Electronic resources use by distance learners at University of Namibia

By

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DECLARATION

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DEDICATION

This thesis is dedicated to my mother, Lineekela Hamutumwa. Thank you mum for being my pillar of strength, without your prayers and continuous push, this thesis would not have been a reality. To my beloved father, Johannes Hamutumwa of blessed memory, I know you would have been very proud of me. Dad, may your soul continue to rest in everlasting peace.

ABSTRACT

Universities are embracing technology and moving towards electronic resources information to facilitate research and learning. This has led to the belief that a significant number of resources used by library users in academic libraries lie in the virtual environment. Consequently, library users are required to acquire sufficient information, and information and communications technology (ICT) skills and competencies. Driven by the need to clarify the use and non-use of electronic resources by library users, the main objective of this this study was to investigate the use of electronic resources by distance learners at University of Namibia. The study therefore addressed the following research questions: What are the attitudes and perceptions of distance learners towards electronic resources? What electronic resources are available to distance learners at UNAM? What is the level of awareness of the learners about electronic resources available in the UNAM Library? What ICT competencies do distance learners have to effectively use electronic resources? What is the level of use of electronic resources by distance learners? What factors hinder the use of electronic resources by distance learners? And, what recommendations are needed to improve the use of electronic resources by distance learners?

The study was underpinned by the post-positivist paradigm and used both qualitative and quantitative approaches. To determine attitudes, beliefs and behaviour of distance learners towards electronic resources, the study made use of the survey research design methodology. The population of the study comprised of distance learners, CES lecturers, centre coordinators, and UNAM Library staff. Data presentation laid out in this study was obtained through the use of survey questionnaires, interviews and observations. In assembling the data for analyses, the study utilised MS Excel and the Statistical Package for Social Sciences (SPSS) to generate

frequency counts, percentage and descriptive statistics for the quantitative data gathered, and employed the use of ATLAS.ti™ software and content analysis to analyse qualitative data. For reliability and validity, data collection instruments in this study were peer reviewed, pre-tested and triangulated. For the purposes of ethical considerations in research of this kind, the University of KwaZulu-Natal research ethics protocol were adhered to, and permission also sought from the University of Namibia to carry out the study in its distance learning centres and University Library.

The findings arrived at in this study revealed that distance learners were positive about electronic resources due to prior experience, high self-efficacy and the various benefits derived by using them. However, they did not make use of e-resources subscribed to due to high cost, poor internet connectivity, electricity outages, lack of sufficient computers, and low levels of computer skills. As such, they preferred print resources. The results also indicated a very low level of awareness among distance learners about the electronic resources available in the library. It further showed that most learners lacked computer skills, searching skills, and sufficient training in the use of ICT and electronic resources. Moreover, many distance learners were self-taught or assisted by their peers in the use of electronic resources. Distance learners who used electronic resources acknowledged that it facilitated and assisted them to complete the tasks of writing assignments, research papers and research projects. The learners also characterised factors that inhibited them from effectively using electronic resources such as bandwidth bottlenecks, travelling long distances to the library, lack of skills, cost of accessing the internet and lack of awareness about the availability of electronic resources.

Drawing from the research finding and results, the study construed that perceived usefulness, self-efficacy; subjective norms and facilitating conditions affect behavioural intentions of distance learners to use electronic resources. Moreover, these constructs are the most influential in determining the use of electronic resources. Given this, the study also arrived at the conclusion that the inadequacy of ICT infrastructures and facilities, the lack of awareness, and the lack of ICT skills and competencies, are all contributors to the learners‟ negative attitude towards the use of electronic resources, therefore, the reason why they preferred print resources.

Against the backdrop of the study‟s conclusion, the researcher proffered key recommendations to improve policy, practice, skills and infrastructural development. These recommendations include the need for learning centres to be equipped with adequate ICT facilities and internet connectivity to meet the learners‟ information needs, especially with regard to accessing e-resources. The study further recommended that learners be equipped with relevant skills and competencies to make use of electronic resources, the implementation of an electronic resources collection development policy, and the improvement of the ICT infrastructure.

