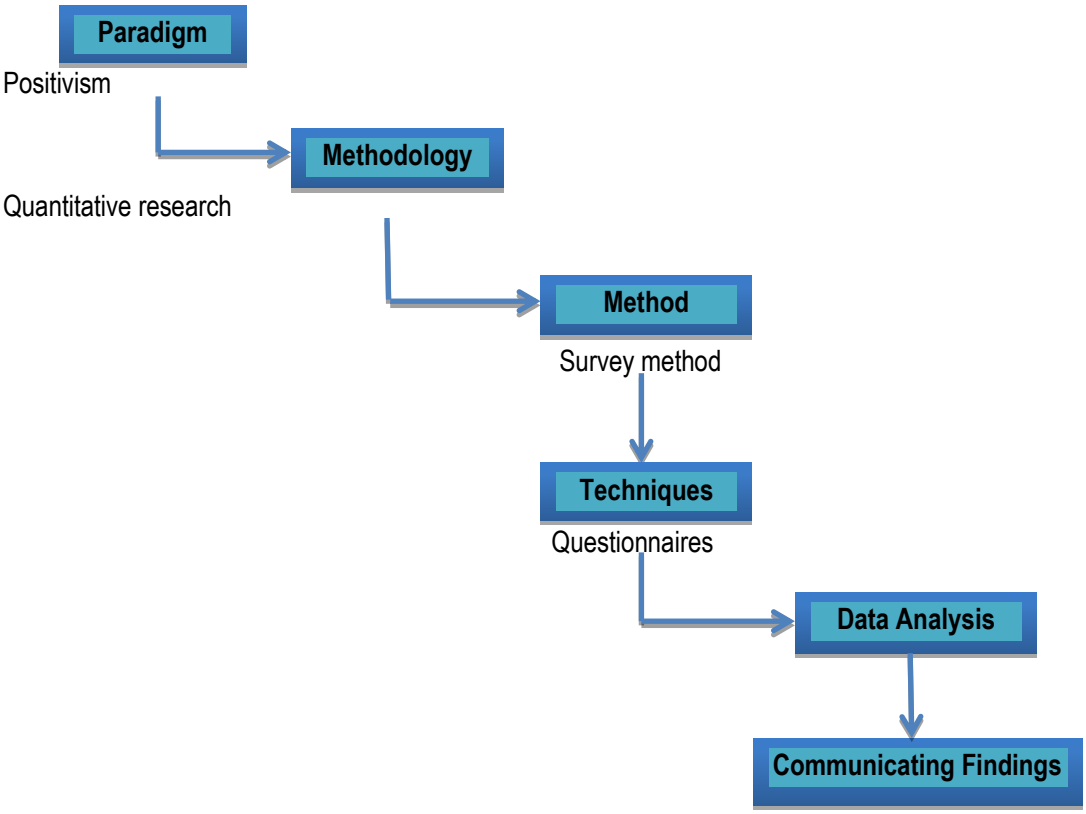

Figure3.1 Research design for the study

3.3 Research methodology

Research methodology centers around the research procedures and strategies followed in carrying out a research study. According to Babbie (2011), research methodology is a research plan as well as methods, techniques and procedures employed to gather the desired research data.

Leedy and Ormrod (2014) underscore that diverse research problems lead to various research designs and techniques, which, thus, results in the gathering of various kinds of data and distinctive interpretations of those data.

3.3.1 Quantitative research

Quantitative research, as indicated by Creswell (2014:154), can be viewed as the gathering of data with the goal that information can be quantified and exposed to statistical treatment so as to help or disprove or substitute knowledge claims. In quantitative research, the results show up as numerical data which are obtained from subgroups so as to generalize the findings to the population that is being studied. As Leedy and Ormrod (2014) comment, the fundamental focal point of quantitative research is to answer inquiries regarding connections among measured variables in order to clarify, foresee, and control phenomena.

From the perspective of the need for generalization of the research results, the quantitative approach deals with larger numbers of individuals (population) unlike the qualitative approach which involves small samples of people (Welman, Kruger and Mitchell 2005).

With the end goal of this investigation, a quantitative research approach was adopted to gather data from undergraduate students and library staff through structured questionnaires. The quantitative approach was fitting for this study since it enabled the researcher to organize a large amount of data into numerical outlines and also give legitimate and objective descriptions of what was being researched. In addition, the use of the quantitative research approach was appropriate given the vast target population and the need to generalize the research outcomes to the target population.

As noted above, the quantitative method, as far as employed in the present study, is evident in the structured quantitative (closed-ended) questions in the questionnaires.

3.3.2 Research approach selected for the study

There are several types of research methods in social science including, amongst others; survey, experiment, observation, case study, and content analysis (Bryman 2012, Mattews and Ross 2010, 6 and Bellamy 2012, Welman, Kruger and Mitchell 2005). This study implemented the survey method to gather information on access to, and use of, electronic resources by undergraduate students at selected UNAM campuses. The survey method is a quantitative approach that has post-positivist or positivist underpinnings. It is among the most prevalent techniques used by researchers to gather information for a study.

The survey research method was chosen over other designs because it gives a better understanding of the present and was thus consistent with the study's aims. More importantly, the choice to use this method was guided by the size of the population; 1460 undergraduate students. The ultimate goal was to learn as much as possible about this large population by surveying a sample taken from the population.

The survey research method was also used in the study of electronic resource acceptance and use among undergraduate students in Jordan by Awwad and Al-Majali (2015), in Zimbabwe by Pinigas, Cleopas and Phiri (2017), in South Africa by Mogase and Kalema (2015), and in Ethiopia by Natarajan (2016).

3.4 Population of the study

Population is defined as the entire group of persons the researcher wants to include in a study (Babbie 2011). The target populations for this study were undergraduate students

and the study population consisted of 181 undergraduate students from Neudamm campus, 974 undergraduate students from Khomasdal campus and 305 undergraduate students from José Eduardo dos Santos campus.

The total population was determined through a list of students records obtained from the Strategic and Physical Planning Department of the university and it was from this study population that the sample was drawn. Furthermore, twelve library staff from the selected campuses took part in this investigation.

The choice to focus on undergraduate students rather than postgraduate students in this study was guided by the belief that the former were more likely to face difficulties regarding accessing and using electronic resources than the latter. The sample of library staff was selected based on the researcher's knowledge of the participants and goals of the research, as suggested by Powell and Cannaway (2004).

Furthermore, library staff members were considered appropriate for this study as they would be able to provide very important information on training programs, and shed more light on the provision of electronic resources, ICT infrastructure, marketing, and the promotion of electronic resources.

3.5 Sampling

The term "sample" refers to a set of the population considered for actual inclusion in the study. The main goal of sampling was to obtain a representative sample in a quest to enable the researcher to study a smaller group and produce accurate generalizations of the results (Neuman 2014).

In this study, probability and non-probability sampling techniques were used in selecting the samples. The stratified sampling technique was used to select undergraduate students, while a purposive sampling technique was used to select library staff from the three campuses of the University of Namibia. The selection of library staff allowed the researcher to obtain appropriate data which supplemented questions in the students' questionnaire. Library staff from nine other campuses were excluded from the study since the study was limited in scope.

The purposive sampling technique was also favored in the selection of three campuses out of twelve campuses of the University of Namibia. The three campuses were selected because of the similarities and differences that exist among them and, thus, the result ant potential for comparisons and contrasts to be drawn among them.

The three campuses share the following similarities: they have well established libraries in terms of online information services. In addition, they are funded and supported by the University of Namibia through government subsidies. Differences include: the size of the libraries, the number of students enrolled, geographical locations, and the degree programs offered.

In terms of geographical location, both José Eduardo dos Santos and Khomasdal campuses are urban-based, while Neudamm is semi-rural. With regards to the degree programs offered, the campuses offer degree programs in different areas of knowledge of significant importance for the economic growth of Namibia in line with *Namibia Vision 2030*, the country's fifth National Development Plan (NDP5), and the Harambee Prosperity Plan (HPP).

3.5.1 Sample size

To determine the appropriate size of the sample for this study, a free sample size calculator, namely the Creative Research System (2015), was used to calculate the sample size for this study at a 95% confidence level. According to the sample size calculator, 292 undergraduate students (20%) of the target population were needed to participate in this study.

The stratified random sampling technique was favored to guarantee a fair extent of the population, regarding students' years of enrolment. In order to reduce sampling errors, undergraduate students in each year of enrollment formed part of the sample as they were all represented. Being a probability sampling method, stratified random sampling includes separating the population into sub strata from which a systematic random sample was drawn from each of the strata. For the purpose of this study, the strata were organized according to the students' years of enrollment; to be specific: first, second, third and fourth years of study. Having pronounced the strata, the researcher drew sub-samples from every stratum.

In this present study, the first stratum was made up of 181 (12%) undergraduate students from Neudamm campus, followed by 974 (67%) undergraduate students from Khomasdal campus, and the third and last was made up of 61 (21%) of undergraduate students from José Eduardo dos Santos campus. That made up the total population of the study 1,460. The sample size is presented in Table 3.1.

Table 3.1: Sample frame and sample size

Strata	Size of population	Percentage	Sample size
Neudamm	181	12	36
Khomasdal	974	67	195
José Eduardo dos Santos	305	21	61
Total	**1460**	**100**	**292**

A typical principle guideline is to accomplish a 95% confidence level so that the results are accurate to within approximately 3% (Carpenter and Vasu 1978, Saunders, Lewis and Thornhill 2012). The researcher was, in any case, certain that the sample size for this study was sufficient as it presented a level of precision of 95% and a 5% confidence level to permit statistical analysis.

3.6 Data collection instruments

Survey research typically employs face-to-face interviews, telephone interviews and questionnaires (Leedy and Ormord 2014). Questionnaires were considered to be reasonable tools to gather research data with respect to the utilization of electronic resources at the selected campuses of the University of Namibia.

3.6.1 Questionnaires

The questionnaire is a data collection tool (Powell and Connaway 2004). Questionnaires are considered the most reliable and essential tools within the survey research whereby respondents are requested to react to similar arranged questions (Saunders, Lewis and Thornhill 2009).

The main attraction of questionnaires is the general simplicity of gathering data in a moderately brief timeframe; they are not expensive to administer, and allow

respondents to answer questions any time they wish to do so. However, like other data collection instruments, questionnaires also have shortcomings, such as low response rates, which may, in turn, affect the findings of the overall research and respondents being restricted to answer questions in their own particular manner (Matthews and Ross 2010).

Despite these disadvantages, the present study made use of two self-administered questionnaires (see Appendices 2 and 3) based on the research objectives in order to collect quantitative data needed to address the study objectives. The decision to utilize self-administered questionnaires for this study was impacted by various studies, such as those of Awwad and Al-Majali (2015), Pnigas, Cleopas and Phiri (2017), Mogase and Kalema (2015) and Toteng, Hoskins and Bell (2013), who utilized questionnaires in their own research and in the context of acquiring data pertaining to the utilization of electronic resources in academic libraries.

The self-administered questionnaire for students (see Appendix 2) included closed-ended questions which were developed explicitly for this study, arranged under subjects firmly related to the objectives of this study. The questionnaire comprised 21 questions divided into seven sections: awareness of electronic resources, students' acceptance of and intention to access and use electronic resources, electronic resources preference, purpose for which e-resources are used, access to electronic resources, issues that hinders the use of electronic resources, and training programs at UNAM library. These topics are firmly connected to the objectives of this study as demonstrated in the Table of Objectives which is Appendix 1.

Neuman (2014) specified a significant number of the favorable advantages that closed-ended questions offer. Among these is the way that they are simpler and speedier for respondents to reply to; the appropriate responses of various respondents are less demanding to code and statistically analyze, and there are fewer unimportant or puzzled responses to questions (Neuman 2014).

The study further used a closed ended questionnaire (see Appendix 3) posted via individual staff e-mails to gather data from library staff. The questionnaire contained 18 questions divided into five sections. It focused mainly on the types of electronic resources available at UNAM libraries, training programs in place, the effectiveness of such programs, and solutions to improve access and use of electronic resources at the surveyed campuses.

In this study pre-testing was done to determine whether further revision was needed for the questionnaire and if the respondents clearly understood and were able to answer questions. Pre-testing of the questionnaire was conducted on 12 undergraduate students at the Rundu campus of the University of Namibia between May and June 2016 prior to the actual data-collection process, which took place in August 2016. The feedback received from the pilot group helped because the instrument was revised, especially the themes and headings.

3.6.2 Data collection procedures

Questionnaires were physically handed over to 292 undergraduate students, who were doing numerous activities in the libraries of the three campuses and who happened to seek assistance at the circulation counters during the first week of August 2016. The researcher approached the surveyed campus libraries to assist in distributing the questionnaires. Library assistants who assisted in handing out questionnaires were informed of the motivation behind carrying out the study, and how to approach the subjects, hand out questionnaires, and double check that all questionnaires were completed appropriately.

The following approach was adopted at each of the three campuses which participated in the study. Firstly, questionnaires were randomly given to the required number of students in each stratum. Thus, for example, of the 71 first year students at the José Eduardo dos Santos campus, 14 students were given questionnaires. This helped ensure that the years of study were proportionally represented.

Secondly, all the questionnaires were distributed and collected by the library assistants at each campus. This approach helped to minimize the possibility of faulty data being produced, because library assistants took time and gave respondents a brief introduction to the study before they completed the questionnaire and responded directly to any queries. This approach gave the library assistants command over the data collection procedure and helped in increasing the response rate.

Library staff questionnaires were distributed in the first week of August of 2016 through e-mail and library staff were asked to respond to the questionnaire and e-mail the

completed questionnaire back to the researcher. The explanation behind e-mailing the questionnaire to library staff was a direct result of the way that the campuses were geographically scattered and high travelling costs would have been resulted from reaching out to all the surveyed campuses.

3.7 Validity and reliability

The concept of validity refers to how well an idea ‘fits’ with reality (Neuman 2014). In quantitative research, validity determines if the research really measures what it was planned to gauge, or how candid the research results are. In contrast to validity, reliability is concerned with the question of whether the study results can be repeated (Bryman 2012).

To enhance validity, the two questionnaires used in this study were given to two senior librarians for proofreading. Afterward, the questionnaires were sent to the supervisor for endorsement. In order to generalize the study findings to the population, the researcher used both probability and non-probability sampling techniques. Validity was also ensured through content validity. The latter was achieved by making sure that the items in the questionnaires were related to the questions which the present study set out to answer.

Moreover, construct validity was accomplished by ensuring that the objectives and research questions that were utilized to come up with research instruments were altogether connected to the TAM and UTAUT models that guided this study.

The convenience sampling technique was used to sample respondents who took part in the pre-testing of the instruments, and questionnaires were physically handed over to

the sampled undergraduate students. Students were requested to fill in the questionnaire while in the library and give their remarks on the structure, wording, clarity and relevance of the questions. Data was pre-analyzed using the Statistical Packages for Social Sciences (SPSS).

3.8 Data analysis and interpretations

After data collection, what follows is the analysis of data to make meaning out of it and to allow the researcher to draw conclusions. In the quantitative research, which was employed in this research, data analysis included the application of statistical procedures in keeping with the approach suggested by 6 and Bellamy (2012).

SPSS version 24 was used to sort, code and analyze the data collected for this study to generate descriptive statistics, such as frequency count and percentage to report survey response. SPSS software has been widely applied in user studies by many researchers including Awwad and Al-Majali (2015), Joo and Choi (2015), Ndinoshiho (2010), Pinigas, Cleopas and Phiri (2017), Mogase and Kalema (2015), Toteng, Hoskins and Bell (2013) and Wiese and du Plessis (2014).

The use of graphs, tables and pie charts allowed the researcher to indicate key variables with lesser and greater impact on the access to, and use of, electronic resources by undergraduate students at the selected UNAM campuses.

3.9 Ethical considerations

The research was approved by the Department of Information Science, University of South Africa (UNISA), and cleared by the University's Research Ethics Committee before it was undertaken. This study conformed to the codes of ethical conduct as

stipulated in the research ethics policy of the University of South Africa. As for the UNAM research ethics, the researcher sought formal approval from the Research and Publications Office of the University of Namibia to conduct this study. Communication was made with the University of Namibia's Research Ethic Committee Secretary and her response is attached (Appendix 2). Before questionnaires were administered to the participants, they were made to understand about the aim and objectives of the study so as to get their consent to take part in the survey.

The researcher also guaranteed that no respondent was compelled to take part in the study. Thus, undergraduate students and library staff were informed that their participation in the survey was voluntary (UNISA, 2007). A cover letter attached to the questionnaires contained details about the researcher and the affirmation that, in accordance with UNISA's policy on research ethics (UNISA 2007), the data gathered was solely for research purposes and would be treated with confidentiality.

Further, in accordance with the citation standards set by the University of South Africa UNISA (2013), all sources used in the study were cited and a reference list was provided

1.2 Evaluation of the research methodology

This section assesses the research methodology utilized for this investigation. The quantitative research approach, with the descriptive survey design, was used due to the population size, and budget and time limitations. Two questionnaires were used as data-collection instruments for this study.

The other reason for choosing the quantitative approach was that all research questions asked could be answered quantitatively and descriptive responses were coded to represent quantitative answers.

The researcher faced the challenge of dealing with a large pool of homogeneous groups, hence leading to limited variety in the responses. The researcher had to adopt the concept of grouping the respondents into strata through the use of systematic stratified sampling to resolve the challenge. Furthermore, the researcher is aware of the possible bias, as only those undergraduate students who visited the library had the chance to complete the questionnaire, excluding those who used the electronic resources from remote locations.

The researcher acknowledged the fact that, although ethical clearance was granted early in 2016, there was a long delay (three years) between data collection and the report date. It is, however, important to note that the results were true then but may no longer be valid due to the delay. Despite all this, if there were an opportunity to repeat the study, a multi-method research design would be included to enrich the context of the results.

3.11 Chapter summary

In this chapter, the researcher started by presenting the research paradigm, followed by a description of the research methodology, research design, population, sampling procedures and the data-collection instruments. This was followed by a discussion of data-collection procedures, validity and reliability, data analysis and interpretation.

Issues regarding research ethics were also addressed and lastly, the evaluation of the research methodology. The next chapter presents the findings of the study.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4. Introduction

The previous chapter describes the research methodology used in this study. This chapter displays the findings of the study on access to, and use of, electronic resources by undergraduate students at selected campuses of the University of Namibia. The findings depend on the data gathered through questionnaires and the data gathered were presented in percentages, graphs and tables. The presentation of the findings was guided by the objectives of this study which are:

1. To find out what type of electronic resources are available at UNAM libraries
2. To establish the awareness of undergraduate students regarding electronic resources
3. To find out which electronic resources are used by undergraduate students
4. To determine the availability of training programs in place to assist undergraduate students with their access to, and use of, electronic resources
5. To determine factors related to their access to, and use of, electronic resources

4.1 Response rate

This study consisted of quantitative data, with a target sample of 292 undergraduate students and fifteen library staff. Of the 292 copies of questionnaires distributed randomly to undergraduate students, 172 were returned, amounting to a response rate

of 59%. Considering the sample size of 292 undergraduate students from three selected UNAM campuses, this is a good response rate, and was achieved, in part, due to the measures taken by the researcher and assistant librarians aimed at ensuring participation.

Twelve (12) out of fifteen (15) library staff who were purposively selected from the surveyed campuses responded to the questionnaires returned them via e-mail, giving a response rate of 80%. The 59% and 80% response rates were considered acceptable for the study because, according to Babbie and Mouton (2009), Bryman (2012), and Neuman (2000), a response rate of 50% is acceptable for analysis, while anything above 70% is esteemed to be a decent response rate. Table 4.1 gives an overview of the distribution of questionnaires on each campus.

Table 4.1: Distribution of questionnaire

Strata	Number of undergraduate students population	Sample size	Response count	Response rates
		Neudamm Campus		
1	8	2	2	(0.7%)
2	62	12	6	(2.0%)
3	76	15	13	(4.4%)
4	35	7	5	(1.7%)
Total	**181**	**36**	**26**	**(9.8%)**
		Khomasdal Campus		
1	347	69	26	(8.9%)
2	234	47	19	(6.5%)
3	195	39	34	(11.6%)
4	198	40	29	(9.9%)
Total	**974**	**195**	**108**	**(36.9%)**
		José Eduardo dos Santos		
1	71	14	8	(2.7%)
2	91	18	6	(2.0%)
3	58	12	10	(3.4%)
4	85	17	14	(4.7%)
Total	**305**	**61**	**38**	**(12.8%)**
Overall	**1460**	**292**	**172**	**(59%)**

4.2 Demographic profiles of respondents

This section provides the demographic profiles of the students and library staff.