Based on the research findings of this study, further suggestions were advanced for research to be conducted in the areas of: technology adoption by full time students at UNAM, the impact of access to e-resources and academic achievements, and e-resources use patterns among different genders, information seeking behavior of distance learners with regard to electronic resources, among others. Likewise, the study proposed the need for additional researches that would mostly use qualitative approaches to gain comprehensive and in-depth understanding of the use of electronic resources by distance students.

From the general findings arrived at in the study, valuable contributions that could enable the UNAM Library to re-focus its services to better suit the needs of the distance learners have been identified. In adopting the contributions and recommendations made in this study, UNAM Library will gain an in depth understanding on those important factors that are needed to promote the use of electronic resources by distance learners in a developing country context such as Namibia. In this light, UNAM library can therefore make wise investment decisions in e-resources to derive maximum value for its users.

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LIST OF ACRONYMS AND ABBREVIATIONS

A	Attitude
ACA2K	African Copyright and Access to Knowledge
ACRL	Association of College and Research Libraries
AIPR	Agreements of Intellectual Property Rights
BI	Behavioural Intention
C-TAM-TPB	Combined TAM and TPB
CAS	Current Awareness Services
CD-ROM	Compact Disc Read-Only Memory
CES	Centre for External Studies
CUNY	City University of New York
DTPB	Decomposed Theory of Planned Behaviour
E	Ease of Use
ECMS	Electronic Copyright Management System
eICU	Electronic Intensive Care Unit
FC	Facilitating Conditions
HR	Human Resources
ICT	Information and Communications Technology
ISIS	Innovation Scientific Information Supply
IP	Internet Protocol
ISI	Information Society Index
IT	Information Technology
km	Kilometer
NCCS	National College of Computer Science
OPAC	Online Public Access Catalogue
PEOU	Perceived Ease of Use
PHEA	Partnership for Higher Education in Africa
PU	Perceived Usefulness
SDI	Selective Dissemination of Information
SN	Subjective Norm

SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
U	Usefulness
UAEU	United Arab Emirates University
UK	United Kingdom
UNAM	University of Namibia
UNE	University of New England
UOP	University of Phoenix
US	United States
UTAUT	Unified Theory of Acceptance and Use of Technology
WCT	WIPO Copyright Treaty
WGU	Western Governors University
WIPO	World Intellectual Property Organisation

CHAPTER ONE

INTRODUCTION

1.1 Context of the study

Access to adequate library services and resources is essential for the attainment of superior academic skills in post-secondary education, regardless of where students, faculties, and programmes are located (Gibbs, 2000). Consequently, institutions of higher learning world over have embraced information and communication technologies (ICTs) in order to shape the processes of teaching and learning (Mbatha and Naidoo, 2010). Academic libraries in particular are transforming to embrace ICTs and moving towards digital resources for easy access to information by distance learners (Mulla, 2011) for study purposes. As a result of this change, electronic resources have brought a paradigm shift in the use of libraries (Liu, 2006) and opened up new ways for the creation, storage, access, distribution and presentation of information (Majid and Abazova, 1999). Libraries are therefore being encouraged to provide an enabling environment for students – whether on campus or off-campus – to have unimpeded access to information (Boadi and Letsolo, 2004) especially through electronic means. Electronic resources are important tools in disseminating information to distance learners (Aramide and Bolarinwa, 2010) as they are helpful in providing access to a full range of learning and teaching materials Macharazo (2006 cited in Aramide and Bolarinwa, 2010) by distance learners who have limited access to the library from outside the campus (Ray and Day, 1998; Tenopir, 2003; Mulla, 2011). Moreover, distance students are able to access a variety of electronic information resources at no cost to themselves (Ray and Day, 1998). Besides, for distance learners to obtain maximum value from electronic resources they need access to the ICT as an enabler (Burgstahler, 2002). For this to happen, libraries must develop electronic/digital libraries and requisite infrastructure to facilitate access to online and electronic resources to distance learners. Most universities especially in Europe, North America and other regions of the developed world (Aoki and Pogroszewski, 1998) such as Western Governors University (WGU) and University of Phoenix (UOP) both in the United States provide distance learners electronic access to web page resources, full-text and millions of citations in hundreds of databases, reference requests and

document delivery (Aoki and Pogroszewski, 1998). In order for distance learners to fully optimize use of electronic resources and the associated services they must have access to hardware, e.g. desktop computer, laptop and the Internet (Burgstahler, 2002). Distance learners must also have knowledge, digital and information retrieval skills to use these resources. It is therefore prudent that libraries enhance their off-campus services such as web access, full-text retrieval, speedy document delivery from the publisher to the computer, online reference, and electronic communication (Haricombe, 1998).