Table 4.2: Demographic profiles of undergraduate students (N=172)

Variables	Scaled responses	Respondents count	Response percentage
Gender	Male	59	34%
	Female	113	66%
Total		**172**	**100%**
Age category	17-20 years	27	16%
	20-25	32	17%
	26-30	82	48%
	30-35	18	10%
	36 and above	13	8%
Total		**172**	**100%**
Year of Study	1st year	36	21%
	2nd year	31	18%
	3rd year	57	33%
	4th year	48	28%
Total		**172**	**100%**

(Source: Field Data 2016)

In terms of gender, the majority of the student respondents were female, (113, 66%), whilst 34% were male.

In looking at ages, a high proportion of students (82, 48%) in the study were aged between 26 and 30. Only 13 (8%) of the students were aged 36 or older.

In terms of academic year of study, out of a total of 172 students, 57 (33%) were in their third year and only 31 (18%) of the students were in their second year.

Table 4.3: Demographic profiles of library staff (N=12)

Variables	Scaled responses	Response count	Response percentage
Gender	Male	3	25%
	Female	9	75%
Total		**12**	**100%**
Age category	25-35	4	33%
	36-45	6	50%
	Above 45	2	17%
Total		**12**	**100%**
Academic qualifications	Master's degree	1	8%
	Bachelor's degree	7	58%
	Diploma	4	33%
Total		**12**	**100%**
Work experiences	1-6 years	3	25%
	6-10	6	50%
	More than 10 years	3	25%
Total		**12**	**100%**

(Source: Field Data 2016)

The demographic profiles of the twelve (12) library staff, who were purposively selected and surveyed, revealed that, in terms of their gender, most of the staff (9, 75%) were female. Regarding age, most of the respondents (6, 50%) were aged between 36 and 45. In terms of work experiences, half of the staff 6 (50%) had worked in the libraries for 6 years, and only two librarians had Master's degrees.

4.3 Types of electronic resources available at UNAM libraries

The study sought to find out which electronic resources are available in UNAM libraries. At Neudamm, Khomasdal and José Eduardo dos Santos libraries, the librarians confirmed that the following electronic resources were available:

- E-journals
- E-books
- OPAC
- Licensed databases
- Internet
- Library e-resources
- E-past examination papers

4.4 Students' awareness of electronic resources at UNAM libraries

The study further attempted to establish the awareness of students regarding electronic resources. All 172 (100%) students, who completed the survey, indicated that they were aware of the electronic resources offered at UNAM libraries.

4.4.1 Sources of awareness of electronic resources

Respondents were requested to indicate how they learned about electronic resources. A list of possible responses was given for them to choose from. Figure 4.1 illustrates how respondents became aware of electronic resources.

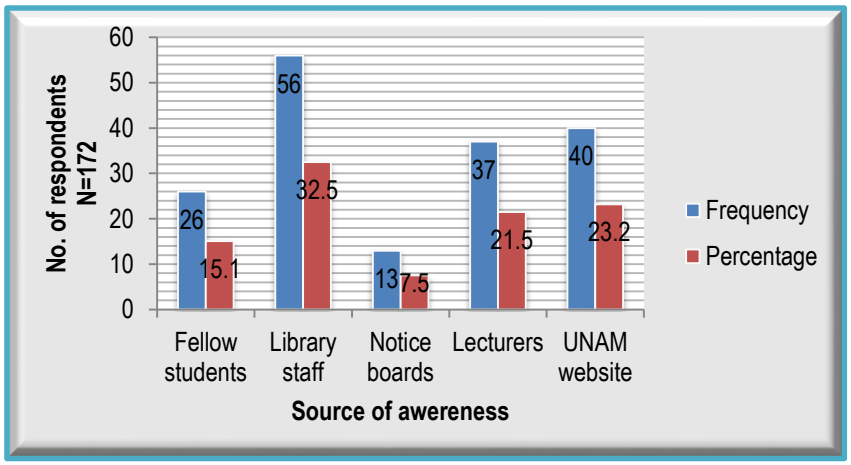

Figure 4.1: Sources of awareness of electronic resources

(Source: Field Data 2016)

The frequency distribution of responses of students in Figure 4.1 shows that the majority of the students 56 (33%) learnt about electronic resources from library staff, 40 (23%) learnt from the UNAM website, 37 (22%) learnt from lecturers, 26 (15%) learnt from fellow students, and 13 (8%) learnt from the notice boards.

4.5 Acceptance of electronic resources by the students

Mutingi and Matope (2013) submit that technology adoption is a complex process, influenced and driven by many factors. It was therefore necessary for this study to identify which factors influence students' acceptance and use of electronic resources in university environments. Findings from the study related to the factors that influence students' behavioral intentions to accept and use electronic resources based on the TAM and UTAUT models adopted in this study are presented in the following sections.

4.5.1 Performance expectancy (perceived usefulness)

Performance expectancy is how much a student trusts that to access and utilize electronic resources certainly help to discover pertinent information to complete assessment undertakings and obtain high grades (Venkatesh *et al.,* 2003). Five questions were set to measure performance expectancy using a five point Likert scale. Figure 4.2 shows the results obtained.

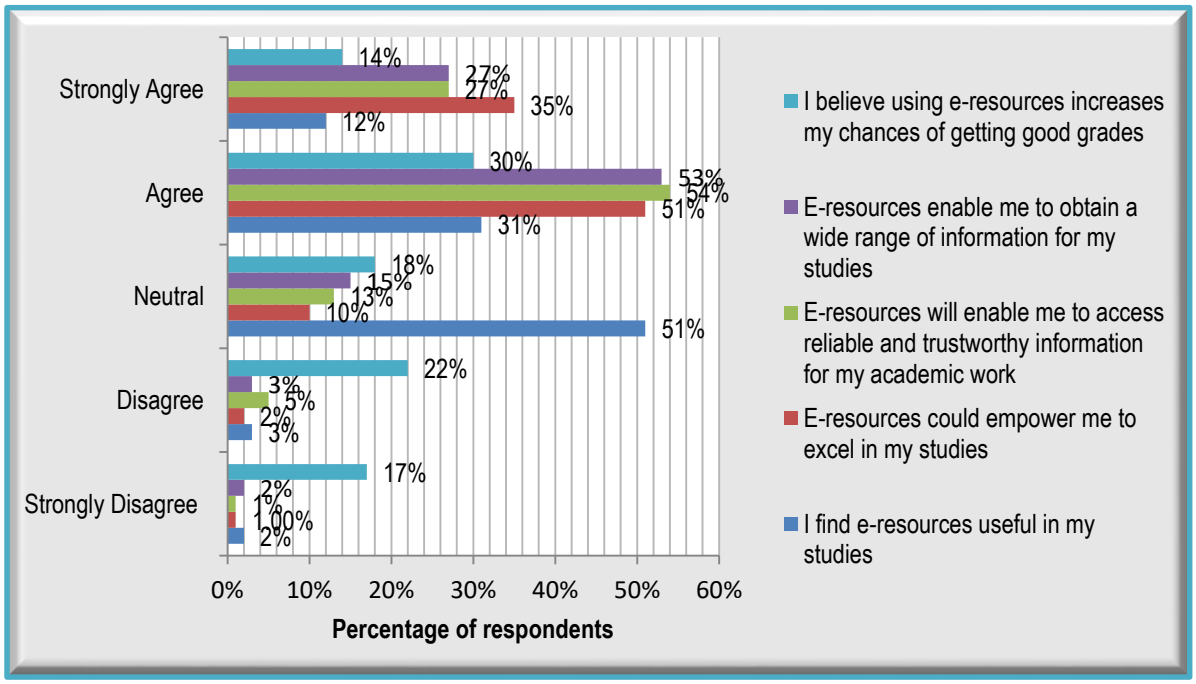

Figure 4.2: Performance expectancy (N=172)

(Source: Field Data 2016)

The findings in Figure 4.2 show that most of the students (93 or 54%) believed that electronic resources would enable them to access reliable and trustworthy information for their academic work. Another 92(53%) of the students agreed that electronic resources will enable them to obtain a wide range of information to support their

academic work, whereas 87 (51%) of the students were neutral to the statement that electronic resources were useful in their studies. As to whether electronic resources could empower students to excel in their studies, 2(1%) strongly disagreed with this statement. Fifty- four (31%) agreed that they find e-resources useful in their studies.

4.5.2 Effort expectancy (perceived ease of use)

It was necessary to measure the effort expectancy construct as it influences students' intentions to access and use electronic resources. Table 4.4 below presents students' responses.

Table 4.4: Effort expectancy (N=172)

Effort expectancy (perceived ease of use) variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I find e- resources easy to use	17(10%)	43(25%)	37(22%)	34(20%)	41(24%)
My interaction with e-resources is clear and understandable	29 (17%)	37(22%)	31(18%)	51(30%)	24(14%)
It is easier for me to become skillful at accessing and utilizing e-resources.	0	3 (2%)	23(13%)	83(48%)	63 (37%)
Learning to access and make use of e-resources is easier for me.	7 (4%)	15 (9%)	19(11%)	56(33%)	75(44%)
Access and use of e-resources should be flexible and enjoyable without encountering more challenges.	0	3 (2%)	16 (9%)	47(27%)	106(62%)

(Source Field Data 2016)

Table 4.4 shows that 106 (62%) of the students were strongly in agreement with the statement that using electronic resources should be flexible and enjoyable without encountering more challenges, whereas three (2%) disagreed with this statement. Another 83 (48%) of the students believed that it is easier for them to become skillful at

accessing and utilizing electronic resources. Fifty-one (31%) of the respondents were of the opinion that their interactions with electronic resources were clear and understandable, while 43(25%) found electronic resources not easy to use as they disagreed with this statement.

4.5.3 Social influence

The influence of others is an important factor influencing individual students to believe that they should adopt and use electronic resources. Figure 4.3 portrays the responses of the students.

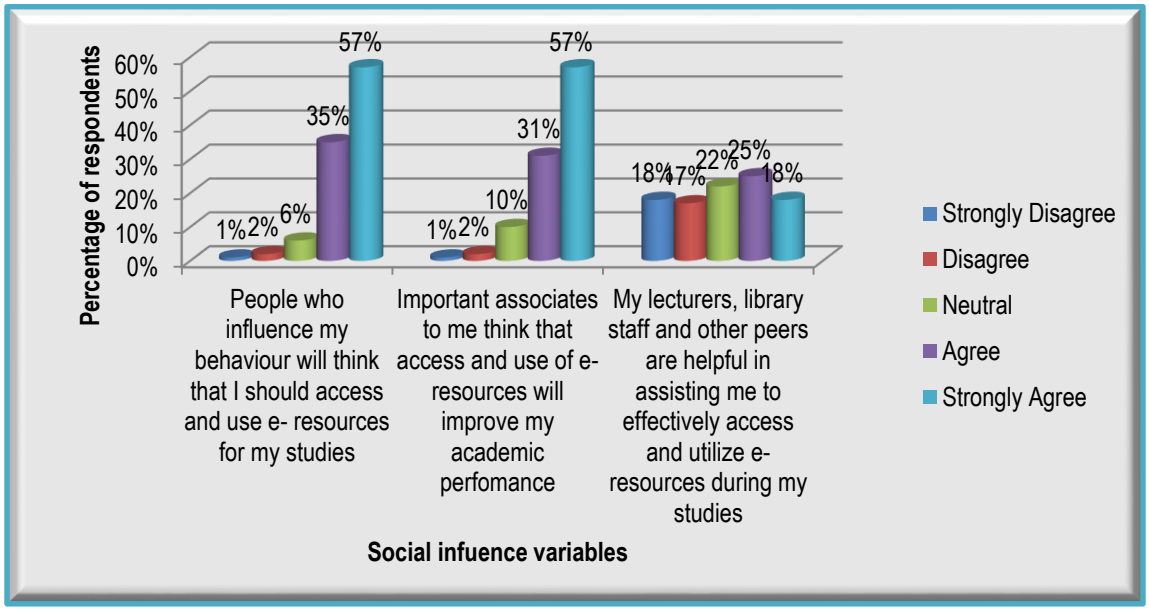

Figure 4.3: Social influence (N=172)
(Source: Field Data 2016)

The majority (98 or 57%) of the students strongly agreed that important associates think that access to, and the use of, electronic resources would improve their academic performance, whereas only one (1%) disagreed with the statement. Ninety-eight (98, 57%) of the participants strongly agreed that people who influence their behavior think

that they should access and use electronic resources. Further, 43 (25%) participants agreed that lecturers, library staff and other peers were helpful in assisting them to effectively access and use electronic resources; while only 31(18%) strongly disagreed with the statement.

4.5.4 Facilitation conditions

Figure 4.4 shows the percentages of respondents who strongly disagreed, disagreed, who were neutral, agreed or strongly agreed to the statements measuring this construct.

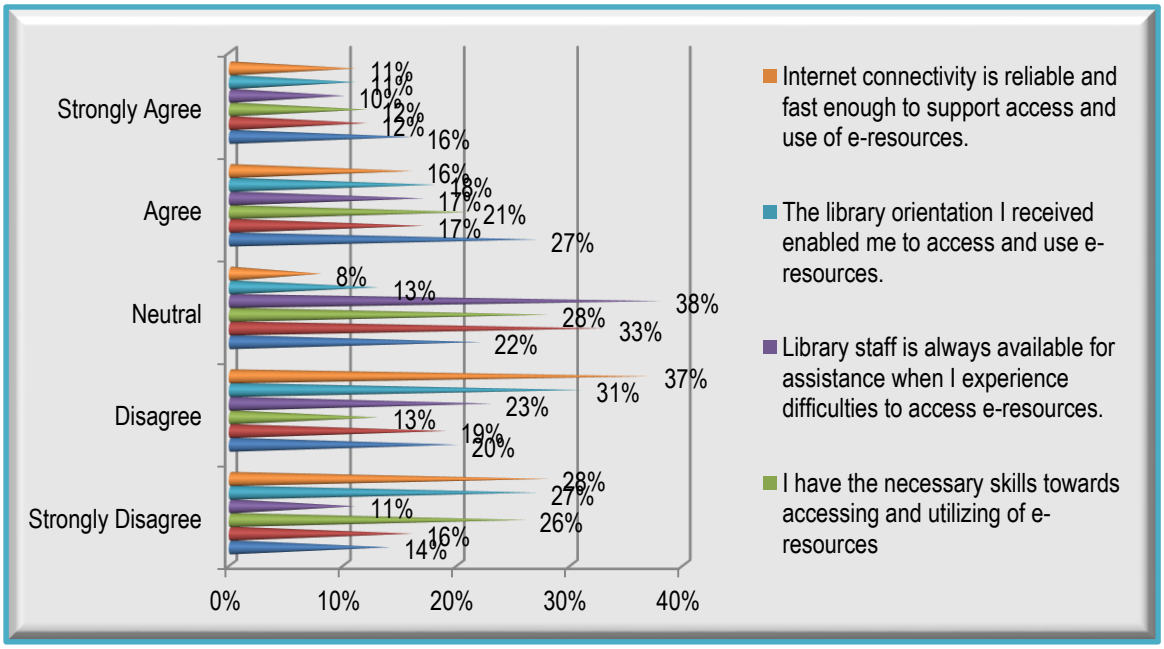

Figure 4.4: Facilitation conditions (N=172)

(Source: Field Data 2016)

As Figure 4.4 indicates, 66 (38%) of the students were neutral to the statement that library staff are always available for assistance when experiencing difficulties in accessing electronic resources. Furthermore, 56 (33%) of the students did not form an

opinion as they were neutral to the statement that the facilities available at UNAM libraries are not supportive in accessing electronic resources.

A total of 63 (37%) of the students revealed that internet connectivity was not reliable and fast enough to support access to, and use of, electronic resources. Fifty-three (53, 31%) of the students disagreed with the statement that the library orientation received prepared them well enough to explore the benefits associated with the use of electronic resources. Only 47 (27%) of the respondents believed that the library had supported the use of electronic resources through various initiatives, mostly marketing and training. Forty- four (44, 26%) of the participants revealed that they have limited skills to access and use electronic information resources.

4.5.5 Students' intention to access and use electronic resources

The study wanted to establish the behavioral intention of students with regard to using electronic resources. Table 4.5 summarizes the responses of the students.

Table 4.5: Students' intention to access and use electronic resources (N=172)

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Behavioral intention variables					
I intend to use e-resources during the course of my undergraduate study at UNAM.	0	5 (3%)	12 (7%)	91(53%)	64(37%)
I intend to access and utilize e-resources in my area of studies.	0	5 (3%)	12 (7%)	92(53%)	63(37%)
I predict I would use e-resources in the second semester	0	23(13%)	33(19%)	25(15%)	91(53%)
I plan to use e-resources in the second semester.	3 (2%)	23(13%)	43(25%)	58(34%)	45(26%)

(Source: Field Data 2016)

As Table 4.5 illustrates, the majority of the students (92 or 53%) revealed that they intended to access and use electronic resources in their area of studies. A total of

91(53%) respondents agreed that they intended to use electronic resources during the course of their undergraduate study at UNAM. Furthermore, 23 (13%) of the undergraduate students predicted that they would not, and did not plan to, use electronic resources in the last semester. Forty-three (43, 25%) of the students were neutral to the statement “I plan to use e-resources in the second semester.”

4.6 Web-based information resources preferences and use

Students were asked to indicate their most preferred web-based information resources. This was based on the assumption that, although all web-based information resources in the libraries are considered relevant by the users, some sources are more preferred and used than others. Figure 4.5 illustrates the students’ responses.

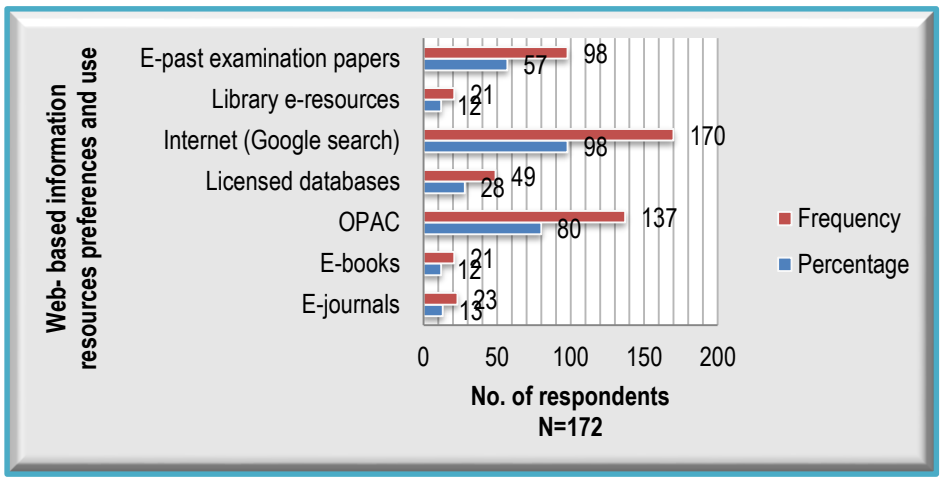

Figure 4.5: Web-based information resources mostly preferred by students (N=172)

(Source: Field Data 2016)

The results in Figure 4.2 show that the majority of the students (170 or 98%) preferred internet search (Google search), followed by 168 (98%) who preferred e-past examination papers, and 137 (80%) preferred OPAC. Some 49 (28%) students preferred licensed databases, 23 (13%) e-journals, and 21(12%) of the students preferred e-books.

4.7 Use of licensed databases

Students were asked to indicate the licensed databases they used. Table 4.6 presents the findings.

Table 4.6: Use of licensed databases (N=172)

Licensed databases	Response count	Response percentage
EBSCOhost	12	7%
Emerald	6	3%
IEEE	16	9%
Science Direct	14	8%
AGORA	8	5%
HINARI	0	0%
Taylor and Francis	0	0%
Sabinet African Journals	2	1.1%
SAGE	4	2%
Don't use	110	64%
Total	**172**	**100%**

(Source: Field Data 2016)

The vast majority, (110 or 64%) of the respondents did not use any licensed databases offered by UNAM libraries. Only a few students (16 or 9%) made use of the IEEE, 14 (8%) Science Direct and 12 (7%) EBSCOhost databases. About 6(3%) used Emerald, 4 (2%) used SAGE and the lowest portion 2(1.1%) used Sabinet African Journals. None of the students indicated that they had used HINARI or Taylor & Francis licensed databases.

4.8 Frequency of electronic resources use

Moving from the licensed databases used, the study endeavored to learn how frequently students use electronic resources. The students were given options from which to select how often they use electronic resources. The frequency options ranged from “quite often” to “never use”. Figure 4.6 illustrates their responses.

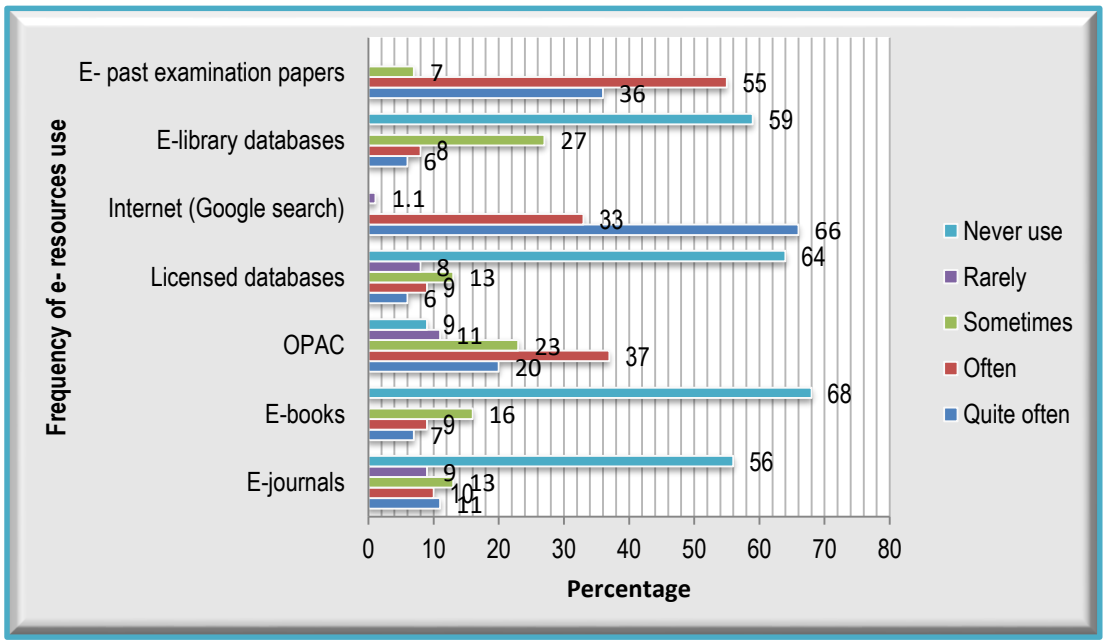

Figure 4.6: Frequency of electronic resources use (N=172)

(Source: Field Data 2016)

From Figure 4.6, it can clearly be seen that the internet (Google search) was the most popularly used resource, with 113(66%) of respondents indicating that they quite often use this resource. Second was e-past examination papers, with 95 (55%) of the respondents indicating that they often use this resource. OPAC was third, with 63 (37%) of the respondents reporting that they often used this resource. A hundred-and ten(110, 64%) of the students indicated that they never used licensed databases, while e-books

were the least used information source, with 117 students (68%) indicating that they never used this resources.

4.9 Rationale for accessing and using of electronic resources

The students were asked to point out reasons why they accessed and used electronic resources. Multiple responses were expected to this question. Figure 4.7 gives the total rates of the related actions which incited students to use electronic resources.

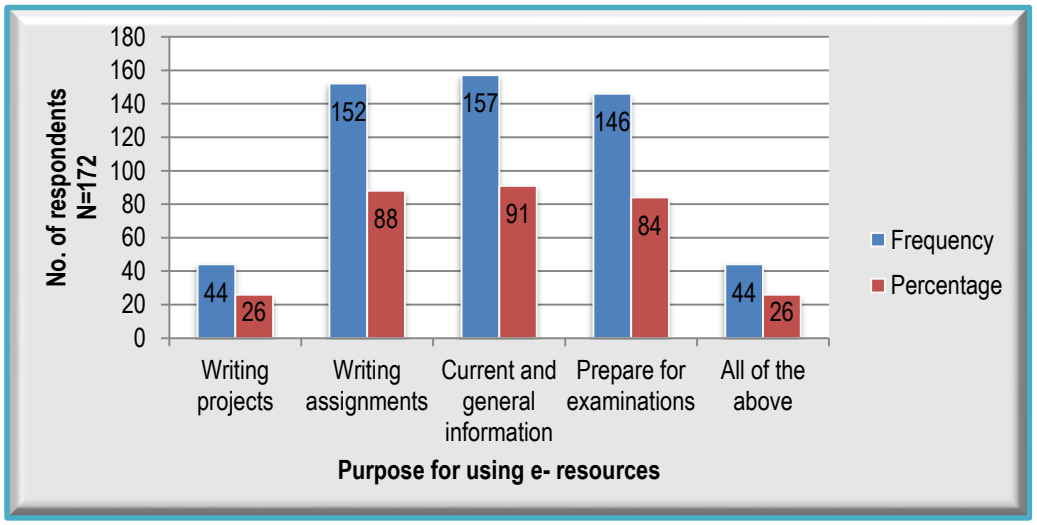

Figure 4.7: Purpose for using electronic resources (N=172)

(Source: Field Data 2016)

Predominantly, students appeared to use electronic resources to find out current and general information. The majority of the students (157, 91%) indicated that they used electronic resources to find out current and general information. Writing assignments was another popular reason for using electronic resources, reported by 152 (88%) respondents. About 44 (26%) used electronic resources to write projects, while 44(26%)

of the respondents indicated that they used electronic resources for all the reasons summarized in Figure 4.7.

4.10 Users' electronic resources usage training programs

Users' training is deemed to be one of the most important factors that determined the ability of students to access and use electronic information resources in the context of this research. Students were asked to indicate, in question 12, whether they had received training in the use of electronic resources. Table 4.7 summarized the answers to this question.

Table 4.7: Training in the use of electronic resources (N=172)

Training in use of electronic resources	Response Count	Response Percentage
Yes	121	70%
No	51	30%
Total	172	100%

(Source: Field Data 2016)

The findings of this study show that 121 (70%) of the students indicated that they had received training against 51 (30%) who had not received training.

4.10.1 The types of library training received

When asked to identify the types of training they had received, the following responses were provided:

Table 4.8: Types of library training received by students (N=172)

Library orientation	**Information literacy training**
113 (67%)	65 (38%)

(Source: Field Data 2016)

A hundred-and-thirteen (113, 67%) of the students received training during library orientation. This was followed by 65 (38%), who had received information literacy training.

4.10.2 Effectiveness of training programs offered in UNAM branch libraries

Table 4.9 presents the findings of the study in terms of the effectiveness of training programs

Table 4.9: Effectiveness of library users' training programs (N=121)

Effectiveness of training programs	Response count	Response percentage
Effective	27	22 %
Not effective	94	78%
Total	**121**	**100**

(Source: Field Data 2016)

The findings revealed that the majority (94.78%) of the students did not see the training programs as effective, whereas 27(22%) of the participants indicated that the training was effective.

4.10.3 Possible challenges affecting the effectiveness of training offered at UNAM libraries

When asked to identify the challenges that might affect the effectiveness of the training programs offered, the following challenges were identified (as shown in Figure 4.8).

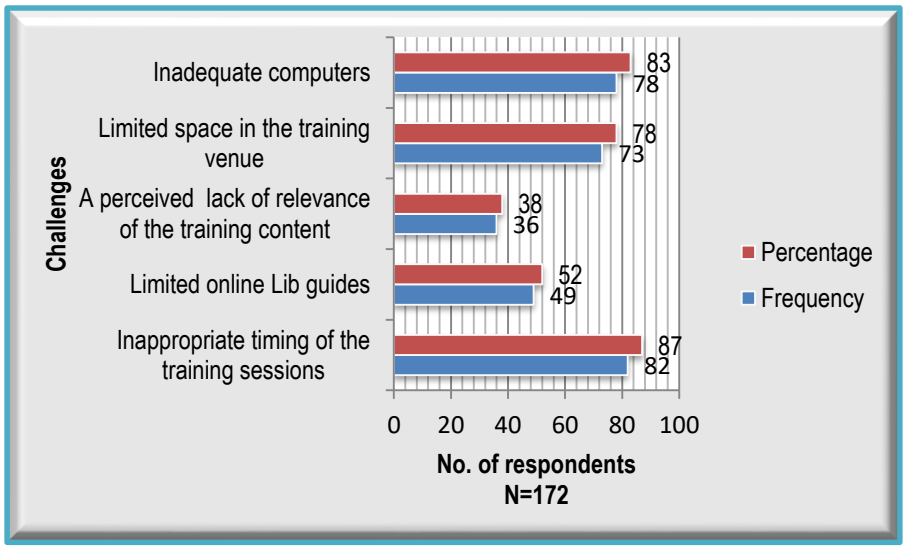

Figure 4.8 Challenges affecting the effectiveness of training programs

(Source: Field Data 2016)

As shown in Figure 4.8, by far the most pressing challenge related to the timing of the training (82 or 87%), 78 (83%) revealed inadequate computers and 73 (78%) felt that the seating capacity in the training venues was limited. Forty-nine (49, 52%) indicated that there were limited online library guides, while 36 (38%) of the students were concerned about the relevance of the content offered in such programs.

4.11 Accessibility and factors that hinder access to, and use of, electronic resources

In order to fully comprehend the conduct of students in their use of electronic resources, it was important to find out whether they had accessed electronic resources with ease. Respondents were asked to indicate their frequency of access, the devices they used to access information sources, the venues from which they access electronic resources and whether they were able to accessed electronic resources or not, as well as the constraints that they encountered when accessing and using electronic resources.

4.11.1 Frequency of accessing electronic resources

It was necessary for this study to establish the frequency with which student's access electronic resources. Respondents were asked the following question: How regularly do you access electronic resources? The results are shown in Figure 4.9 below.

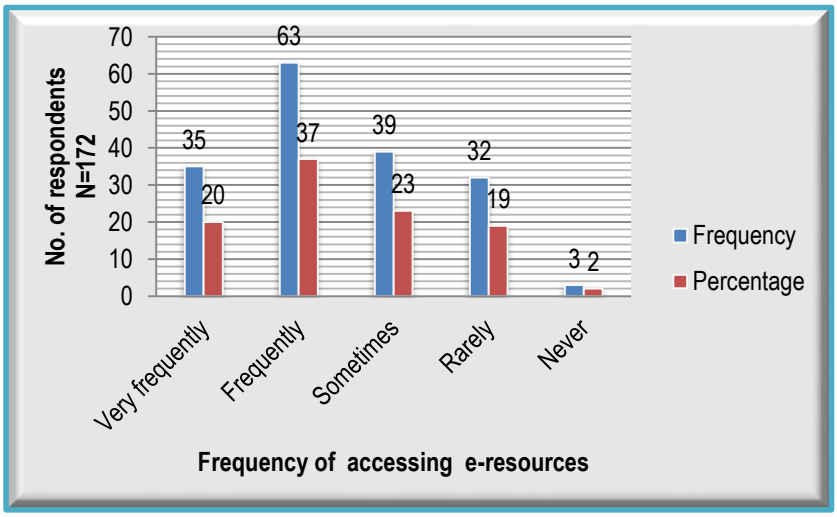

Figure 4.9: Frequency of access to electronic resources

(Source: Field Data 2016)

As shown in Figure 4.10, of 172 students surveyed, the frequency with which they accessed electronic resources was more or less evenly spread, except for only 3 (2%) of the students, who never accessed electronic resources. Those who accessed e-resources very frequently numbered 35(20%). 63 (37%) accessed them frequently, 39 (23%) indicated having accessed electronic resources sometimes, and 32 (19%) indicated accessing electronic resources rarely.

4.11.2 Devices used to access electronic resources

The students who accessed electronic resources were then asked to list the devices they used to obtain access. Figure 4.10 below presents these findings.

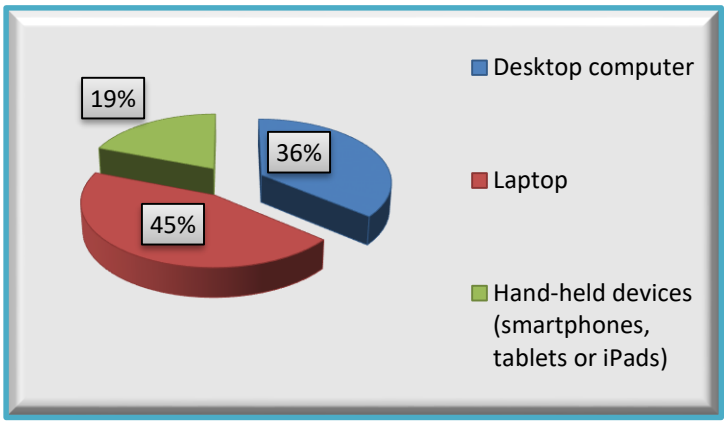

Figure 4.10: Devices used to access electronic information resources (N=172)

(Source: Field Data 2016)

Figure 4.10 shows that the overwhelming majority 77(45%) of the students used their own laptops to access electronic information resources, some of the students (62, 36%) used desktop computers to obtain access and 33(19%) used hand-held devices, such as smartphones, tablets or iPads to find information sources online.

4.11.3 Electronic resources access points

Students access electronic resources from different venues. Sixty-seven (67, 39%) accessed electronic resources on campus, 58 (34%) from the library, 41 (24%) from classrooms, 34 (20%) from the lecture halls, 22 (13%) from home through off-campus access, while only 7(4%) of the students used internet cafés as their access point.

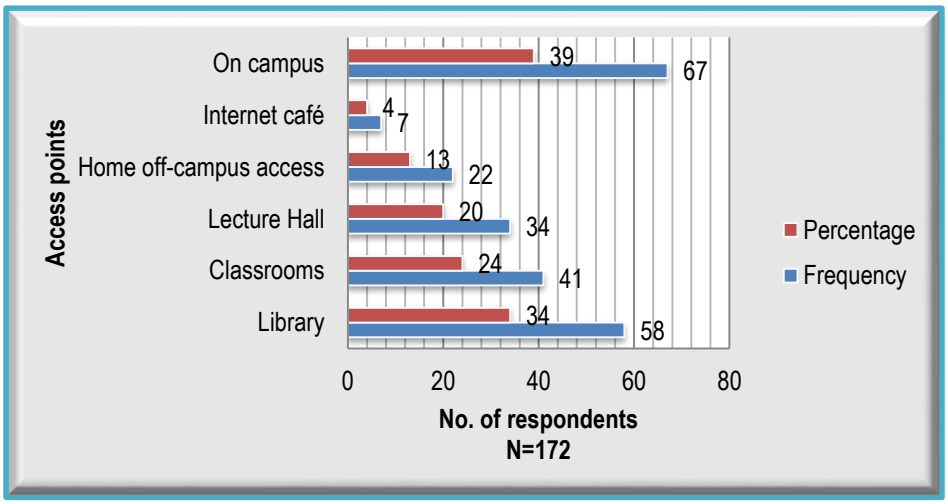

Figure 4.11: Electronic resources access points

(Source: Field Data 2016)

4.11.4 Students' ability to access electronic resources from different access points

The students were asked to indicate whether they were able to access electronic resources from different access points. Most of the students (97 or 56%) reported that they were not able to access electronic resources, whereas 75 (44%) indicated that they were able to access electronic resources.

4.11.5 Issues experienced by students when accessing and using electronic resources

The students were explicitly requested to show the variables that they viewed to be major issues in their effectively accessing and using electronic resources in UNAM libraries. It can clearly be seen in Figure 4.12 that the most common issues that students experienced were related to slow internet connections (92 or 53%). Eighty-seven (87, 51%) of the respondents indicated that limited access to computers was the second main issue experienced, followed by limited search skills with 86 (50%) of

participants reporting this factor as an impediment that they experienced in accessing and using electronic information resources. Eight-two (82, 48%) reported inadequate of points for personal lap-top use in the library as another issue encountered. Information overload was considered by 68 (40%) of the respondents as a problem, while 48 (28%) complained about limited time allocated for PC use. Nine (9, 5%) felt that there was limited access to the internet and 7 (4%) indicated none of the above.

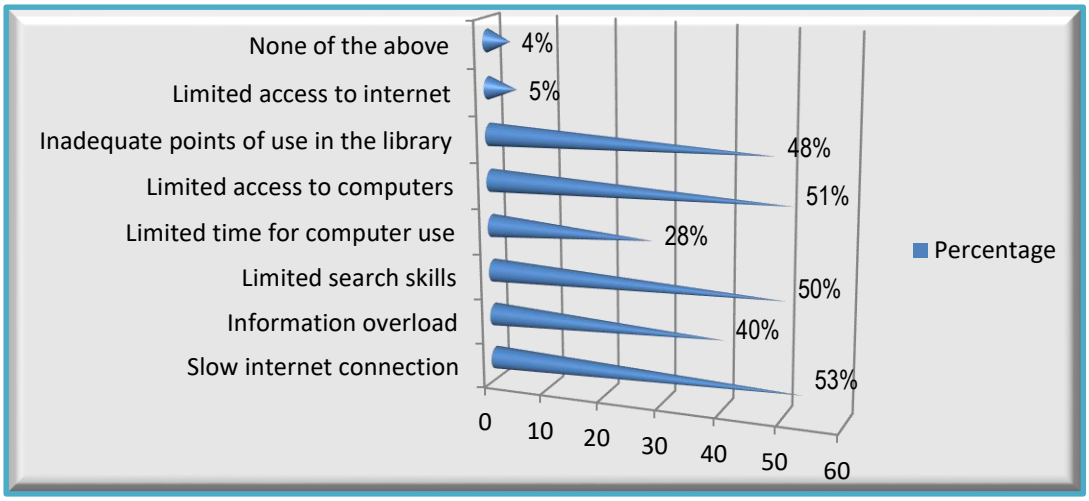

Figure 4.12: Issues experienced by students when accessing and using electronic resources (N=172)

(Source: Field Data 2016)

4.11.6 Solutions to improve access to, and use of, electronic resources

The students were asked to give solutions that would improve access to, and use of, electronic resources in UNAM libraries. The findings are summarized in Table 4.10.

Table 4.10: Solutions to improve access to, and use of, electronic resources (N=172)

Solutions to improve access and use	Multiple responses	
	Response count	Response percentage
Continuous user training	124	72%
Lecturers motivation to enhance usage	68	40%
Provision of adequate computers	83	48%
Fast internet connectivity	131	76%
Marketing via library website and social media platforms	87	51%

(Source: Field Data 2016)

When asked to indicate solutions to improve access to, and use of, electronic resources, the overwhelming majority of the students 131(76%) responded that there was a need to increase internet speeds, 124 (72%) expressed a need for continuous user training, and 87 (51%) reported that there was a need for more rigorous marketing and promotion of electronic resources via the library website and social media platforms. Eight-three (83, 48%) of the students expressed their belief that there was a need for more access tools (such as computers) to be provided, while 68 (40%) felt that there was a need for lecturers to further promote the use of electronic resources amongst students.

4.12 Findings from UNAM library staff

This section presents the findings that emerged from the survey questionnaire administered via e-mail to a total of twelve library staff, who work in the three UNAM campus libraries and were purposively selected for this study; data was collected from three campus librarians, four senior library assistants and five library assistants.

A total of 18 questions were asked and software the package SPSS version 24 was used to analyze the data. The findings are displayed below in graphs and tables, and are reported as frequency and percentages. The following key questions were asked: What types of electronic resources are available in UNAM libraries? Are student's aware of electronic resources? What training programs are offered in UNAM libraries? What are the challenges affecting students' ability to access and use electronic resources effectively?