Access to electronic resources by distance requires several issues to be addressed. Among these issues is the licensing regimes and internet authentication. According to Buchanan (2000), electronic indexes and databases available to onsite students are restricted by licensing and are therefore off limits to distance students, putting them at a serious disadvantage in their studies as well as research. Nwizu (2008) explicitly stated that the use of audiovisual and electronic resources has broken the barriers of time, distance, and locale. Moreover, though the proliferation of electronic resources is believed to have overwhelmed many learners in the world during the last few decades (Gaba and Sethy, 2010), the lack of technical and research skills, impeding inadequate computer technologies and poor internet facilities are some of the hindrances (Boadi and Letsolo, 2004; Okello-Obura and Ikoja-Odongo, 2010). Additionally, the Partnership for Higher Education in Africa (PHEA) (2007 cited in Ofulue, 2011) opined that the use of ICT to facilitate learning is restricted by various problems including weak ICT infrastructure – particularly in rural areas, unavailability of electricity, computer illiteracy, inaccessibility to computers outside university, and high capital costs of implementing e-learning programmes.

1.2 Background to distance learning at University of Namibia

In Namibia, though access to knowledge and information by all is a top government priority (Government of the Republic of Namibia, 2007), the challenges of delivering electronic resources to distance learners are numerous. Niskala (2008) pointed out that some of the challenges faced by tertiary level distance learners in Namibia include lack of connectivity,

inadequacy of electronic resources, and unequal distribution of access facilities to tapping the learning resources (Government of the Republic of Namibia, 2007).

The University of Namibia (UNAM) is located in the capital city of Namibia, Windhoek. UNAM has 10 learning centres for External Studies for distance learners across the country to cater for the increasing number of its distance learners. During the 2011 academic year alone 3,612 distance learners were enrolled at the University of Namibia. The furthest distance learning Centre for External Studies (CES) at the University is in Katima Mulilo, which is 1,226 kilometres (km) away from the main campus in Windhoek. The nearest centre is in Gobabis, 205 km away from Windhoek. UNAM Library Users‟ statistics indicate that out of the 3,612 distance learners registered in the year 2011, more than 2,965 were neither borrowing library materials nor did they have access to the University library electronic resources off-campus.

A study by Katjihingua (2001) on the University of Namibia distance learners and off-campus library services indicated that the majority of distance learners used print materials as opposed to electronic resources. The University of Namibia Library subscribes to various electronic information resources to meet the needs of all registered students. The cost of purchasing electronic resources in the form of serials and databases by UNAM in the 2011 financial year was N$ 1.4 million. The University library expects a return on its investment in electronic resources through their effective access and use. However, a study conducted by Niskala (2008) revealed that the main constraints faced by Namibian tertiary level distance students are lack of access, especially to electronic resources, attributable to lack of infrastructure and access to computing facilities.

1.3 Statement of the problem

There has been an increase in the number of students enrolled under the Centre for External Studies at the University of Namibia. In 2014 alone, a total of more than 5,000 distance learners were registered for various courses under the CES. Anecdotal evidence and the researcher‟s personal experiences as the Distance Education Librarian at University of Namibia, between the years 2009 to 2012, revealed that a majority of distance learners made little or no use of electronic resources provided by UNAM Library despite high cost of electronic resources that

the University library was incurring. Generally the attitudes of the learners towards electronic resources seemed lukewarm. It was not clear whether the non-use was attributed to lack of skills, lack of connectivity and ICT facilities, lack of awareness or simply preference for print resources. Little or complete lack of empirical research to reveal or confirm the causes meant that any policy or practical interventions to alleviate the situation would not be well informed.

Boadi and Letsolo (2004) noted that the non-use of electronic resources by distance learners may be attributed to a number of factors including, but not limited to lack of confidence, as they may be returning to study long after their initial qualification and may be unfamiliar with modern information-seeking facilities. This finding was important to this study in the sense that the UNAM Library has over the past years been subscribing to and acquiring various electronic resources to meet the information needs of the students both on-and off-campus and had introduced various platforms such as the library website, through which most of these online resources can be accessed. However the non-use of the electronic resources was worrisome.