4.12.1 Students' awareness of electronic resources in UNAM libraries

The library staff were asked to indicate whether the students were aware of the electronic resources offered by UNAM libraries. All twelve (12, 100%) of the library staff confirmed that students were aware of electronic resources.

4.12.2 Platforms for awareness creation

The library staff members were asked how they created awareness of electronic resources among students. The results are shown in Figure 4.13. It can clearly be seen that all 12 (100%) of the library staff indicated that library orientation is the main platform used to create awareness. Leaflets (10, 83%) and training (10, 83%) were reported being used by library staff as platforms to create awareness, while 8 (67%) used marketing and promotion activities. Four (4, 33%) of the library staff used social media and posters to create awareness.

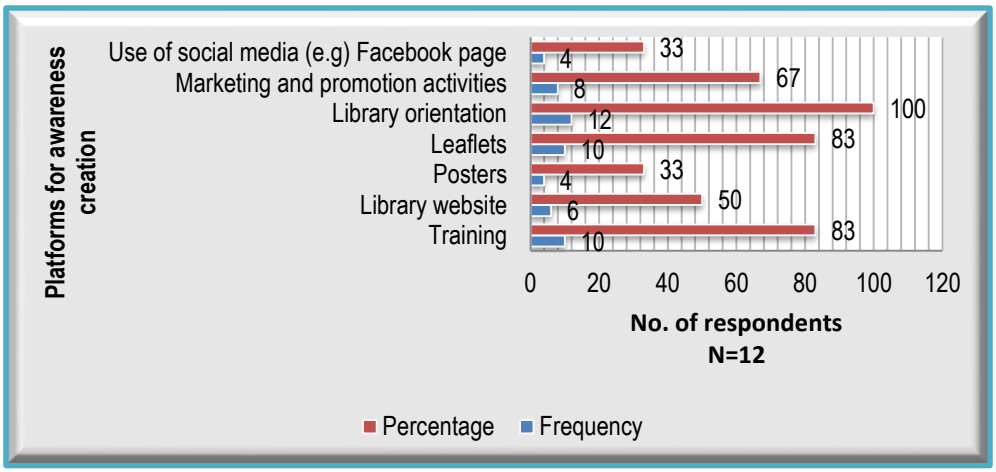

Figure 4.13: Platforms for awareness creation

(Source: Field Data 2016)

4.12.3 Frequency of seeking assistance

The library staff were further asked how frequently students needed help in or outside the library in accessing and using electronic resources. All twelve (12,100%) respondents indicated that students "Often" required assistance when faced with difficulties in accessing and using electronic resources.

4.12.4 Frequency of assisting students to use electronic resources

Participants were asked to indicate how frequently they assisted students to use electronic resources. The majority of the library staff (10, 83%) confirmed that they assisted students "quite often", while 2 (17%) assisted students "often" in their use of electronic resources.

4.12.5 Training programs in UNAM libraries

Respondents were asked to indicate whether there were training programs in place that were aimed at training users in electronic resource usage. The findings of the study revealed that all 12(100%) of the library staff confirmed that there were training programs aimed at training students at the surveyed libraries.

4.12.5.1 Types of training programs in place in UNAM libraries

This question required library staff to indicate the types of training programs offered to students at their respective libraries. The findings of the study revealed that all 12 (100%) of the participants indicated that library orientation and information literacy training were all in place and mostly offered in their libraries.

4.12.5.2 Effectiveness of training programs in UNAM libraries

When further asked to indicate whether the training programs were effective or not, 11(92%) of the library staff revealed that the training programs in UNAM libraries were “not effective”, while 1(11%) indicated that the training programs were effective in equipping students with necessary library skills. Table 4.11 presents the findings of the study with regard to the effectiveness of users’ training programs.

Table 4.11: Effectiveness of library users' training programs (N=12)

Effectiveness of training programs	Response count	Response percentage
Effective	1	11%
Ineffective	11	92%
Total	**12**	**100**

(Source: Field Data 2016)

4.12.5.3 Interventions to ensure effective users training programs at UNAM libraries.

The library staff were also questioned with regard to the interventions that they make to ensure effective users training programs at the surveyed libraries. The majority of the library staff 11 (92%) revealed that there was a need to re-train library staff, increase budgetary allocation towards training and provide adequate computers and training venues.

4.12.5.4 The impact of training on students' access to, and use of, electronic resources at UNAM libraries

The participants were further probed with regard to the impact of training on access to, and use of, electronic resources. As shown in Table 4.11, all of the library staff (12, 100%) revealed that users' training had a great impact as it improved electronic resource usage and improved the quality of students' assignments and projects. Six (6, 50%) of the participants reported decreased student inquiries at the reference service section.

Table 4.12: Impact of training on access to, and use of, electronic resources (N=12)

Impact of users' training	Multiple responses	
	Response count	Response percentage
Improved electronic resources usage	12	100%
Quality citations	8	67%
Improved quality of student's assignments and project writing	12	100%
Decreased students inquiries at the Reference Service Section	6	50%

(Source: Field Data 2016)

4.13 Issues experienced by students when accessing and utilizing electronic resources

The library staff were asked to indicate some of the challenges faced by students in accessing and using electronic resources. As shown in Table 4.12, the majority of the participants 10 (83%) identified the inadequate supply of personal computers and slow internet speed as the two main issues experienced by students. The least significant issues identified were limited database subscription with 3(25%) of respondents and limited awareness with 4(33%) of respondents.

Table 4.13: Issues experienced by students when accessing and using electronic resources (N=12)

Issues experienced by students	Multiple responses	
	Response count	Response percentage
Inadequate supply of personal computers	10	83%
Limited awareness	4	33%
Slow internet	10	83%
Power failure	0	0
Limited database subscriptions	3	25%

(Source: Field Data 2016)

4.14 Students' use of electronic resources at UNAM libraries

When asked whether electronic resources were being used optimally or not, all 12 library staff indicated that electronic resources were not optimally used by undergraduate students at UNAM libraries.

4.15 Provision of ICT facilities at UNAM libraries

Table 4.14 depicts the results with regard to the provision of ICT facilities. The majority of the library staff 10(83%) revealed that ICT facilities were insufficient, whereas 2(17%) of the respondents indicated that they were fairly sufficient and none of the respondents indicated as sufficient.

Table 4.14: Provision of ICT facilities (N=12)

ICT facilities in UNAM libraries	Response count	Response percentage
Sufficient	0	0%
Fairly sufficient	2	17%
Not sufficient	10	83%
Total	**12**	**100**

(Source: Field Data 2016)

4.16 Solutions to enhance access to, and use of, electronic resources

Library staff were asked to select solutions from a pre-determined list of what the UNAM libraries needed to work on in order to enhance access to, and use of, electronic resources. Table 4.15 portrays the solutions which were encouraged. As shown in Table 4.14, all 12 (100%) of the library staff surveyed indicated that the provision of sufficient ICT facilities coupled with vigorous and effective training was needed. Three (25%) of the respondents indicated that there was a need to increase provision of electronic resources in different subject disciplines.

Table 4.15: Solutions to enhance access to, and use of, electronic resources (N=12)

Possible solutions	Multiple responses	
	Response count	Response percentage
Increase the provision of e-resources in different academic disciplines	3	25%
Provide sufficient ICT facilities	12	100%
Provide vigorous and effective training	12	100%
Aggressive marketing and promotion of e-resources	10	83%

(Source: Field Data 2016)

4.17 Chapter summary

This chapter presented and analyzed data obtained from the students and library staff who participated in the survey. Frequency tables and graphs were used to present a descriptive analysis of the data. The chapter gave details as to the response rates to the survey questionnaire by analyzing responses to the following themes: the demographic information of the respondents; the availability of electronic resources; the awareness of electronic resources; students' acceptance and intentions to access and use electronic resources; electronic resource preferences; purposes for which electronic resources were used; library users training programs and accessibility; possible solutions to enhance access to, and use of electronic resources; and issues that hinder access to, and use of, electronic resources. The next chapter interprets and discusses the results.

CHAPTER FIVE

INTERPRETATION AND DISCUSSION OF FINDINGS

5. Introduction

This chapter interprets and discusses the data obtained from the questionnaires presented in Chapter Four. The interpretation and discussions in this chapter give a chance to emphasize the research problem, and relate the findings to comparable studies. As stated in Chapter One, the study aimed at investigating the access to, and use of, electronic resources by undergraduate students at Neudamm, Khomasdal and José Eduardo dos Santos campus libraries of the University of Namibia. The interpretations of the results in this chapter are presented according to the following study objectives.

1. To find out what types of electronic resources are available at UNAM libraries
2. To establish the awareness of undergraduate students regarding electronic resources
3. To find out which electronic resources are used by undergraduate students
4. Determine the availability of training programs to assist undergraduate students with their access to, and use of, electronic resources
5. To determine factors related to their access to, and use of, electronic resources.

5.1 Demographic information pertaining to the students

With regard to gender, the majority of the students who completed the survey were female (66%), while 34% were male. Deng (2010) found that female students access and use electronic resources more than male students. It was further realized that the majority of students who participated in the study were aged between 26 and 30. The students in this age classification are possibly attracted by technology, and it could be interpreted that they are increasingly disposed to utilize electronic resources, as they invest more energy in their devices, utilizing social media. Awwad and Al-Majali (2015) posit that age is an important variable that may influence access to, and use of, electronic resources.

The study findings in terms of age are similar to the profiles of undergraduate students in other studies that investigated the use of electronic resources. In Uganda, a study by Gakibayo, Ikoja-Odongo and Okello-Obura (2013) reported that the majority of students who participated in their study (168 or 63.1%) were between the ages of 21 and 24 years.

In the USA, a study on factors affecting the selection of online library resources in academic tasks by undergraduates at the University of Kentucky reported that the majority of undergraduate students (286 or 86.1%) were between the ages of 18 and 22 years (Joo and Choi2015). Third and fourth year students had the highest response rates compared to first and second-year students, who possibly may not yet have gained confidence in using electronic resources.

5.2 Demographic details of the library staff

The demographic profiles of the twelve library staff revealed that 9 were female and 3 were male. A similar trend was observed for the undergraduate students where the female to male ratio was 113:59 (66:34%). The results, as shown in Table 4.3 in section 4.2 of Chapter Four, revealed that 50% of the library staff respondents were aged between 25 and 45.

Regarding academic qualifications, most respondents (7or 58%) possessed bachelor's degrees as their highest qualification, while only 2(17%) respondents held master's degrees. The remaining 4 (33%) of the participants possessed a diploma. Surprisingly, only two staff members possessed master's qualifications in library science. This could possibly be due to lack of opportunities for continuous professional development.

The work experience status of respondents showed that 6 (50%) of the staff had worked at UNAM for 6 to 10 years, and 3 (25%) had worked for between 1 and 6 years. Meanwhile, the remaining 3 (25%) had worked for more than 10 years.

5.3 Types of electronic resources available at UNAM libraries

In order for one to be able to access and use electronic resources, these resources should, first and foremost, be made available to library users. Various studies by Hampton (2015), Karlsson (2014), Katabalwa (2016), Mammo and Ngulube (2014), Min and Yi (2010), Satgoor (2015), and Ukachi (2015) found that e-journals, e-books, online databases, the online computer catalogue (OPAC), CD-ROM databases and internet resources were some of the electronic resources available in academic libraries.

The results from prior studies are in concurrence with the results of this study, as all twelve library staff, who participated in the study, confirmed that electronic resources were available at each surveyed UNAM branch library and that the resources available included: e-journals, e-books, OPAC, licensed databases, Internet, library e-resources, and e-past examinations.

5.4 Students' awareness of electronic resources at UNAM libraries

Deng (2010) clarifies that the awareness and the nature of the information accessible are vital variables influencing utilization of electronic resources. In order to access and use various online sources, students should have knowledge of the available electronic resources. The study assessed whether or not students were aware of the electronic resources made available by the UNAM libraries. The results revealed that all 172 respondents were aware of there being a variety of electronic resources. The entire library staff surveyed supported the above findings by indicating that undergraduate students were aware of electronic resources.

In this study, it was found that sources of creating awareness of electronic resources by library staff were through library orientation (12, 100%), through leaflets (10, 83%), as well as through marketing and promotion activities (8, 67%). With the 100% response regarding library orientation as a medium to create awareness of electronic resources, it is clear that the UNAM libraries are having some impact on creating awareness.

The findings above possibly confirm that much has been done to create an awareness of the existence of electronic resources in UNAM libraries, though there was a low usage of, and preferences for, e-journals, e-books and licensed databases, as depicted

in Figures 4.5 and 4.7. The findings of this study concur with studies by Anandhalli and Shakuntala (2014), Gupta and Sharma (2015), Isibika and Kavishe (2018), Naqvi (2014), and Wu and Yeh (2012), which revealed that the majority of undergraduate students were aware of, and using, various electronic resources at their respective institutions. This suggests that awareness of the availability of electronic resources in a library promotes their use.

The findings of other studies focused on a similar topic obtained different results including the work of Anaraki and Babalhavaeji (2013), Dauda (2014), Tlakula and Fombad (2017), and Tang and Barnett-Ellis (2017), which revealed low student awareness and use of electronic resources in their academic libraries. Students have also confused electronic resources with web-based internet sources.

Tang and Barnett-Ellis (2017), in their study at Jacksonville State University in the USA, found that 50% of the students surveyed were not aware of the availability of an e-book collection.

Students in this study were further asked to indicate how they learnt about electronic resources. There was a need to know the means through which students were informed of, and exposed to, electronic resources. In line with the TAM and UTAUT models adopted for the present study, access to, and the use of, electronic resources in the surveyed libraries were found to be affected by social influences and, in particular, the phenomenon whereby an individual sees that influential others believe one should utilize the information system, as was put forward by Venkatesh *et al.,* (2003). The findings revealed that 56 (32%) of the students surveyed in this study learnt about

electronic resources from library staff. This finding implies that, most likely, library staff members were committed to promoting the use of online sources of information to students.

This finding was corroborated by the library staff who all indicated the various platforms that they used to create awareness. The findings illustrated in Figure 4.9 show that assistance was offered quite often to students to take advantage and make use of available electronic resources. Other means by which the students were informed about electronic resources were through their lecturers (37or 22%), and from fellow students (26 or 15.1%) while 40 (23.2%) of the students learnt from the library website.

The study found that library staff, lecturers, and fellow students had a great influence on whether the respondents used electronic resources or not. End-users probably would not be eager to utilize the information system until the point when they were inspired by opinion leaders who can impact their attitude and conduct (Taiwo and Downe 2013).

Surprisingly, those who learnt through notice boards were relatively few. One would have expected the majority of students to find out about electronic resources from the library website, as it provides the gateway through which students find information resources accessible in the library. It can, thus, be concluded that respondents were acquainted with, and exposed to, electronic resources through a blend of various approaches both formal and informal.

Although the three campuses surveyed had made efforts to promote and create awareness, more vigorous awareness activities still need to be carried out. It is vital for

library staff, in collaboration with faculties, to spearhead campaigns to create further awareness of electronic resources, using a combination of communication channels.

5.5 Students' acceptance of, and intention to access and use, electronic resources

The acceptance by students of use of electronic resources is of fundamental significance as it has either a positive or negative effect on their accessing and using electronic resources. The elements that impact the acceptance of electronic resources were determined based on the four core constructs of the TAM and UTAUT models by Davis (1989) and Venkatesh (2003), namely: performance expectancy (perceived usefulness in TAM), effort expectancy (perceived ease of use in TAM), social influence and facilitating conditions.

The findings of this study introduced in Table 4.5 gave the verification that these four core constructs associate positively with the acceptance of electronic resources. The following discussion is based on the four main constructs of the UTAUT and TAM models.

5.5.1 Performance expectancy

The findings of this study, as presented in Figure 4.2, revealed that the majority of students agreed and strongly agreed that performance expectancy influenced them to access and use electronic resources. This is because 54% and 53%, respectively, agreed to the two statements that electronic resources would enable them to access reliable and trustworthy information for their academic work and that electronic resources would enable them to obtain a wide range of information for their studies.

This result agrees with the study by Isibika and Kavishe (2018), who observed that library users' positive perceptions of electronic resources were a driver of accessing and utilising electronic resources.

Furthermore, 51% of students agreed that electronic resources could empower them to excel in their studies. In addition, 31% and 30% agreed that electronic resources were useful in their studies and increased their chances of obtaining good grades. It can, accordingly, be understood that information accessible in electronic resources has turned out to be of immense value to numerous students and has allowed them to access vital information for their studies.

These results are in line with the findings of Awwad and Al-Majali (2015), Chang *et al.,* (2015), and Mabuku (2015), who reported that as students appreciate the functionality, value and the usefulness of electronic resources to their studies, their performance expectancy will be enhanced and their probability to embrace them will increase.

The study also found that some 87 (51%) students were uncertain about the usefulness of electronic resources to their academic pursuits. A conceivable clarification of this inconsistency between the results on the statement: "Use of electronic resources will enable me to access reliable and trust-worthy information for my academic work" and the statement: "I find electronic resources useful in my studies", could be an indication that, perhaps, the 87 (51%) of the students who were uncertain were possibly ones who faced problems and did not access and utilize electronic resources due to a possible lack of searching skills.

This study indicates that performance expectancy had a strong effect on student's' conduct goals to access and use electronic resources. Exploring the next determinant of UTAUT (effort expectancy) gives an insight into how students perceive the use of electronic resources.

5.5.2 Effort expectancy

The study's findings showed that the majority of students strongly agreed or agreed on all the variables measuring effort expectancy. For instance, 106 (62%) strongly agreed to the statement that access and use of electronic resources should be flexible and enjoyable without encountering more challenges. This implies that students will enjoy and appreciate accessing and using electronic resources more on the off chance that they trust that using electronic resources is free from effort. The study findings further revealed that 83 (48%) agreed to the statement that it is easier to become skilful at accessing and utilizing e-resources.

Seemingly, students, who access and use e-resources regularly, become more skilful and continue to access and use such resources with ease. Seventy-five (75, 44%) agreed to the statement that learning to access and use e-resources is easier for them. Surprisingly, 43 (25%) of students disagreed with the statement: "I find e-resources easy to use." This finding could possibly suggest that the UNAM website was not user-friendly to navigate through.

In general, web search engines are accepted as being simpler to use than academic library systems, which are increasingly more complex to use (Martin 2008), and that seeking information in a library databases system requires aptitudes to viably locate and

retrieve the required information. Byun and Finnie (2011) noted that users of the system might be unwilling to embrace a complex system or a web interface once found to be hard to explore.

In this way, students with fewer pursuit aptitudes possibly will not prefer to utilize a complex library system. For this reason, it is important to empower students' with the requisite searching skills by offering information literacy training to minimize access barriers. The finding also implies that students, who perceived that the electronic resources were easy to use, had a higher expectation and intention to use them than those who perceived electronic resources to be hard to use. The study finding is contrary to other studies, including those of Awwad and Al-Majali (2015), Sargent, Hyland and Sawang (2012), and Venkatesh *et al.,* (2003), who found the existence of a lower effort expectancy towards the use of information systems.

5.5.3 Social influence

Findings from this study show that social influence was perceived positively by the majority (98 or 57%) of the students, who strongly agreed with the statements that people who influence their behavior will think that they should access and use electronic resources in their studies and that associates important to them think that access and use of electronic resources will improve their academic performance, with 57 (98%) agreeing to the statement (see Figure 4.3). This finding is affirmed by the results presented in Figure 4.1, which clearly indicated that students learned about electronic resources from lecturers (22%), library staff (33%) or fellow students (15%), implying that students were influenced by their social groupings.

This result is consistent with some previous studies; Pinigas, Cleopas and Phiri (2017), and Zuiderwijk, Janseen and Dwivedi (2015). For example, a study by Pinigas, Cleopas and Phiri (2017) reported that social influence affects behavioral intentions to embrace and accept electronic resources.

This suggests students would be eager to continue the utilization of electronic resources, attributable to outside influences, for example lectures, and fellow students. Taiwo and Downe (2013) supported the above view and contended that end-users would possibly not be obliged to utilize the information system until the moment that they are awakened by vital leaders, who influence their attitudes and behaviors. Among the students, who acknowledged having been influenced by opinion leaders to access and use electronic resources, only a few (31, 8%) strongly disagreed with the statement: “My lecturers and other peers are helpful in assisting me to effectively access and utilize electronic resources during my courses”, against a majority (43, 25%) of the students, who perceived that lecturers, other staff members, and peers had been helpful in assisting them to access and utilize electronic resources effectively.

Such findings suggest that, despite their influence, library staff and lecturers are expected to do more by providing direction and guidance to students so that they become more inclined to use electronic resources. Efforts dedicated to promoting electronic resources to the students, such as the library website, training, library orientation, online guides, word of mouth, posters and social media, might possibly influence a student’s intention to use electronic resources.

5.5.4 Facilitating conditions

Students surveyed in this study cited promotional initiatives such as marketing and training, ICT infrastructure (computers and internet connection), aptitudes in the use of electronic resources, immediate assistance offered by library staff and library orientation, as important factors that influenced their positive use of electronic resources.

This construct predicted student's' intention either to use electronic resources or not. Based on the findings shown in Figure4.4, 37% of the students disagreed with the statement that internet connectivity is reliable and fast enough to support access and use of electronic resources, compared to 16% of the students who agreed with the statement. This possibly means that the internet connection was not fast enough to allow students to access and use electronic resources.

This finding was further confirmed by library staff who indicated that slow internet hampers smooth access to electronic resources. The finding is also supported by Katabalwa (2016), who uncovered that deficiency of access to the internet for students was one of the issues experienced in their use of electronic resources.

The study findings further revealed that 31% of the students disagreed that the library orientation they received prepared them well to enable them to access and use electronic resources compared to 18% of the students who agreed with the statement (see figure 4.4). This is a serious concern; students need library orientation which adequately informs them on a continuous basis about which library resources are available and how they can be accessed and used effectively.

In terms of library support, Figure 4.4 showed that 27% of the students agreed that the library has supported the use of electronic resources through various initiatives, such as marketing and training, confirming the study by Joo and Choi (2015), which found that one of the ways to promote awareness and use of electronic resources is through training. Fourteen per cent (14%) of students surveyed in this study strongly disagreed with the statement; an indication that more awareness creation and adequate training need to be offered regularly to encourage a high level of usage.

Furthermore, 21% of the students felt that they possess skills that are required to access and utilize electronic resources, while 26% of the students strongly disagreed with the statement. Seemingly, students, who were not in concurrence with the statement, possibly lack the searching abilities important for ideal use of electronic resources. Ukachi (2015) recommends that the powerful use of electronic resources by students will be affected by the degree of information proficiency aptitudes that they possess.

Based on the findings in Figure 4.4, it is concluded that students who agreed or strongly agreed with the presence of facilitating conditions were more likely to use electronic resources than those who reacted to the contrary. This implies that students will, in general, utilize electronic resources in the event that they have access to the necessary facilities, such as adequate computers and fast internet connections, and also when they possess the necessary searching skills and the required support from library staff and academic staff to utilize electronic resources.

Barriers associated with access to electronic resources are most likely to be higher when facilitation conditions are not readily available and, subsequently, the intentions of students to use electronic resources will be minimal (Zuiderwijk, Janseen and Dwivedi2015). The result is consistent with several previous studies which demonstrated that facilitating conditions influence behavioral intentions to use information systems (Sargent, Hyland and Sawang 2012, Venkatesh and Davis 2000, Venkatesh 2011). Venkatesh and Davis (2000) report a positive effect between facilitating conditions and behavioral intentions.

Furthermore, the majority 38% of the students did not form an opinion with regard to the statement that library staff members were available to assist students when faced with difficulties in accessing electronic resources. This finding could imply that there was lack of support from library staff in assisting students who experienced challenges in their attempts to access and use electronic resources.

In order to resolve the problem, as Park *et al.,* (2009) contended, the provision of online library services alone may not prompt ideal use. Rather, library assistance assumes an indispensable role in the elements of online library system use. It is, therefore, imperative to improve facilitating conditions and social influences in UNAM libraries.

5.5.5 Behavioral intentions: The behavioral intention to use electronic resources is a good predictor of the extent to which individual users will adopt electronic resources. Based on the findings shown in Table 4.6, 92 (53%) of the students indicated that they intended to access and use electronic resources in their area of studies, 53% indicated that they intended to use electronic resources during the course of their undergraduate

studies at UNAM, while 53% strongly agreed and predicted that they would use electronic resources in the second semester.

The overall findings demonstrate that the behavioral intention of the students is to access and use electronic resources, thus students' interaction and associations with electronic resources are continuing. The results from this study corroborate previous findings uncovering behavioral intentions to be a determinant of actual usage (Lwoga and Komba 2014, Maduku 2015, Venkatesh *et al.,* 2003).

Drawing from the findings above, the study construed that facilitating conditions, effort expectancy, performance expectancy and social influence affect behavioral intention of undergraduate students to access and use electronic resources.

5.6 Students preference for web- based information resources and actual use

Although the range of web- based information resources in academic libraries has increased, some are more preferred and used than others. The findings of this study uncovered that Google search was rated highly by the vast majority 170 (99%) of the students who participated in the study as the source of information most preferred.

The reviewed literature showed similar results. Earlier studies by Bhat and Mudhol (2014) and Frandsen *et al.,* (2017) found that, among various online resources, undergraduate students preferred to access search engines for information compared to other online resources. For example, Bhat and Mudhol (2014) revealed that students, who participated in their study, preferred using search engines compared to other digital resources, such as e-journals and databases, to access information.

Similarly, Frandsen *et al.,* (2017) observed that subscription-based resources are not used to their fullest potential and academic libraries throughout the world are battling with low utilization of online library databases. The popularity of Google search among students could possibly be due to their perception that it is convenient and easy to use, fast, and provides direct answers to their search queries. Seemingly, students preferred using the internet the most due to the lack of searching skills required to access and use other web-based information resources.

Students need not only to get information, they should have the essential aptitudes and learning to access and utilize information successfully. It is crucial that students acquire information literacy aptitudes that will empower them to identify reliable sources of information for their scholarly work. Doyle (1994) shares this view and expresses that students should be helped with getting the competence to access, assess and use information proficiently.

It should, however, be stressed that the over-dependence of students on web search engines, such as Google, as their source of information, would likely compromise the quality of their assignments and research projects, as these require a variety of credible and reliable information sources. It is of utmost importance that students are fully equipped with adequate information searching abilities.

E-past examination papers and OPAC were also greatly preferred and used by 168 (98%) and 137 (80%) respondents, respectively. This is an indication that the vast majority of students utilized these electronic resources for scholarly purposes, in particular, to prepare for semester examinations by acclimating themselves with past

examination papers, and, in the case, of OPAC, by searching the entire library collection to find the required information sources. It was surprising that some students had no preferences for licensed databases 49 (28%), e-journals 23 (13%), library e-resources 21(12%), and e-books 21(12%) as revealed in Figure 4.5. These scholarly resources contain a large amount of accurate, reliable information, and are very costly. This result supports the findings of a recent study carried out by Salubi, Ondari-Okemwa and Nekhwevha (2018), who found that 69.5% of the students never used e-journals, 56.3% never consulted library databases, and 69.5% never used e-books.

Similarly, in the study carried out by Tlakula and Fombad (2017), it was found that among undergraduate students at the University of Venda, the great majority of the student's preferred Google and Google Scholar, while only one preferred to use e-books. Conversely, some other studies (Becker, Hartle and Mhlauli 2017, Maduku 2015) reported opposite findings that online resources, such as online databases, e-books and e-journals, were preferred at their institutions as they offered students access to an extensive variety of information for study and research purposes.

Furthermore, Becker, Hartle and Mhlauli (2017) reported that students at the Cape Peninsula University of Technology preferred using online resources and further noted that there had been a 93% increase in e-book page downloads since 2011. Similarly, Maduku (2015) reported that, among the 312 tertiary education students in the Gauteng Province of South Africa who used e-books, 130 (41.7%) had found them useful.

The results of this study may imply that students' low preference for using licensed databases, library e- resources, e-books, and e-journals could possibly be attributed to

the limited competencies in searching, as they searched for information elsewhere, from sources, such as the web-based internet search engine (Google). Soohyung and Namjoo (2015) pinpointed the requirement for library staff and academic staff to support and urge students in the advantages of utilizing online resources by stressing that those resources are significant and reasonable hotspots for their scholastic tasks.

Based on the findings from this research, however, it can be concluded that the preferences for, and usage of, electronic resources by students is still limited due to personal factors and lack of facilitating conditions.

5.6.1 Use of licensed databases

Students were asked to indicate which licensed databases they used for their studies. The study clearly indicated that the majority (110 or 64%) of the students did not effectively use most of the licensed databases subscribed to by the library. This was echoed by the library staff who participated in the study, who claimed that electronic resources were not optimally utilized by the undergraduate students. It was additionally discovered that, of the few of students who made use of electronic databases, just 11(6%) used them regularly. The results presented in Table 4.6 show that IEEE, Science Direct, EBSCOhost, AGORA and Emerald were the few databases used. Sixteen (16, 9%) of the respondents used the IEEE database, 14 (8%) used Science Direct, while 12 (7%) used EBSCOhost.

These outcomes, nonetheless, are consistent with the findings of various past investigations. Salubi, Ondari-Okemwa and Nekhwevha (2018) found that only 6% of undergraduate students at Nelson Mandela University and the University of Fort Hare

used electronic databases with 62.3 % of the respondents preferring print information resources. Tlakula and Fombad (2017), in a study of the use of electronic resources at the University of Venda, South Africa, reported that the level of usage of electronic resources by undergraduate students was elementary and limited to Sabinet African Journals and EBSCOhost.

In like manner, Gakibayo, Ikoja-Odongo and Okello-Boora (2013) found that students at the Mbarara University did not fully utilize the online databases that were available to them. The absence of utilization was credited to various elements. One reason, according to the researchers, was an absence of mindfulness among students of the accessibility of the databases, and their not monitoring the resources' significance and incentive to their studies.

Contrary to the above findings, Toteng, Hoskins and Bell (2013) investigated the use of electronic databases by law students at the University of Botswana and found that many undergraduate law students, to a large extent, used most of the electronic databases that the library subscribed to. OPAC, Juta Publications, and EBSCOhost were the databases that the students utilized the most.

The low dimension of use of licensed databases by students could be credited to an absence of searching abilities, combined with restricted numbers of computers, slow internet connections and a high dependence on Google search to source information. Another possible reason could be the fact that students are still in the infancy stage of their study as most of them were either first or second year undergraduates. The above

factors may have influenced the overall usage of the licensed databases amongst students.

5.6.2 Frequency of usage of web-based information resources amongst students

The frequency with which electronic resources were used is one of the variables that the researcher used to determine the extent of the use of electronic resources. The findings show that many of the web-based information resources were not used by more than half of the surveyed students. The study findings revealed that the majority (68%) of the students never used e-books, and (64%) never used licensed databases. Resources that were also never used included e-library databases (59%) and e-journals (56%).

Internet Google search was used quite often by 66% of the students. Other frequently used web-based information resources were e-past examination papers (55%) and OPAC (37%). These resources encourage access to relevant and current information for learning and research. This indicates that some scholarly information sources were generally perceived to be essential when locating information while others were underutilized.

The research findings above correspond with the results of Mogase and Kalema's (2015) study of e-resource usage in South African higher institutions of learning. Their findings revealed that students at Tshwane University of Technology do not effectively use electronic resources. Similarly, the study conducted by Ukachi (2015) found that large proportions of undergraduate students at the University of Lagos, Nigeria, did not effectively utilize electronic resources.

The most surprising finding on this particular question was that 68% of the students never used e-books. This could possibly be due to limited training or a preference for other sources of information, such as books in print format. In this regard, information literacy skills play an integral role in enabling students to access and use all kinds of information sources in all formats. There is, hence, an earnest requirement for the library to set up measures to empower students with the necessary information literacy skills that they need to boost their ability to receive maximum benefits from all kinds of scholarly information sources. A similar discovery was reported in China, by Wang and Bai (2016) who noted that students were aware of e-books but that their use of them was very low.

Although UNAM library has made provision for off-campus access through its website to ensure equitable and easy access to its online information resources, the study's findings give a clear picture that most undergraduate students depend intensely on Google search as their essential source of information. This could possibly be because of the ease of use associated with accessing Google search compared to other electronic resources, which require more sophisticated searching skills. The Technology Acceptance Model (TAM), which has been used in several studies, reinforced the view above, namely, that an individual will, in general, utilize an information system depending on the apparent simplicity of its utilization.

5.7 Purpose(s) of using electronic resources

The findings of this study revealed that undergraduate students had used electronic resources for a variety of reasons. In this study, it was found that the majority (157 or

91%) of the students used electronic resources to look for current general information of an academic nature, 152 (88%) to write assignments, and 146 (84%) to prepare for examinations. Writing research projects was another popular reason cited by 44 (26%) of respondents. Meanwhile, of the students, surveyed 44 (26%) indicated that they used electronic resources for all the purposes noted above.

A high extent of utilization identified with finding current general information and for writing assignments gives an impression that the majority of students depended vigorously on the web to search for information instead of other online academic information sources. This view echoed that previously advanced by Arya and Talukdar (2010), who reported that the greater part of students surveyed were utilizing the web to update subject knowledge and to gain current and general information.

Generally, the above findings imply that students, who have used electronic resources, used such resources for educational purposes and, in line with the UTAUT and TAM models applied in this study trusted that utilizing electronic resources would improve their scholastic performances. These findings are consistent with the results of Hwang, Jayhoon and Hwan (2014), Nagvi (2014), Ukachi (2015) and Wang and Bai (2016).

For example, Nagvi (2014) found similar results and noted that students used electronic resources primarily for educational purposes at Jawaharlal Nehru Medical College (JNMC) in India. A similar study by Wang and Bai (2016) reported that undergraduate students at Zhejiang University used e-books mainly for leisure purposes. This is consistent with the study of Hwang, Jayhoon and Hwan (2014), in which they found that

users at university libraries in South Korea had various purposes for using e-books, such as personal interest, leisure, assignments, and research/ study.

5.8 Library users' training programs

The students were asked whether they had received training on the use of electronic resources. Library training programs play an integral part in imparting information skills to students. Given the importance of the library training programs, the study revealed that the majority (121 or 70%) of the students had received training, with 113 (67%) having attended library orientation, 65 (38%), information literacy and 58 (34%) library skills training.

Surprisingly, 51 (30%) of the students had not received training. One could conclude that, as far as trainings programs are concerned, the significant number of 51 (30%) of students, who had not received any training, would certainly have been at a disadvantage compared to their peers. Students could possibly be confronted with numerous difficulties in their endeavors to access and use electronic resources.

The library staff (12, 100%), who participated in the survey, provided further insights into the types of training programs in place. They indicated that library orientation aimed at introducing students to the library's wealth of resources, information literacy training was designed to train students to have the ability to find, assess and use information, were, to some extent, common in all three of the libraries that were surveyed. Despite the fact that the training programs were common in UNAM libraries, this study did not attempt to explore the existence of a policy governing how electronic resources should be marketed and used.

Numerous studies revealed similar results in as far as training programs in academic libraries worldwide are concerned (Baro, Seimode and Godfrey 2013, Julien and Merillat 2013, Mnkeni-Saurombe 2015, Moyo and Mavodza, 2016, Mugwisi 2015, Omar, Haji and Mwitube 2014 and Ullah and Ameen 2014). These researchers contend that academic libraries are engaged in the offering of information literacy training to the student community.

For example, Baro, Seimode and Godfrey (2013) reported that university libraries in the United Kingdom and the United States of America have been providing information literacy training to undergraduate students. Similarly, in African countries, a recent study by Mugwisi (2015) found that the majority of university libraries surveyed in South Africa and Zimbabwe were teaching information literacy, while some were not. A study conducted by Mnkeni-Saurombe (2015) found that the UNISA library provides information literacy training to both students and academics.

The study further sought to ascertain whether or not the training programs were effective in imparting necessary skills to students. It came to light that training programs at UNAM libraries were not effective as the majority (94 or 78%) indicated that training programs were not effective, while 27 (22%) of the students indicated that the training they had received was effective. These results were reinforced by the views of 11 (92%) of the library staff that the training programs in UNAM libraries were “not effective”. This possibly explains why there is an under-utilization of electronic resources, such as e-books, e- journals and licensed databases. It is imperative that the training programs in UNAM libraries be revisited. This will go far towards improving student’s ability and placing viable usage of electronic resources within their reach.

The above findings are in agreement with those of Baro (2011), who reported that most university libraries in Africa offer user training and library orientation, yet that most come up short on the ability to create information users who exhibit satisfactory information proficiency characteristics.

In South Africa, a recent study conducted by Mogase and Kalema (2018) on the usage of e-resources by students at Tshwane University of Technology concurred with the observation of Baro (2011) that the university had not prepared training programs that had progressed past library orientation and they neglected to rouse students to use electronic resources. Similarly, Tlakula and Fombad (2017) found that training in the use of electronic resources at the University of Venda is as yet almost non-existent as training, for the most part, comprises of coincidental orientation within the first year.

The result of the current study is dissimilar to that of Sienberhagen and Nampak's (2012), who evaluated the Digital Information Literacy Program (DILP) designed and developed for South African students and revealed that the DILP was generally effective in enhancing student's' digital information literacy skills. There is a need to redesign all the training programs in UNAM libraries to ensure the effective training of library users.

The study further revealed challenges which impede the effectiveness of training programs. The results, as shown in Figure 4.9, show that, 87% and 83% of the students respectively indicated inappropriate timing of the training sessions and inadequate computers as being serious problems. This means that scheduling training sessions appropriately would possibly enable students, who may never have had the chance to fully attend library training sessions offered by subject librarians, to do so. Limited

space in the training venue, as indicated by 73 (78%) of the students, and limited online Lib-guides, as shown by 52 (49%) students, were considered as obstacles.

Providing online Lib-guides would possibly enable students to use such materials at times and venues that suited them more adequately. It was also revealed that 36 (38%) of the students highlighted the relevance of the training content as a setback. It is imperative that the training content be revised on a continuous basis to suit the current nature of information provision and access prerequisites.

The above results concur with the findings of the studies conducted in various universities in African countries by, amongst others, Baro, Seimode and Godfrey (2013), Baro and Zuokemefa (2011), Moyo and Mavodza (2016) and Mugwisi (2015), which cited absence of appropriate facilities, such as computers and skilled trainers, online lib-guides, lack of homegrown standards, lack of adequate budgets and lack of basic information handling skills by students, as limiting factors. It should be noted that, without an adequate ICT infrastructure, the whole purpose of providing effective user training is compromised. Improved facilitating conditions are, therefore, required in order to remedy the challenges affecting the effectiveness of training programs.

Findings from the library staff indicated various interventions aimed at improving users training in UNAM libraries. These included the ongoing training of staff, as revealed by the majority (11 or 92%) of library staff, an increase in budgetary allocation towards training, and the provision of adequate computers and training venues. Seemingly, the ongoing training of staff would enable staff to acquire the necessary skills needed to

enable them to conduct training sessions and assist students with their problems in using electronic resources.

The findings from the library staff further revealed the impact of library users' training with regards to accessing and using electronic resources. All of the library staff (12 or 100%) revealed that users' training can have a great impact, as it improves electronic resource usage and improves the quality of student's' assignments and projects. Eight (8, 68%) indicated quality citations, while 6 (50%) of the participants revealed that library users' training will decrease the number of students inquiries at the Reference Service Section. This finding implies that students will have fewer problems and that their visits to the reference desks will be minimal as they become more able to access electronic resources on their own without the assistance of library staff.

Similar results were found in a study conducted by Mugwisi (2015) on the role of librarians in teaching information literacy in Zimbabwean and South African universities. The study found that the positive outcomes of library users' training included improved electronic resources usage in addition to traditional library resources as users turn out to be progressively mindful of alternative sources available, and, quality referencing, in consequence of which, the quality of students' projects is improved (Mugwisi 2015).