Though Songhui (2008) argued that users of university libraries are well acquainted with techniques of computer use as opposed to those who use public libraries, this did not seem to be the case at the University of Namibia, as majority of distance learners seemed to face challenges with basic computer use. Papacharissi and Rubin (2000) stated that one requires greater understanding of the personal and social attributes that affect people using electronic resources and their related information-seeking behaviour. This study therefore aimed at investigating the use of electronic resources by distance learners at University of Namibia with a view to proffering policy and practical interventions to improve access and use of the resources.

1.4 Research objectives

The main research objective of this study was to investigate the use of electronic resources by distance learners at University of Namibia. Two specific research objectives were addressed in this regard:

1. To determine the extent of use of electronic resources by distance learners

2. To investigate the usage behavior and attitudes of distance learners towards electronic resources.

1.5 Research questions

The main purpose of this study was to investigate the use of electronic resources by distance learners at University of Namibia. Specifically, the study posed the following research questions:

1. What are the attitudes and perceptions of distance learners towards electronic resources?
2. What electronic resources are available to distance learners at UNAM?
3. What is the level of awareness of the learners about electronic resources available in the UNAM Library?
4. What ICT competencies do distance learners have to effectively use electronic resources?
5. What is the level of use of electronic resources by distance learners?
6. What factors hinder the use of electronic resources by distance learners?
7. What recommendations are needed to improve the use of electronic resources by distance learners?

1.6 Study assumptions

The population of distance learners was considered to share similar experience in the use of electronic resources. It was also assumed distance learners experience similar issues of access irrespective of the level of their study. This population was assumed to be homogenous.

1.7 Significance of the study

This study therefore aims to investigate the use of electronic resources by distance learners‟ at University of Namibia. The outcome of the study could inform the development of an electronic resource collection development policy to ensure balanced acquisition of electronic resources and those that are needed by users. It may also inform the installation of relevant ICT

infrastructure as well as capacity building plan to ensure access to electronic resources by distance learners at University of Namibia.

The results of the study are expected to provide a better understanding of the usage of electronic resources by distance learners and provide a platform for sound collection development policies, infrastructure development and capacity building. It is also expected that the outcome will help enhance usage of electronic resources through deliberate marketing strategies for electronic resources. The study outcomes will contribute towards the body of knowledge in the area of technology acceptance and adoption from the perspective of distance learning in a developing country such as Namibia. The study will be significant in providing understanding of relative usage of print and electronic resources by distance learners and help in the allocation of resources appropriately. Besides, Mawindo (2005, p. 3) cautions, "libraries need to be aware of the usage of both print and electronic media so that they can make informed decisions on budget allocation". What‟s more, based on the finding of this study, it is the researcher‟s take that the study will generate baseline data on distance learners and their use of electronic resources in Namibia.

1.8 Delimitations of the study

This study focused on the use of electronic resources by distance education learners at the University of Namibia. Distance learners in their first year of study were omitted from this study for reason that they were considered freshmen at the University and would only adequately use the resources once they were introduced to them and trained on how to use them. The study was therefore limited to undergraduate students at UNAM who were in the second, third and fourth year of their studies as well as postgraduate students. It was assumed that this category of learners had gone through library orientations and would have had adequate knowledge of electronic resources available.

It was beyond the scope of this study to cover all academic institutions that offered distance education in Namibia. This study therefore only covered distance learners registered by CES at UNAM. However, the dispersion of UNAM centres across the country with the main campus being in Windhoek, posed many challenges such as transportation and financial constraints.

Moreover, this research being a survey study of distance learners at UNAM means that results of the study may not be generalised to population of distance learners registered in other institutions of higher learning in Namibia. ICTs such as computers and laptops were investigated in this study however; other ICT such as ipad, iphone, smart phones etc and software were not explored. A reason for their exclusion was based on the assumption that not all the learners had access to these technologies (smartphones, iPad, iphone) because of cost implications. High cost for data plan for smartphones and iPad makes the use of access through these devices problematic.

1.9 Theoretical Perspectives

This section provides only a brief introduction of theory that underpinned the study. More detailed elaboration of the theoretical framework is provided in chapter two of this thesis. This study was informed by the Technology Acceptance Model (TAM). However, other models such as Theory of Reasoned Action (TRA); Theory of Planned Behaviour (TPB); Decomposed Theory of Planned Behaviour and (DTPB) were also discussed to complement the Technology Acceptance Model. They were selected because TAM alone was not robust enough in predicting behavioural intention of System users. TAM variables were combined with those from DTPB as it provides a more complete understanding of the determinants of intention and incorporates additional factors such as subjective norms, perceived behaviour control, efficacy and facilitating conditions that are not presented in TAM. Nonetheless TAM was purposefully chosen as the main model because it is particularly believed to be robust in predicting and explaining technology acceptance and use in various situations (Dillon and Morris, 1996). The model provided a basis of explaining the impact of variables such as beliefs, attitudes, and intentions in using a technological application. The model also provides a platform for understanding perceived usefulness and perceived ease of use of a given technology (Sahin and Shelley, 2008).

Numerous studies have proven that TAM yields consistently high explanatory variance on why users choose to utilise systems (Pavri, 1988 cited in Wahab, 2008; Mathieson, 1991). The TAM has been used in understanding technology, adoption and use in libraries, government agencies and business environment, to mention just a few. Roberts and Henderson (2000) used TAM to examine government workers‟ experience in the use of computers. They attempted to explain the psychological determinants of attitudes and subsequent acceptance behaviour towards IT in the

workplace. A similar study by Vijayasarathy (2004), though conducted using a business context, also attempted to explain consumer intention to use online shopping. Some of the key studies in library and information studies that adopted this model include those by Ray and Day (1998); Boadi and Letsolo (2004); Lee, Cho, Gay, Davidson, and Ingraffea (2003); Sahin and Shelly (2008) and Okello-Obura and Ikoja-Odongo (2010).

1.10 Preliminary literature review

The elaborate discussion of literature is provided in chapter three of this thesis. The brief literature review presented in this chapter provides preliminary introduction to empirical and theoretical research on the discourse of technology acceptance and use with regard to electronic resources by distance learners found in books, journals, online databases, conference proceedings, official publications, theses and other sources from the contexts of both developed and developing countries. The literature surveyed in chapter three of this thesis is organised around the research questions, key variables of the theoretical model and broader issues of the research problem. Collectively the literature is reviewed on attitudes and perceptions of distance learners towards electronic resources; electronic resources available to distance learners; level of awareness of electronic resources by distance learners; ICT competencies required by distance learners to use electronic resources; the level of use of electronic resources by distance learners; factors inhibiting the use of electronic resources by distance learners and strategies for overcoming challenges impeding electronic resources. Furthermore, the literature reviewed also covers broader issues such as, digital divide, licensing of electronic resources, and intellectual property. This scope of literature provided the researcher with a clear understanding of the research topic and helped establish gaps, which this study has attempted to bridge.

From the perspective of developed countries, a number of related studies have covered attitudes towards electronic resources (Ray and Day, 1998), user perceptions and preferences, perceived usefulness and perceived ease of use and user satisfaction (Appleton, 2006; Mitchell, Chen, and Macredie, 2005 cited in Sahin and Shelly, 2008); technology acceptance and social networking (Lee *et al*., 2003). In the context of developing countries, studies have focused on information needs and information seeking behaviour of distance learners (Boadi and Letsolo, 2004) and

electronic information seeking among LIS postgraduate students at Makerere University in Uganda (Okello-Obura and Ikoja-Odongo, 2010) among others.

The results from the studies have been varied. For example, the findings of Ray and Day (1998) conducted at University of Northumbria in Newcastle in the United Kingdom revealed that 38% of distance learners used electronic journals and 46% used Online Public Access Catalogue (OPAC). The findings further revealed that 60% of learners acquired significant information from the Internet and many more used electronic resources Ozoemelem (2009); Oladokun and Aina (2009) in their study revealed that 71% continuing education students at University of Botswana preferred print resources, while 15% preferred electronic resources. Similarly Mawindo (2005) on the "evaluation of students‟ use of print and electronic resources at the University Of Malawi College Of Medicine" reached the conclusion that print resources were more preferred than electronic resources due to factors such as lack of sufficient computers and low levels of computer and information literacy.