5.9 Accessibility and use of electronic resources at UNAM libraries

Ahmed (2013) Mammo and Ngulube (2014) and Harle (2010) found that, although a high proportion of students were able to access electronic resources, some were not fortunate to do so owing to barriers, such as limited training, slow internet speed and insufficient ICT equipment in academic libraries.

The findings of this study revealed that, while 39 (23%) of the students reported having accessed electronic resources “sometimes” (see Figure 4.10), the majority (97 or 56%) of the students indicated that they were not able to access electronic resources. The challenges in accessing electronic resources could be ascribed to an absence of information literacy abilities and limited training.

Similarly, limited access to computers and internet connectivity could possibly be contributing factors. Seventy-five (75, 44%) of students indicated that they were able to access electronic resources. This finding implies that students who were able to access electronic resources were possibly among those who preferred Internet Google search as their first choice for finding general current information (see Figure 4.5).

Altogether, there is some consensus between these findings and the results of a study by Ahmed (2013), who found that students accessed online resources consistently on a daily basis and a few times each week. Ani (2010) found that internet is accessed daily by the student majority in three Nigerian universities.

5.9.1 The provision of ICT facilities in UNAM libraries

In line with the Unified Theory of Acceptance and the Use of Technology (UTAUT) model applied in this study, an individual’s use of electronic resources is influenced by facilitating conditions (Venkatesh *et al.,* 2003). Facilitating conditions imply providing the necessary organizational and technical supports and ICT infrastructure to the students to enable them to accept and use electronic resources.

On the inquiry with respect to whether ICT facilities were sufficient, the results in Table 4.14 revealed that 10 (83%) library staff members felt that ICT facilities in UNAM

libraries were fairly sufficient, thereby disagreeing with students' claims. The above finding, as revealed by library staff, which claims ICT facilities as fairly sufficient, is contrary to that of 33% of the students, who did not form an opinion on the statement that ICT facilities available at UNAM libraries were supportive in accessing electronic resources. 19% disagreed and 16% strongly disagreed with the statement that ICT facilities available at UNAM libraries were supportive in accessing electronic resources (see Table 4.14).

The findings from students are consistent with the results of previous studies that revealed that most of the universities lack ICT infrastructure and make available only a few computers for users to access electronic information resources (Mammo and Ngulube 2014, Sohail and Alvi 2014, Toteng, Hoskins and Bell 2013). These observations are supported by Harle (2010) in a study involving four universities in Africa, which found that 20 to 30 students shared a single computer. A study by Pinigas, Cleopas and Phiri (2017) indicated that the Great Zimbabwe University, the Harare Institute of Technology, and Chinhoyi University of Technology infrastructure does not influence student's' choice to grasp electronic resources. In contrast, a study in three Ghanaian Universities by Dadzi and Van der Walt (2015) found that access to digital resources from the library was very encouraging; implying that university services are ensuring that there is adequate access to computers, and reliable and stable internet connectivity. Many access problems mentioned above could be overcome by an app developed by the library for use by the students to access electronic resources on their smartphones.

5.9.2 Devices used to access electronic resources

In order to establish the dimension of use, students were requested to indicate the devices they used to access online information sources for academic purposes. The availability of ICT devices conceivably has an effect on the use of electronic resources. This view is reinforced by Gakibayo, Ikoja-Odongo and Okello-Obura (2013) who advised that every university should endeavor to have adequate ICT facilities, such as networked computers, to promote easy access to the electronic resources.

When asked to indicate the ICT devices used most often to access electronic resources, 45% of the students stated that they often used laptops to access electronic resources. Seemingly, students prefer to access electronic resources in their home using their personal laptops. Desktop computers ranked second with 36%, above hand-held devices, such as smartphones, tablets and iPads with 19% (see Figure 4.11).

The above findings seem to corroborate a study by Wiese and Du Plessis (2014), which found that second year students at the University of Pretoria had access to desktop computers, laptops, iPads and tablets, which they frequently used to access e-books. A recent study by Tang and Barnett-Ellis (2017) reinforced the view that laptops, desktop computers, tablets including (iPad, Android, Kindle Fire, and Nook) and mobile phones were the essential devices that students used for reading digital books at Jackson-ville State University. Hwang, Jayhoon and Hwan (2014) observed that smartphones and tablets have turned out to be extremely popular devices on which to read digital books.

5.9.3 Location of accessing electronic resources

One of the benefits of utilizing an electronic resource is that access is guaranteed at any place through networked technology devices. Figure 4.11 showed that students used more than one location to access electronic resources. Although there are several points of accessing electronic resources, the majority of the students (67 or 39%) accessed electronic resources on campus and 58 (34%) indicated that libraries were their main access location. Classrooms ranked second above lecture halls, whilst off-campus access was preferred by 13 (22%).

Internet cafés seemed not to be popular among the students, and this could be explained by the higher internet charges levied by internet providers in Namibia, making it unaffordable to many students, who are non-bursary holders.

The highest number of student's who accessed electronic resources on campus within libraries supports the claims by Toteng, Hoskins and Bell (2013) that the majority of law students at the University of Botswana accessed online databases from the library. In addition, the findings of the current study were in agreement with those of Ahmed (2013), who found that libraries and lecture halls were the most common places from where students accessed online databases. These findings are, however, in contrast to the study by Natarajan (2017), which found that students' visits to libraries have decreased as a consequence of their accessing electronic resources more often at hostels and departments.

In line with the UTAUT model informing this study, students are expected to use electronic resources if facilitating conditions are provided. The finding further revealed

that the majority of students (97 or 56%) felt that they were not able to access electronic resources from different venues, with less than half of the students 75 (44%) indicating that they were able to access electronic resources from different venues. Students who were not able to access electronic resources could possibly be faced with various challenges that prevented them from accessing electronic resources from different locations.

5.10 Issues experienced by undergraduate students' when accessing and using electronic resources

This section discusses the findings pertaining to the issues undergraduate students experienced when trying to access and use electronic resources. The findings revealed in section 4.11.5 showed that the majority (53%) of the students reported slow internet speeds as the main common problem that affected their ability to access and use electronic resources. The relative slowness of internet speed can result in a number of problems related to online library resources use. Among other things, it can result in loss of data, incomplete searches, and, in many cases, the need to reconnect to the resources and start the search over again.

These findings support those previously made by Mammo and Ngulube (2014) who reported that poor internet connectivity was a major obstacle in institutions of higher learning in Ethiopia. Previous studies by Isibika and Kavishe (2018), and Sohail and Alvi (2014) found similar results and noted that slow internet speed was a noteworthy obstacle to students' use of electronic resources.

In addition, 51% of the students indicated that they faced a challenge in terms of the limited number of computers available. This could result in many students being

disadvantaged in their attempts to access electronic resources in the library, as they did not own their own laptops. Harle (2010) made a similar discovery in his study of ICT challenges in libraries in four African universities and reported that 20-30 students shared a single computer.

Similarly, Katabalwa (2016), Mammo and Ngulube (2014), and Toteng, Hoskins and Bell (2013) noted that a limited number of computers inhibited the majority of students, whom they investigated, from accessing electronic resources. This implies that many university libraries in Africa are struggling to provide adequate computer facilities in their libraries, possibly owing to limited budgets; a situation which negatively affects the extensive use of electronic resources amongst students.

Limited searching skills were reported by 50% of the students. This is a challenge because students with limited searching skills cannot exploit the full benefits offered by online information resources. Only after intensive and in-depth training in scholarly database searching could they familiarize themselves sufficiently with electronic databases and gain searching experience. Previous studies by Baro, Seimode and Godfrey (2013), Katabalwa (2016), Mammo and Ngulube (2014), and Ukachi (2015) reported that limited search skills are a major deterrent to electronic resources access and use.

Findings from this study further revealed that inadequate points of use in the library were making it difficult for 48% of students to connect their laptops and access online resources. This is a serious concern for this study, as it affects students' behavioral intentions to access and use electronic resources.

Information overload was also one of the major challenges that 40% of the students experienced. This happens when students retrieved too much information and had difficulty in selecting the information most relevant to their needs. This could possibly be connected to their absence of aptitudes to make minor changes to the search results. This result supports the findings of a study conducted in Croatia by Tanackovic, Ivanovic and Cupar (2017), which reported that students lack the abilities to evaluate the quality and relevance of information available in electronic databases. Further, 28% of the students reported limited time for computer use in the libraries as a challenge.

Limited access to the internet was also one of the challenges that 5% of the students experienced. The absence of internet connectivity or limited internet access, negatively affect students, as they cannot access online information sources. Isibika and Kavishe (2018), in their study, also found unstable network connectivity to be a major barrier that caused underutilization of the library's subscribed electronic resources at Mzumbe University in Tanzania.

The above difficulties were further confirmed by the library staff, who took part in the survey. Eight-three percent (83%) indicated that inadequate supply of personal computers was a major obstacle. Eight-three percent (83%) indicated slow internet speeds, 33% reported limited awareness, whereas 25% revealed limited database subscription as challenges. This suggests that the majority of undergraduate students at the surveyed UNAM libraries experienced an assortment of difficulties when endeavoring to access and use electronic resources.

The TAM and UTAUT models that were adopted for this study state that the acceptance of technology by an individual is largely dependent on his or her perceptions regarding facilitating conditions. Most of the issues experienced by students have been shown to influence their behavioral intentions either to use or not use electronic resources.

5.11 Solutions to improve access to, and use of, electronic resources in UNAM's libraries

Based on the analysis of the data provided by the students and library staff, the solutions below were advanced to enhance and intensify the use of electronic resources among students:

- A need for improved facilitation conditions such as an upgrading bandwidth to ensure higher internet speeds
- A need for the provision of adequate networked computers in the libraries for student's use
- Offering more vigorous and ongoing training programs
- The undertaking of greater awareness creation and promotion of electronic resources
- Greater need to subscribe to subject related databases in all academic disciplines

5.12 Chapter summary

This chapter discussed the research findings presented in Chapter Four. It appears that the electronic resources in use in UNAM libraries are diverse and that online resources are used for a range of reasons, including current general information, writing assignments, preparing for examinations and writing projects. Library orientation was the main source of awareness creation confirmed by the library staff. The results of the study demonstrate that students were familiar with, and knew about, the existence of the electronic resources in UNAM libraries, and that they mostly learnt about the existence of such resources from library staff, UNAM libraries webpage, lecturers, fellow students and notice boards.

The research findings established that facilitating conditions, effort expectancy/ perceived ease of use, performance expectancy/ perceived usefulness and social influence affect behavioral intentions of undergraduate students to use electronic resources. With regards to students' behavioral intention to access and use electronic resources, it appears that students demonstrated a desire and willingness to access and use electronic resources in their studies.

From the results of the study, it appears that Google search is the most preferred source of online resources compared to other web-based information resources, such as e-books, e-journals and licensed databases. Generally, library staff revealed that electronic resources were not used optimally by students. The findings further revealed that there is an underutilization of licensed databases among students with only 9% of the students having used the IEEE database. In terms of frequency of use, Google

search stood out to be the most used web based information resource, as indicated by the 66% of students who used it “quite often”.

It appears that the library training programs offered to students at UNAM libraries range from library orientation, to information literacy and library skills training. Thirty percent 30% of the students had not attended any of the training offered. The training programs offered were found to be ineffective in imparting skills to the majority of students as confirmed by the library staff. Timing of training programs resulted in such training being ineffective according to the students. Effective training will result in improved electronic resources usage and improve the quality of student’s assignments and projects. The findings further show that, often, students seek assistance from library staff when faced with difficulties in accessing and using electronic resources.

The study’s findings further show that 56% of the students were not able to access electronic resources, while 37% of the students accessed electronic resources frequently on campus using desktop computers. From the results obtained from the students and library staff, it becomes clear that although electronic resources were made available to meet students’ information needs, there were challenges which, if not attended to, might result in students fall short in using electronic resources fully.

The next chapter presents the summary of the major findings, the conclusion and a series of recommendations. It also answers the specific research aims and objectives that underpin this study.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6. Introduction

In the previous chapter, the data collected was analyzed, presented and interpreted. Chapter Six summarizes the findings of the study, provides the conclusions and recommendations, and suggests directions for further research. The study set out to examine access to, and use of, electronic resources by undergraduate students at the selected campuses of the University of Namibia (UNAM).

The following objectives were formulated in line with the aim of this study.

1. To find out what type of electronic resources are available at UNAM libraries
2. To establish the awareness of undergraduate students regarding electronic resources
3. To find out which electronic resources are used by undergraduate students
4. To determine the availability of training programs to assist undergraduate students with their access to, and use of, electronic resources
5. To determine factors related to undergraduate students' access to, and use of, electronic resources

6.1 Summary of the study findings

In this section, the summary of the findings is presented based on the objectives of the study.

6.1.1 Types of electronic resources available at UNAM libraries

Academic libraries are enjoying an upsurge in the availability and usability of electronic resources in academic institutions around the globe. This study has shown that electronic resources such as e-journals, e-books, OPAC, licensed databases, the internet, library e- resources, and e- past examination papers are available at UNAM libraries. This research, therefore, established that, in common with many other academic libraries around the globe, a variety of electronic resources are readily available in UNAM libraries for use by students, researchers and faculty members.

6.1.2 Awareness of students about electronic resources

This study has shown that most students were familiar with electronic resources available at UNAM libraries. It concludes that the majority of students surveyed were familiar with the presence of electronic resources at UNAM libraries despite the fact that utilization of licensed databases, e-books and e-journals was reported as being low. The study further established that there were mechanisms in place to create greater awareness amongst the student body as to the electronic resources available including for instance, the library website, lecturers, fellow students, library staff and notice boards. Most students learnt about electronic resources from library staff.

6.1.3 Electronic resources mostly used and factors affecting usage

The results of the study revealed that the majority of students by a substantial percentage preferred the internet as a source of information compared to other electronic resources, such as licensed databases, e-journals and e-books. The study also revealed that licensed databases were not highly used by the majority of students. The study findings also show that the internet, OPAC and e- past examination papers were the resources most frequently used by students. Furthermore, electronic resources at UNAM libraries were found to be predominantly used for a range of reasons including looking for current and general information, writing assignments, preparing for examinations, and undertaking research for writing projects. Accessing current and general information were found to be the main reasons that electronic resources were used compared to other reasons mentioned above.

The ICT tools used by students to access electronic resources, included, desktop computers, laptops and handheld devices, such as smartphones, tablets and iPads. Desktop computers were the most used ICT tools. However, the study revealed that these were inadequate in number to address student demand for their use. It further emerged in this study that students accessed electronic resources on campus, in the library, classrooms and within lecture halls. Of these locations, on campus access was found to be the most prevalent.

The study findings also show that most students reported not having been able to access electronic resources due to technical and personal barriers. Furthermore, the study established that the access challenge experienced by students leads to a

diminishing use of electronic resources. Challenges to accessing electronic resources included slow internet speed and insufficient computers, as well as inadequate points of use in the library, information overload, limited time for computer use in the library, and limited access to the internet.

6.1.4 Availability of training programs in UNAM libraries

This study has discovered that there are training programs in UNAM libraries intended to impart skills to students. These training programs and their learning objectives are summarized as follows:

- Library orientation, information literacy training are the types of training programs in place in the UNAM libraries.
- Some students have received training whilst others have not.
- There is an inadequate level of skills among students to adequately explore and use electronic resources at UNAM libraries.
- User's training is of significant importance because training improves the accessibility and usage of electronic resources, ensures quality referencing and improves the quality of students' projects and reduces individual user's inquiries.
- The majority of students attended training sessions and the findings obtained from library staff revealed that training programs in UNAM libraries are not effective.

- The findings of this study further revealed that inadequate computers, limited space in the training venues, a perceived lack of relevance of the training content, inadequate online training materials and inappropriate timing of the training sessions were some of the challenges that contributed to the ineffectiveness of training programs in UNAM libraries.

6.1.5 Solutions to improve access and use of electronic resources at UNAM libraries

The following solutions are advanced:

- There is a need for infrastructure improvements such as upgraded bandwidth to ensure high internet speeds.
- There is a need for the provision of adequate networked computers in the libraries for students use.
- More vigorous and ongoing training programs need to be offered.
- Greater awareness creation and promotion of electronic resources need to be undertaken.
- Subscriptions to subject related databases in all academic disciplines need to be increased.

Challenges and solutions provided by the students were also reinforced by the library staff. Hence the results of the student questionnaire were supported by the results obtained from the library staff.

6 .2 Conclusions

The following conclusions are proffered based on the completed investigation for this study.

6.2.1 Types of electronic resources available at UNAM libraries

The findings of this study (according to library staff) concluded that a variety of electronic resources were available and accepted in UNAM libraries these were: e-journals, e-books, OPAC, licensed databases, the Internet, library e- resources and e-past examination papers.

6.2.2 Awareness amongst students of electronic resources

The study also concludes that the majority of the students from the surveyed UNAM campuses were mindful of the electronic resources that were available for them to use. However, such sources of information were reported to be underutilized. In terms of students' behavioral intention to access and use electronic resources, this study concludes that students demonstrated a desire and willingness to access and use electronic resources in their studies.

6.2.3 Electronic resources mostly used and factors affecting usage

It emerged from this study that OPAC, internet, e-books, e-journals, e-past examination papers, library e- resources and licensed databases were some of the preferred e-resources accessed by students at UNAM. The study concludes that the internet is the highly preferred, frequently accessed and used more by the majority of students, despite there also vast databases and other e-resources available at UNAM library.

It is also concluded that licensed databases, e-journals and e-books were underutilized by the majority of students. The low use of such information sources could possibly be due to a lack of searching skills amongst students coupled with other challenges related to infrastructures, such as the ready ability to access such sources.

In terms of purpose of use, the findings established that looking for current and general information, writing assignments, preparing for examinations and writing projects were the main reasons for electronic resources use. The study concludes that most students use the internet mainly to look for current and general information.

The findings indicate that, despite the availability of electronic resources, some students were not able to access them. The study concludes that students will continue to rely on information accessed from the internet if remedial actions are not undertaken to improve facilitation conditions at UNAM libraries.

The findings established that slow internet connectivity, limited access to computers, inadequate points of use in the library, information overload, limited search skills and limited access to the internet were the main challenges to students in accessing and using electronic resources. The study concludes that problems related to infrastructure such as slow internet connectivity, inadequate computers and a scarcity of searching skills were the main factors hindering students from accessing and using electronic resources.

6.2.4 The availability of training programs in UNAM libraries

The findings further established that there are training programs at UNAM libraries intended to impart skills among students. It is concluded that library orientation,

information literacy training and library skills training are the predominant types of training programs in place in UNAM libraries. A good number of the students and library staff, who participated in the survey, admitted that the training programs at UNAM libraries are not effective in helping students to master the necessary aptitudes required to viably access and streamline their use of electronic resources.

Inadequate computers, limited space in the training venues, the focus of the training content, inadequate online training materials and issues pertaining to the timing of the training were the main barriers that limited the effectiveness of the training programs. It is important to devise strategies that will eliminate these constraints that impact and negatively affect the effectiveness of the training offered.

The findings further revealed that not many of the students, who participated in the survey, had received training. It is concluded that training programs at UNAM libraries were not highly publicized or adequately marketed to the students. This study, therefore, calls for Subject Librarians to devise marketing strategies to attract students, and especially first year students to the training sessions offered within UNAM libraries.

6.4 Recommendations

The following recommendations are advanced based on the objectives and the findings of the study.

- Academic staff should encourage the use of electronic resources by assigning students with tasks/-projects/- assignments that will motivate them to use electronic resources. Furthermore, the library web site should provide guides online. This will direct users in finding the desired information sources.

- UNAM libraries should create training programs targeting all students at all levels of study that are advanced beyond the library orientation which could lure and motivate students to use electronic resources. In addition, to overcome inappropriate timing of training due to clashing timetable and other activities in the university, it is recommended that the training program be integrated into the university curriculum.
- The university should provide the required ICT infrastructure by topping up the number of networked computers in the library and training rooms in order to provide access to a greater number of students.
- Furthermore, UNAM libraries should seek more funds to purchase portable devices such as laptops, for example to provide the opportunity for students to borrow and use them at a specific time when they want to access and use electronic resources. To further overcome access problems, UNAM libraries should develop an app for use by students to access electronic resources on their smartphones.
- Reliable and fast internet connectivity should be secured so that students can seamlessly access electronic resources from everywhere on the campuses.
- UNAM libraries should be equipped with student's workstations and plug in points in the libraries should be expanded. This will allow students to plug in their own devices to access an array of electronic resources.
- Academic staff should encourage the use of licensed databases, e-books, and e-journals. This will require close collaboration between campus librarians and

academic staff to mutually work together to ensure the optimal use of electronic resources among the student community.