1.11 Research methods

Research methodology is comprehensively presented in chapter four of this thesis. This section provides an introduction of what is covered. This study is underpinned by the post-positivist paradigm, which is considered the most widely used in contemporary social research.

The choice of a research method is considered important in determining how a researcher conducts research because it has an enormous impact on the data collection and analysis of the research study (Salehi and Golfshani, 2010). This study therefore applied multiple methods. One of the reasons for using this approach was to capture both qualitative and quantitative data. Another reason was that the chosen paradigm (post-positivism) has significant influence on the modern multiple methods movement (Johnson, Onwuegbuzie and Turner, 2007). The use of multiple methods (triangulation) enabled the researcher to combine elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration. Collecting different kinds of data by different methods from different sources

has been found to provide a wider range of coverage that may result in a fuller picture of the unit under study than would have been achieved otherwise (Bonoma, 1985).

The units of analysis of this study were distance learners, CES lecturers, CES coordinators, and UNAM Library staff. The study applied a purposive sampling technique to sample the centre coordinators at UNAM centres, the Librarians and CES lecturers. As pointed out the study assumed that the distance learners shared similar characteristics and for this reason a simple random sampling technique was used to sample the respondents.

Various data collection methods including survey questionnaire, interviews and observations were employed by the researcher. Survey questionnaires were used to evaluate people‟s feelings, thoughts, opinions and relationships regarding the use of electronic resources by distance learners. Interviews and observations, on the other hand, were conducted as follow ups to provide an opportunity to clarify any outstanding issues from the learners and obtain insights into the services offered by the library and user education for distance learners at University of Namibia.

Quantitative data was analysed using the Statistical Package for the Social Sciences (SPSS) for Windows™ software. Quantitative tools of presentation of findings such as graphs, figures and tables were used to explore, present, describe and examine relationships and trends within the study‟s research data. The study generated frequencies and descriptive statistics. Qualitative data was, on the other hand, analysed using the ATLAS.ti™ software, and the data analysis technique employed was content analysis, which is referred to as “the process of extracting desired information from a text by systematically and objectively identifying specified characteristics of the text” (Nengomasha, 2009, p. 17). Data was transcribed, coded, grouped into categories, and interpreted in terms of common themes. The reliability of instruments was achieved through pretesting to ensure that they were correctly worded, in order to avoid misinterpretation by respondents. Validity on the other hand, was attained through a careful selection of a representative sample and data analysis as well as through the use of triangulation in order to reflect multiple ways of establishing truth (Golafshani, 2003). To ensure that the tests for this study were valid and reliable, all the questionnaires were peer reviewed, pre-tested and triangulated.

1.12 Ethical considerations

In terms of ethics, respondents were asked to voluntarily participate in the research and were free to withdraw from the research at any time without any negative or undesirable consequences to themselves. Personal details collected were not preserved to enhance confidentiality and privacy of the respondents. The study complied with the University of KwaZulu-Natal research ethics policy. The ethical rights of the population were respected, and gatekeeper permission/consent was respectively obtained from the University of Namibia in general and the Centre for External Studies in particular. According to Saunders, Lewis, and Thornhill (2012), the general research design should not cause embarrassment, harm or any other negativity to the research population. Therefore, the research purpose was explained to the targeted population prior to completing the questionnaire and participating in the interviews. A copy of the informed consent form was attached to the questionnaires.

1.13 Definition of key terms

Attitude: This is referred to by Kripanont (2007) as a determinant of a person‟s belief and evaluation of behavioural outcomes. However, this study adopted the following definition: the confidences that distance learners have in their own ability to use the Internet and electronic resources.

Distance education: This is referred to as an educational approach in which there is a quasi-separation of the learner and the teacher in time and space (Keegan, 1996 cited in Ojo and Olakulehin, 2006). Boadi and Letsolo (2004) defined distance education as a form of study whereby learners and tutors were separated by geographical distance. This definition is adopted in this study because it is based on student demographics that are similar to those of respondents in this study.

Distance learners/distance students: Although terminology in higher education is not standardised, the terms distance learners and students are sometimes used synonymously depending on one‟s background. In the context of this study, a distance learner is not regarded as one who studies on campus nor have immediate and easy access to academic library resources

(Jolly, 1998 cited in Boadi and Letsolo, 2004). The two terms have been used interchangeably to mean the same thing.