6.5 Suggestions for future research

This study focused only on libraries on three campuses of the University of Namibia, namely, Neudamm, Khomasdal and José Eduardo dos Santos. The generalization of the findings could be compromised in light of the fact that undergraduate students from the other nine campuses were excluded and they may have had distinctive views about electronic resources. It is suggested that future study, using this work as a basis, should extend the collection of data to envelop the other UNAM campus libraries so that the different contexts of the other sites could also be studied.

The moderating effects of demographic variables of the UTAUT model do not form part of this study as they were not examined. Future research might inherit the same constructs of the UTAUT model and test the moderating effects of gender, age, experience and voluntariness of use.

Future research could also consider using other research methods such as mixed methods research and incorporating survey, focus groups and in-depth research methods in order to gain in-depth perceptions on issues of access and the use of electronic resources among students, librarians and faculty members in public and private institutions of higher learning in Namibia.

6.6 Final conclusions

The aim of the study was to investigate access to, and use of, electronic resources by University of Namibia undergraduate students at Neudamm, Khomasdal and José

Eduardo dos Santos campus libraries. The study established that the UNAM libraries subscribed to a wide range of electronic resources. The study further established that students were generally aware of the existence of electronic resources at UNAM libraries. However, such sources of information were reported to be underutilized. Additionally, the results showed that search engines, such Google search were most preferred by students over other online information sources.

The study further found that students were not utilizing electronic databases, e-books and e-journals provided by the library to their fullest potential. Although there was evidence of the use of databases such as IEEE Xplore Digital Library by 9% of respondents, the disturbing finding was that there was minimal use of other general and subject-related databases.

Problems related to ICT infrastructure, such as slow internet speed, and insufficient number of computers, and personal weakness with regard searching skills, were the main factors preventing students from gaining access to, and effectively using, electronic resources. Moreover, the study found that there are ineffective library orientation and information literacy training programs at UNAM libraries.

Overall, therefore, the research concludes that students demonstrated a desire and willingness to access and use electronic resources for their course work and research purposes despite some identified challenges that hinder their effective utilization of the online resources provided by the UNAM libraries. To foster greater access to, and use of, electronic resources, a number of recommendations, based on the findings were

formulated and presented. Finally, the study also identified areas that would benefit from future research.

REFERENCES

6, P. & Bellamy, C. 2012.*Principles of methodology: research design in social science*. Los Angeles: Sage

Adesoye, AE. & Amusa, OI. 2013, Use of electronic resources in health sciences institutions in Ogun State, Nigeria. *Pacific Northwest Library Association Quarterly*, 77(3): 28-41.

Afolabi, MO. 2007.Paper presented at the *Electronic Information for Libraries Network (elFL.net) Workshop,* Obafemi Awolo University, Lle-Ife, Nigeria, 18 October, 2007.

Aina, LO.ed. 2002*. Research in information sciences: an African perspective.* Ibadan: Stirling-Horden Publishers LTD.

Anaraki, LN. & Babalhavaeje, F. 2013. Investigating the awareness and ability of medical students in using electronic resources of the integrated digital library portal of Iran: a comparative study. *The Electronic Library*, 31(1): 70-83.

Anandhalli, G & Shakuntala, GS. 2014. Student's attitude towards the utilization of e-resources in Medical College Libraries of Davangere Kamataka: a study*. International Journal of Information Dissemination & Technology*, 4 (3): 234-239.

Ani, OE. 2010. Internet access and use: a study of undergraduate students in three Nigerian universities. *The Electronic Library*, 28(4): 555-567.

Anunobi, CV. & Ukwoma, S. 2016. Information literacy in Nigerian universities trends, challenges and opportunities. *New Library World*, 117(5/6): 343-359.

Appleton, L. 2006. Perception of electronic library resources in further education. *The Electronic Library Resources,* 24(5): 619-634.

Arms, WJ. 2000. *Digital libraries.* Cambridge: MIT Press.

Arya, S. &Talukdar, KD. 2010. Use and effectiveness of internet services and resources in the Delhi College of Engineering Library: a case study. *Library Hi Tech News.* 27(3):12-19.

Asunka, S. 2013. The visibility of e-textbooks in developing countries: Ghanaian university students' perception. *Open Learning*, 28(1):36-50.

Awwad, MS. & Al-Majali, SM. 2015. Electronic library services acceptance and use: an empirical validation of unified theory of acceptance and use of technology. *The Electronic Library*, 33(6): 1100-1120.

Ayoo, PO. & Lubega, JT. 2014. A framework for e-learning resources sharing. *International Journal of Information and Education Technology,* 4(1): 112-119.

Babbie, E. 2011.*The basics of social research*. 6th ed. Wadsworth: Cengage.

Babbie, E. & Mouton, J. 2009.*The practice of social research*. 10th ed. Cape Town: Oxford University Press.

Badu, EE. & Markey, ED. 2005. Internet awareness and use in the University of Ghana. *Information Development*, 21(4): 260-268.

Baro, EE. 2011. A survey of information literacy education in library schools in Africa. *Library Review*, 60(3): 202-217.

Baro, EE. & Keboh, T. 2012. Teaching and fostering information literacy programs: a survey of five university libraries in Africa. *The Journal of Academic Librarianship*, 38(5): 311-315.

Baro, EE., Seimode, FD. & Godfrey, V. 2013. Information literacy programs in university libraries: a case study. *Libri*, 63(4): 282-294

Becker, D., Hartle, H. & Mhlauli, G. 2017. Assessment of use and quality of library services, accessibility and facilities by students at Cape Peninsula University of Technology. *South Africa Journal of Libraries and Information Science*, 83(1):11-25.

Bertram, C. & Christiansen, I. 2014.*Understanding research: an introduction to reading research.* Pretoria: Van Schaik Publishers.

Bhat, MI. & Mudhol, MV. 2014. Knowledge and use of digital resources by medical college students of government medical college Jammu J & K, India. *International Research: Journal of Library & Information Science*, 4(2): 357-368.

Brown, L. & Mokgele, M. 2007. Information literacy skills training of staff and students in the UNISA Library: challenges and opportunities. Paper presented at the *World Library and Information Congress: 73rd IFLA General Conference and Council.* Durban, South Africa, 21- 3 August.

Bryman, A. 2012.*Social research methods.*4th ed. Oxford: Oxford University Press.

Bryman, A. & Bell, E. 2011.*Business research methods.* 3rd ed. Oxford: Oxford University Press.

Butler, M. 2018. The implications of having an industrial revolution in one generation.https://www.fin24.com/Finweek/Featured/the-implications-of-having-an-industrial-revolution-in-one-generation-20180409 (Accessed 24 August 2018).

Byun, DH. & Finnie, G. 2011. Evaluating usability, user satisfaction and intention to revisit for successful e-government websites. *Electronic Government, an International Journal*, 8(1): 1-19.

Carpenter, RL. & Vasu, ES. 1978. *Statistical methods for librarians*. Chicago: American Library Association.

Chambers. 2014. The *chambers English dictionary: the English dictionary of choice for writers, crossword setters and word lovers,* 13th ed. London: John Murray Press.

Chanetsa, B. & Grobler, J. 2009.Library and information skills training at the Polytechnic of Namibia. *NAWA: Journal of Language and Communication*, 3(2): 44-52.

Chang, SS., Lou, SJ., Cheng, SR. & Lin, CL. 2015. Exploration of usage behavioral model construction for university library electronic resources. *The Electronic Library*, 33(4): 292-307.

Chikezie, HE, Ossai-Onah, OV. & Emuchay, BN. 2012. Utilization of online resources among undergraduates in Nigeria library school: The case of Federal Polytechnic Nekede Owerri, Imo State. *The Information Technologist: an International Journal of Information Communication Technology,* 9(1): 57-70.

Corrall, SM. 2007. Benchmarking strategic engagement with information literacy in higher education: towards a working model. *Information Research*, 12(4): 1-20.

Creswell, JW. 2014. *Research design*: *qualitative, quantitative and mixed methods approaches.* 4th ed. Los Angeles: SAGE.

Connaway, LS., Dickey, TJ. & Radford, ML. 2011. If it is too inconvenient, I'm not going after it:': Convenience as a critical factor in information-seeking behaviors. *Library and Information Science Research*, 33(3): 179-90.

Dadzie, PS. &Van der Walt. T. 2015.Access and use of digital resources: a survey of their value for faculty in three Ghanaian universities. *Libri,* 65(1): 57–70.

Dauda, J. 2014. Users' assessment of e-resources at the university library of the University of the Philippines, Diliman. *Journal of Philippine Librarianship*, 34: 1-13.

Davis, FD. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly, 13* (3): 319-340.

Davis, FD., Bagozzi, RP. & Warshaw, PR. 1989. User acceptance of computer technology: a comparison of two theoretical models. *Management Science, 35* (8): 982-1003.

De Jager, K., Nassimbeni, M. & Underwood, P. 2007. *Information Literacy State-of-the Art Report, South Africa*, UCT Centre for Information Literacy, Cape Town.

Deng, H. 2010. Emerging patterns and trends in utilizing electronic resources in a higher education environment. *New Library World*, 111. (3/4):87-103.

DOAJ. 2017. Directory of open access journal.https://doaj.org (Accessed 14 May 2017).

Doyle, CS. 1994. Information literacy in an information society: a concept for the information age. http://eric.ed.gov/?id=ED372763(Accessed 15 June 2018).

Frandsen, TF., Tibyampansha, D., Ibrahim, GR. & Isenburg, MV. 2017. Library training to promote electronic resources usage: a case study in information literacy assessment. *Information and Learning Science,* 118(11/12): 618-628.

Gakibayo, I. Ikoja-Odongo, J. & Okello- Obura, C. 2013. Electronic information resources utilization by students in Mbarara University Library. *Library Philosophy and Practice*, 869.http://digitalcommons.unl.edu/libphilprac/869 (Accessed 21 May 2015).

Gupta, SK. & Sharma, S. 2015. Use of digital information resources and services by the students of IIT Mumbai Central Library. *International Journal of Information Dissemination and Technology*, 5(1): 1-11.

Harle, J. 2010. Growing knowledge: access to research in East and Southern African universities. http://www.acu.ac.uk/focus-areas/arcadia-growing-knowledge(Accessed 23 June 2015).

Hampton, N. 2015.A library of design: electronic collections inspire modern research spaces. *The Journal of the Louisiana Chapter of the ACRL*, 3(2): 68-79.

Hawthorne, D. 2008. History of electronic resources: electronic resource management in libraries: research and practice. www.internationalafricaninstitute.org/about/access_africa.html (Accessed 21 July 2015).

He, D., Wu, D., Yue, Z., Fu, A &Vo, KT. 2012. Undergraduate students' interaction with online information resources in their academic tasks: a comparative study. *Aslib Proceedings: New Information Perspectives*, 64(6): 615-640.

Hock, R. 2007.*The extreme searcher's internet handbook: a guide for the serious searcher*. 2nd ed. Medford, NJ: Cyberage Books.

Hwang, JYK., Jayhoon, LB., & Hwan. KJ. 2014. Usage patterns and perception toward e-books: experiences from academic libraries in South Korea. *The Electronic Library*, 32(4): 522 – 541.

Isibika, IS. &Kavishe, GF. 2018. Utilization of subscribed electronic resources by library users in Mzumbe university library, Tanzania. *Global Knowledge, Memory and Communication*, 67 (1/2):109-125.

Johnston, DJ., Berg., SA., Pillon.,K. & Williams, M. 2015. Ease of use and Usefulness as measures of student's experience in a multi-platform e-textbook pilot. *Library Hi Tech*, 33 (1): 65-82.

Johnson, S., Evensen, OG., Gelgand, J., Lammers, G., Sipe, L. & Zilper, N. 2012. *Key issues for e-resources collection development: a guide for libraries*. https://www.ifla.org/files/assets/acquisitioncollectiondevelopment/publications/IFLA_ELECTRONIC_RESOURCE_GUIDE_FINAL_May2nd%5B1%5D.pdf (Accessed: 6 March 2016).

Joo, S. & Choi, N. 2015.Factors affecting undergraduates' selection of online library resources in academic tasks. *Library Hi Tech*, 33(2): 272-291.

Julien, H., Tan, M. & Merillat, S. 2013. Instruction for information literacy in Canadian academic libraries: a longitudinal analysis of aims, methods and success. *The Canadian Journal of Information and Library Science*, 37(2): 82-102.

Karlsson, N. 2014.The crossroads of academic electronic availability: How well does Google Scholar measure up against a university-based metadata system in 2014? *Current Science*, 107(10):1661-1665.

Katabalwa, AS. 2016. Use of electronic resources by postgraduate students at the university of Dares Salaam. *Library Review,* 65(6/7): 445-460.

Konappa, K. 2014. Use of electronic information resources in university libraries of Tirupati (A.P): an analytical study. *International Journal of Library and Information Science*, 6(1): 5-13.

Kripanont, N. 2007. Examining a Technology Acceptance Model of Internet usage by academics within Thai business schools.D.Phil. Thesis*,* Chulalongkorn University*.* Available: http://vuir.vu.edu.au/1512/1/Kripanont.pdf (Accessed 14 July 2015).

Lau, J. 2006. *Guidelines on information literacy for lifelong learning.*https://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf (Accessed 23 August 2018).

Leedy, PD. & Ormrod, JE. 2014. *Practical research: planning and design*. 8th ed. Upper Saddle River, NJ: Pearson Education.

Lu, J., Yu, CS., Liu, C. & Yao, JE. 2003. Technology Acceptance Model for wireless internet. *Internet Research, 13*(3): 206-222.

Lwoga, E. & Komba, M. 2014. Understanding university students' behavioral continued intentions to use e-learning in Tanzania. *Proceedings of the 7th Ubuntu Net Alliance Annual Conference,* Lusaka, Zambia, 13-14 November 2014.

Maduku, DK. 2015. An empirical investigation of students' behavioral intention to use e-books. *Management Dynamics*, 24 (3): 2-20.

Mammo, Y. & Ngulube, P. 2014. Factors that influence accessibility of electronic information resources at some universities in Ethiopia. *Innovation*. 49: 74-89.

Martin, J. 2008. The information-seeking behavior of undergraduate education majors: Does library instruction play a role? *Evidence Based Library and Information Practice*, 3 (4): 4-17.

Matthews, B. & Ross, L. 2010.*Research methods: a practical record for the social sciences*. Harlow England: Pearson.

Min. S. & Yin. Y. 2010. E-resources, services and user surveys in Tsinghua University Library, *Program.* 44(4): 314-327.

Miller, J. & Khera, O. 2010. Digital library adoption and the technology acceptance model: a cross-country analysis. *The Electronic Journal of Information Systems in Developing Countries*, 40 (6): 1-19.

Mogase, RC. & Kalema, BM. 2015. E-resources usage in South African higher institutions of learning. *Proceedings of the 10th IEEE International Conference on Computer Science & Education,* Cambridge University, Fitzwilliam College, United Kingdom, 22-24 July 2015.

Moyo, M. & Mavodza, J. 2016. A comparative study of information literacy provision at university libraries in South Africa and the United Arab Emirates: a literature review. *Library Review*, 65(1/2): 93-107.

Mtega, WP., Nyinondi, P. & Msungu, A. 2013. 'Access to and usage of e-resources in selected higher learning institutions in Tanzania'. In Thanuskodi, S. (ed.), *Challenges of academic library management in developing countries*. 131-140. Hershey, PA: IGI Global.doi:10.4018/978-1-4666-4070-2.ch010.

Mugwisi, T. 2015. Role of librarians in teaching information literacy in Zimbabwean and South African universities. a comparative study. *Mousaion*, 33(1): 23-42.

Mutingi, M. & Matope, S. 2013. Dynamics of information technology adoption in a complex environment. *Proceedings of the IEEE International Conference on Industrial Technology*, *Cape Town, South Africa, 25-28 February 2013.*

Mutula, SM. 2012. Library automation in sub Saharan Africa: case study of the University of Botswana. *Program*, 46 (3): 292-307.

Ndinoshiho, JM. 2010. The use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus: a descriptive study. *Information Development*, 26(1): 57-65.

Naqvi, TH. 2014. Awareness, use and impact of electronic information services on the undergraduate and postgraduate students at JNMC Library, UMU, Aligarh, India. *World Digital Libraries*, 7(2):107-122.

Natarajan, M. 2016. Use and impact of electronic resources by information science students at Jimma University, Jimma, Ethiopia, *Collection Building,* 36(4):163-171.

Neuman, WL. 2014. *Social research methods: qualitative and quantitative approaches*. 7th ed. Harlow, England: Pearson Education Limited.

Nicholas. D., Rowlands, I., Clark., D. *et al*. 2008. UK scholarly e-book usage: a landmark survey. *Aslib Proceedings: New Information* 60(4): 311–334.

Omar, AM., Haji, HA. & Mwitumbe, KH. 2014. Information literacy in Zanzibar. *International Federation of Library Associations and Institutions*, 40(4): 280-288.

Park, J. Yang, S. & Lehto, X .2007. Adoption of mobile technologies for Chinese consumers. *Journal of Electronic Commerce Research*, 8(3):196-206.

Powell, RR. &Connaway, LP. 2004. *Basic research methods for librarians*. 4th ed. Westport: Libraries Unlimited.

Pietersen, J. & Raju, J. 2015.*The shape and form of the 21st century academic library in South Africa: the case of the University of Cape Town libraries*. MA Thesis. Cape Town: University of Cape Town. Available at:https://open.uct.ac.za/bitstream/handle/11427/13733/thesis_hum_2015_pietersen_j.pdf;sequence=1 (Accessed 10 June 2016).

Pinigas, M., Cleopas, R., & Phiri, MA. 2017. Acceptance of e-resources by students in Zimbabwe State Universities' Libraries: a consumer behavior perspective. *International information & Library Review*, 0 (0): 1-13.

Rioux, K. 2014. Teaching social justice in an information literacy course: an action research case study. *Qualitative and Quantitative Methods in Libraries (QQML), Special issue:* 23-30.

Salubi, OG., Ondari-Okemwa, E. & Nekhwevha, F. 2018. Utilization of library information resources among Generation Z students: fact and fiction. *Publications*, 16(6): 1-12.

Sargent, K., Hyland., P. & Sawang. S. 2012. Factors influencing the adoption of information technology in a construction business*. Australasian Journal of Construction Economics and Building,* 12(2): 72-86.

Satgoor, U. 2015. Celebrating libraries in 20 years of democracy: an overview of library and information services in South Africa. *International Federation of Library Associations and Institutions*, 41(2): 97-111.

Saunders, M., Lewis, P. & Thornhill, A. 1997.*Research methods for business students*. 5th ed. Harlow, England: Prentice-Hall.

Saurombe, NM. 2015. Information literacy: a cornerstone for open distance learning at the University of South Africa. *Journal of Librarianship and Information Science*, 47(2):156-165.

Schwab, K. 2016. *Fourth industrial revolution: what it means, and how to respond.*https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/ (Accessed 19 September 2018).

Shuling, W. 2007.Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28(1/2):72-88.

Sieberhagen, A. & Nampak, RD. 2012.The evaluation of a digital information literacy program. *South African Journal of Libraries and Information Science*, 80(2): 20-41.

Smart, KL. & Cappel, JJ. 2006. Students' perceptions of online learning: a comparative study*. Journal of Information Technology Education,* 5: 201-219*.*

Sohail, Md. & Alvi, A. 2014.Use of web resources by medical science students of Aligarh Muslim University. *DESIDOC Journal of Library & Information Technology,* 34(2):125-130*.*

Taiwo, AA. & Downe, AG. 2013. The theory of user acceptance and use of technology (UTAUT): a meta-analytic review of empirical findings. *Journal of Theoretical & Applied Information Technology*, 49(1): 48-58.

Tang, Y. & Barnett, EP. 2017. Nursing students' learning experience with e-books. *The Journal of Academic Librarianship*, 43: 67-71.

Tanacković, FS., Ivanović., DM. & Cupar, D. 2017. Scholarly electronic databases and library & information sciences students in Croatia: motivations, uses and barriers. In *Proceedings of ISIC, the Information Behaviour Conference*, Zadar, Croatia, 20-23 September, 2016.

Tella, A. 2011.Predicting users' acceptance of e-library from the perspective of technology acceptance model. *International Journal of Digital Library Systems*, 2(4): 34-44.

Tlakula, TP. & Fombad, M. 2017.The use of electronic resources by undergraduate students at the University of Venda, South Africa. *The Electronic Library*, 35(5): 861-881.

Toteng, B., Hoskins, R. & Bell, F. 2013.Use of electronic databases by Law students of the University of Botswana Library. *African Journal of Library, Archives and Information Science*, 23(1): 59-74.

Ukachi, NB. 2015. Information literacy of students as a correlate of their use of electronic resources in university libraries in Nigeria. *The Electronic Library,* 33(3): 486-501.

Ullah, M. & Ameen, K. 2014. Current status of information literacy instruction practices in medical libraries of Pakistan. *Journal of the Medical Library Associations*, 102(4):281-7.

University of South Africa- UNISA. 2007. *Policy on research ethics*. Available at: http://www.UNISA.ac.za/cmsys/staff/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf (Accessed 13 April 2013).

UNAM Web. 2014.http://www.unam.edu.na/library/e-resources (Accessed 20 June 2014).

Urquhart, C. *et al.* 2005. Student use of electronic information services in further education. *International Journal of Information Management*, 25(4): 347-362.

Venkatesh, V. & Davis, FD. 2000. A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science, 46*(2): 186-204.

Venkatesh, V., Morris, MG., Davis, GB. & Davis, FD. 2003. User acceptance of information technology: toward a unified view. *Management Information Systems Quarterly, 27*(3): 425-478.

Wang, S. & Bai, X. 2016.University students' awareness. usage and attitude towards e-books: experience from China. *Journal of Academic Librarianship,* 42(3): 247-258.

Welman, C., Kruger, F. & Mitchell, B. 2012.*Research methodology*. 3rd ed. Cape Town: Oxford University Press.

Wen, S. 2005. Implementing knowledge management in academic libraries: a pragmatic approach. Paper presented at the *3rd China-US Library Conference*, *Shanghai, China, 22-25 March 2005.*

Wiese, W. & du Plessis, G. 2014. The battle of the e-textbook: libraries' role in facilitating student acceptance and use of e-textbooks. *South African Journal of Libraries and Information Science*, 80(2):17-26.

Williams, MD., Rana, NP. &Dwivedi, YK. 2015. The unified theory of acceptance and use of technology (UTAUT): a literature review. *Journal of Enterprise Information Management,* 28(3): 443-488.

Woodwall, WG. 2012. Writing the background and significance section. http://casaa.unm.edu/download/Background%20and%20Significance.pdf (Accessed 28 July 2015).

Wu, M. &Yeh, S. 2012. Effect of undergraduate student computer competence on usage of library electronic collections. *Journal of Library and Information Studies*, 10(1):1-17.

Zuiderwijk, A., Janssen, M. &Dwivedi, YK. 2015. Acceptance and use predictors of open data technologies: drawing upon the unified theory of acceptance and use of technology. *Government Information Quarterly*, 32(4):429–440.

APPENDICES

Appendix 1: Table of objectives

Access and use of electronic resources by students at selected campuses of the University of Namibia

Objectives	Research question(s)	Theoretical Framework: theories that guide the study	Research method(s)	Population	Research instrument(s)
Find out the types of electronic resources available at UNAM libraries.	Which electronic resources are available at UNAM libraries?	UTAUT	Quantitative	Library staff	Library staff questionnaire **Qn. 5** Library website: http://www.unam.edu.na/library/e-resources
Establish the awareness of undergraduate students regarding electronic resources.	What is the level of awareness of undergraduate students of UNAM about electronic resources?	UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire **Qn.5, 6, 7.** Library staff questionnaire **Qn.6, 7.**
Find out which electronic resources are used by undergraduate students.	Which electronic resources do undergraduate students prefer to use?	TAM and UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses	Student's questionnaire **Qn.7, 8, 9, 10.** Library staff questionnaire **Qn. 8, 9, 16, 18.**
	For what purposes do the undergraduate students use electronic resources?	TAM and UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses	Student's questionnaire **Qn.11**

Determine the availability of training programs in place to assist undergraduate students with access to, and use of, electronic resources.	What training programs are in place at UNAM library? If there are training programs in place, how effective are these training programs?	UTAUT	Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire **Qn. 7, 12, 13, 14, 15.** Library staff questionnaire **Qn. 10, 11, 12, 13, 14**
To determine factors related to their access to, and use of, electronic resources.	How do undergraduate students get to electronic resources? What issues do undergraduate students experience when utilizing electronic resources?	UTAUT TAM and UTAUT	Quantitative Quantitative	Undergraduate students enrolled at UNAM campuses and Library staff Undergraduate students enrolled at UNAM campuses and Library staff	Student's questionnaire**Qn.7, 16, 17, 18, 19, 20, 21.** Library staff questionnaire **Qn. 8, 9, 17.** Student's questionnaire Qn.**Qn.7, 20.** Library staff questionnaire Qn. **Qn. 15.**

Appendix 2: Survey instrument for undergraduate students

Questionnaire for undergraduate students: University of Namibia

August 2016

Dear Student

I am a master's student at the University of South Africa (UNISA). I am doing research on access and use of electronic resources. The title of my study is "Access and use of electronic resources by students at selected campuses of the University of Namibia". I therefore will appreciate it very much if you could complete this questionnaire. Completing this questionnaire should take 20-30 minutes of your time.

Your participation will make a valued contribution towards this study. I should be grateful if you would complete and return it to the library by the 11th August 2016. Should you have any queries please do not hesitate to contact me at Rundu Campus Library, University of Namibia, P.O. Box 88, Rundu. Telephone: +264 66 2686041. Email: jshigwedha@unam.na

I would like to assure you that the information collected here is strictly for research purposes; and therefore it will be treated as confidential. This is in accordance with the UNISA Policy on Research Ethics. You are welcome to view the policy at: http://www.unisa.ac.za/cmsys/staff/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf

Thank you in advance for participating in the survey.

Sincerely,

Johannes Shigwedha

Instructions: Please tick √ where applicable

Electronic resources included both electronic-only resources and materials that are available either electronically or online. This would include e-books, e-journals, CD-ROM, OPAC, internet and licensed databases which serve as rich sources of information.

Section A: General background information

1. Gender:				Male	Female
				☐	☐
2. Age Group:	17-20	20-25	26-30	30-35	36 and above
	☐	☐	☐	☐	☐
3. Name of your Campus:	Khomasdal	Neudamm		José Eduardo dos Santos	
	☐	☐		☐	
4. Year of study currently registered for:		1st	2nd	3rd	4th
		☐	☐	☐	☐

Section B: Awareness of electronic resources

5. Are you aware of the existence of electronic resources in UNAM Libraries?	Yes	No
	☐	☐

6. How did you learn about electronic resources? *(Please select more than one option if applicable by ticking in the box)*	Fellow students	Library staff	Notice boards
	☐	☐	☐
	Lecturer	UNAM website	Library orientation
	☐	☐	☐

SECTION C: Acceptance of, and intention to access and use, electronic resources

7. To what extent do you agree with the statements below?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I find e-resources useful in my studies.	☐	☐	☐	☐	☐
Use of e-resources could empower me to excel in my studies.	☐	☐	☐	☐	☐
Use of e-resources will enable me to access reliable and trustworthy information for my academic work.	☐	☐	☐	☐	☐
Using e-resources enables me to obtain a wide range of information for my studies.	☐	☐	☐	☐	☐
I believe that using e-resources increases my chances of getting good grades.	☐	☐	☐	☐	☐
I support that access and use of e-resources can enable me to accomplish my academic work more quickly.	☐	☐	☐	☐	☐
I find e-resources easy to use.	☐	☐	☐	☐	☐
My interaction with e-resources is clear and understandable.	☐	☐	☐	☐	☐
It is easy for me to become skillful at accessing and utilizing e-resources.	☐	☐	☐	☐	☐
Learning to access and make use of e-resources is easy for me.	☐	☐	☐	☐	☐
Access and use of e-resources should be flexible and enjoyable without encountering more challenges.	☐	☐	☐	☐	☐
People, who influence my behavior, will think that I should access and use e-resources for my studies.	☐	☐	☐	☐	☐
Associates important to me think that access to and use of, e-resources will improve my academic performance.	☐	☐	☐	☐	☐
My lecturers, other staff members (mostly librarians) and other peers are helpful in assisting me to effectively access and utilize e-resources during my courses.	☐	☐	☐	☐	☐
In general, the library has supported the use of e-resources through various initiatives like marketing and training.	☐	☐	☐	☐	☐
Resources available at UNAM libraries for instance computers are supportive for accessing e-resources.	☐	☐	☐	☐	☐
I have the necessary skills for accessing and utilizing e-resources?	☐	☐	☐	☐	☐
Library staff are always available for assistance when I experience difficulties in accessing e-resources.	☐	☐	☐	☐	☐
The library orientation I received is adequate enough to enable me access and use e-resources.	☐	☐	☐	☐	☐
Internet connectivity is reliable and fast enough to support access to, and use of, e-resources.	☐	☐	☐	☐	☐
I intend to use e-resources during the course of my undergraduate study at UNAM.	☐	☐	☐	☐	☐
I intent to access and utilize e-resources in my area of studies.	☐	☐	☐	☐	☐
I predict I would use e-resources in the second semester	☐	☐	☐	☐	☐
I plan to use e-resources in the second semester.	☐	☐	☐	☐	☐

Section D: Electronic resources preferences

8. Which of the following are your preferred web-based information resources? *(Please select more than one option if applicable by ticking in the box.)*

- ☐ e-journals
- ☐ e- books
- ☐ OPAC
- ☐ Scientific databases
- ☐ Internet (Google search)
- ☐ Library e-resources
- ☐ e-past examination papers

9. Which of the following licensed databases have you accessed and used? *(Please select more than one option if applicable by ticking in the box).*

- ☐ EBSCOhost
- ☐ Emerald
- ☐ Science Direct
- ☐ AGORA
- ☐ HINARI
- ☐ IEEE
- ☐ Taylor and Francis
- ☐ Sabinet African Journals
- ☐ SAGE
- ☐ Don't use

10. How often do you use the following web-based information resources? *(Please select more than one option if applicable by ticking in the box).*

Web-based information resources	Quite often	Often	Sometimes	Rarely	Never
E-journals	☐	☐	☐	☐	☐
E-books	☐	☐	☐	☐	☐
OPAC	☐	☐	☐	☐	☐
Licensed databases	☐	☐	☐	☐	☐
Internet (Google search)	☐	☐	☐	☐	☐
E-library resources	☐	☐	☐	☐	☐
E-past examination papers	☐	☐	☐	☐	☐

Section E: Purpose for using electronic resources

11. For what purpose (s) do you use electronic resources? *(Please select more than one option if applicable by ticking in the box).*

- ☐ Writing projects
- ☐ Assignments
- ☐ Current and general information
- ☐ Prepare for examinations
- ☐ All of the above

Section F: Training programs at UNAM Libraries

12. Have you received training in the library on how to access and use e-resources? *(Please tick only one answer in the box).*	Yes	No
	☐	☐
13. Which training have you received in the library? *(Please select more than one option if applicable by ticking in the box).*	Library orientation	Information literacy training
	☐	☐
14. Are the training programs at UNAM libraries effective in imparting information literacy skills? *(Please tick only one answer in the box).*	Yes	No
	☐	☐

15. From the list provided below, please tick the challenges affecting the effectiveness of the training offered? *(Please select more than one option if applicable by ticking in the box).*

- ☐ Inappropriate timing of the training sessions
- ☐ Limited online library guides
- ☐ A perceived lack of relevance of the training content
- ☐ Limited space in the training venue
- ☐ Insufficient computers to support the training

Section G: Access to electronic resources

16. Where do you access electronic resources? *(Please select more than one option if applicable by ticking in the box).*

- ☐ On campus access
- ☐ Off-campus access
- ☐ Library
- ☐ Lecture halls
- ☐ Classrooms
- ☐ Internet café

17. Which devices do you use to access electronic resources? *(Please*	Desktop	Laptop	Hand- held devices

select more than one option if applicable by ticking in the box).			computer		(Smart phone, Tablet, iPad)
			☐	☐	☐
18. Are you able to access electronic resources? *If your answer is no, proceed to question no:21*			Yes		No
			☐		☐
19. How often do you access electronic resources? *(Please tick only one answer in the box).*	Never	Rarely	Sometimes	Frequently	Very Frequently
	☐	☐	☐	☐	☐

20. From the list below, please tick the issues you experience when utilizing electronic resources. *(Please select more than one option if applicable by ticking in the box).*

- ☐ Slow internet connections
- ☐ Information overload
- ☐ Limited search skills
- ☐ Limited time for computer use
- ☐ Limited access to computers
- ☐ Insufficient points of use in the library
- ☐ Limited access to internet

21. From the list below, please tick the possible solutions to improve access and use of electronic resources? *(Please select more than one option if applicable by ticking in the box).*

- ☐ Continuous users training
- ☐ Lecturers motivation to enhance usage of electronic resources
- ☐ Provision of access tools such as computers
- ☐ Fast internet connections
- ☐ Marketing via the library home page and social media

Thank you for your time.

Appendix 3: Questionnaire for library staff

Dear Library staff,

I am a master's student at the University of South Africa (UNISA). I am doing research on access and use of electronic resources. The title of my study is "Access and use of electronic resources by students at selected campuses of the University of Namibia". I, therefore, will appreciate it very much if you could complete this questionnaire. Completing this questionnaire should take 15-20 minutes of your time.

Your participation will make a valued contribution towards this study. I should be grateful if you would complete and e-mail it back to me by the 11th August 2016. Should you have any queries please do not hesitate to contact me at Rundu Campus Library, University of Namibia, P.O. Box 88, Rundu. Telephone: +264 66 2686041. Email: jshigwedha@unam.na

I would like to assure you that the information collected here is strictly for research purposes; and therefore it will be treated as confidential. This is in accordance with the UNISA Policy on Research Ethics You are welcome to view the policy at: http://www.unisa.ac.za/cmsys/staff/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf

Thank you in advance for participating in the survey.

Sincerely,

Johannes Shigwedha

Instructions: Please tick √ where applicable

Electronic resources included both electronic-only resources and materials that are available either electronically or online. This would include e-books, e-journals CD-ROM, OPAC, internet and licensed databases which serve as rich sources of information.

Section A: General background information

1. Gender		Male ☐	Female ☐	
2. Age group	25-35 years ☐	36-45 years ☐	45 and above ☐	
3. Highest Educational Qualification	Diploma ☐	Degree ☐	Master Degree ☐	PhD ☐
4. Work experience		1-5 Yrs. ☐	6-10Yrs. ☐	10 Yrs. and above ☐

Section B: Types of electronic resources available at UNAM Libraries

5. Which of the following electronic resources are available at UNAM Libraries? *(Please select more than one option if applicable by ticking in the box).*

E-journals ☐	E-books ☐	OPAC ☐
Licensed databases ☐	Internet (Google search) ☐	Library ☐
Library e-resources ☐	E-past examination papers ☐	None of the above ☐

Section C: Awareness of electronic resources

6. Are the students aware of electronic resources offered at UNAM libraries? *(Please tick only one answer in the box).*	Yes ☐	No ☐

7. How do you create awareness of e-resources among the students*? (Please select more than one option if applicable by ticking in the box).*

- ☐ Training
- ☐ Library website
- ☐ Posters
- ☐ Leaflets
- ☐ Library orientation
- ☐ Marketing and promotion activities
- ☐ Use of social media (e.g., Facebook)

8. How frequently did students need help in or outside the library towards accessing and use of electronic resources? *(Please select more than one option if applicable by ticking in the box).*	Quite often	Often	Rarely	Very rarely	Not at all
	☐	☐	☐	☐	☐
9. How often do you assist students to use electronic resources?	Quite often	Often	Rarely	Very rarely	Not at all
	☐	☐	☐	☐	☐

Section D: Training programs at UNAM Libraries

10. Are there programs at UNAM Libraries aimed at training users on how to access and use electronic resources? *(Please tick only one answer in the box).*	Yes	No
	☐	☐

11. If yes, which training programs are in place?	Library orientation	Information literacy training program
	☐	☐

12. What do you say about the training programs offered? *(Please tick only one answer in the box).*	Effective	Ineffective
	☐	☐

13. If not effective, what interventions are in place to ensure that users are trained? *(Please select more than one option if applicable by ticking in the box).*

- ☐ Training and retraining of staff
- ☐ Increase budgetary allocation towards training
- ☐ Provision of sufficient computers and training venues

14. What are the impacts of training towards access and use of electronic resources? *(Please select more than one option if applicable by ticking in the box).*

- ☐ Improved electronic resources usage
- ☐ Quality referencing
- ☐ Improved quality of student assignments and projects
- ☐ Reduced user' inquiries

Section E: Issues affecting access to, and use of electronic resources

15. What are the major issues being experienced by the students in accessing and utilizing electronic resources? (*Please select more than one option if applicable by ticking in the box).*

- ☐ Insufficient computers
- ☐ Limited awareness
- ☐ Slow internet
- ☐ Power failure
- ☐ Limited database subscriptions

16. Do you think that electronic resources are being used optimally? (*Please tick only one answer in the box).*	Used optimally	Are not optimally used	Note sure
	☐	☐	☐
17. Are there sufficient ICT facilities to enhance access and use of electronic resources? (*Please tick only one answer in the box).*	Sufficient	Fairly Sufficient	Insufficient
	☐	☐	☐

18. Which specific areas relating to electronic resources should the library need to work on to enhance access to, and use of, e-resources? (*Please select more than one option if applicable by ticking in the box).*

- ☐ Increase the provision of electronic resources in different academic disciplines
- ☐ Provide sufficient ICT facilities
- ☐ Provide vigorous and effective training
- ☐ Marketing and promotion of e-resources

Thank you for completing this survey

Appendix 4: Request for permission to conduct research at UNAM

09 March 2016

To: Research Committee

Research and Publication Office

University of Namibia

Private Bag 13301

Windhoek

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN UNAM

My name is Johannes Shigwedha and I am an Information Science student at the University of South Africa. I would like to conduct a study for my Master's dissertation with the titled "Access and use of electronic resources by students at the selected campuses of the University of Namibia". This project will be conducted under the supervision of Mrs. Nampombe Saurombe in Department of Information Science at the University of South Africa.

I am hereby seeking your permission to approach students and library staff at the University of Namibia to collect data through questionnaires. I have read and understood the requirements of conducting a research at UNAM and as a UNAM staff as stipulated in the Research policy of 2013 and have paid special attention to section 7.4, 7.5, and 7.7 and the research ethics policy section 3.1, 3.2, 4.1. 4.3, 5.3 and 6.4.

Based on that, this study will adhere to the UNAM research, policy and the research ethics policy. Participants will not be forced to participate in the study. The information that will be provided will only be used for the purpose of this study. Upon completion of the study, I undertake to provide the University of Namibia Library with a bound copy of the full research report and a link to the full text will be made available on the institutional repository.

If you require any further information, please do not hesitate to contact me on 0811284829; or e-mail: 40769194@mylife.unisa.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely

……

Johannes Shigwedha (student number 40769194)

University of South Africa

Appendix 5: Ethical Clearance

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: RUC/198/2016 **Date: 26 May 2016**

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: ACCESS AND USE OF ELECTRONIC RESOURCES BY STUDENTS OF THE UNIVERSITY OF NAMIBIA

Nature/Level of Project: Masters

Researcher: Johannes J.O.N. Shigwedha

Student Number: 40769194

Faculty: Rundu Campus

Supervisor: Mrs. Mnkeni- Saurombe

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.

Prof. P. Odonkor: UREC Chairperson

Ms. P. Claassen: UREC Secretary