Electronic resources: For the purpose of this study, electronic resources included both electronic-only resources and materials that were available either electronically or online (Liu, 2006). This would include CD-ROM, OPAC, Internet and Online databases which serve as rich sources of information.

Perceived ease of use: Refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). This was likely the reason distance learners would use electronic resources for research, study and assignments. This also addressed the degree to which distance learners found it easy to navigate through the system to retrieve information.

Perceived usefulness: This study adopted the definition of perceived usefulness by Lee *et al.,* (2003). They defined it as, the degree to which distance learners believed that using the electronic resources would enhance their academic performance (Lee *et al.,* 2003).

1.14 Structure of thesis

The thesis has seven chapters, which are described briefly below.

Chapter 1: Introduction

This chapter gives the background of the study, the problem under investigation and the setting of the research problem, objectives, and significance as well as the definition of key terms.

Chapter 2: Theoretical framework

This study was informed by the Technology Acceptance Model.

Chapter 3: Literature review

A discussion of the literature relevant to the study is provided in this chapter. A review of the literature will assist in developing the research instruments and interview guides.

Chapter 4: Research methodology

This chapter gives a description of the research paradigm, approach, design and population, samplings and data collection and instruments, data analysis techniques, validity and reliability, ethical consideration of the research, and finally the evaluation of the research methodology.

Chapter 5: Data analysis and presentations

This chapter presents the finding of the study using both inferential and descriptive statistics.

Chapter 6: Discussion of research findings

In this chapter the research findings presented in chapter five are discussed and interpreted using extant literature and theory that informed the study.

Chapter 7: Summary, conclusions and recommendations

This chapter presents the summary of the findings, the conclusion and the recommendations arising from the study. The originality of the study is adduced as are further areas of study.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 Introduction

Theoretical framework is referred to as a "general theoretical system with assumptions, concepts and specific social theories" (Neuman, 2011, p. 85). In other words, a theoretical framework is a collection of interrelated concepts that determines what things to measure and what statistical relationships to look for. Welman, Kruger, and Mitchell (2005, p. 21) define a theory as a "statement or a collection of statements that specify the relationships between variables with a view to explaining phenomena such as human behavior". Similarly, Babbie (2007, p. 43) noted that theories are "systematic sets of interrelated statements intended to explain some aspects of social life". Theories and models are used to shape the pursuit of answers to research questions as to why, what, and how things are happening (Reihl-Sisca, 1989 cited in Shikongo, 2010). Therefore, theoretical frameworks are often used to provide the context for literature review, research design, data collection, and analysis and discussions of research studies.

The purpose of this study was to investigate factors that influence the use and non-use of electronic resources by distance learners at University of Namibia. This chapter starts by presenting a general overview of technology adoption models followed by a detailed discussion of specific theories that are used to study technology acceptance, adoption and use that include TRA, TPB, DTPB and TAM. These theories have been used extensively to understand end users‟ behaviours in the area of information systems (Kripanont, 2007) and cognate disciplines. In this study, these theories are used to help provide a sound basis for extending research on technology acceptance in the context of electronic resources‟ use by distance learners at UNAM.

2.2 Technology adoption and acceptance theories

Hu, Chau, Sheng and Yan (1999, p. 96) defined technology acceptance as "an individual‟s psychological state with regard to his or her voluntary or intended use of a particular technology". Tao (2008) on the other hand added that the successful implementation of

electronic resources is highly dependent on user acceptance of the technology. Ma, Andersson, and Streith (2005) assert that access to computer technology might have a direct influence whether an individual uses the technology or not, although the sole availability of technology infrastructure does not guarantee actual usage. Scholars such as Guinan, Cooprider and Sawyer (2010 cited in Ghazizadeh, Lee and Boyle, 2012) assert that past experience with a specific technology influences people to use a certain technology more often. Hu, Chau, Sheng and Yan (1999) observed that for technology to be effective, it must be utilised.

In order to enhance acceptance and increase usage of electronic resources, it is important to understand how users make decisions on their selection and use of such electronic resources (Tao, 2008). This study was therefore premised on the understanding that the optimal use of the UNAM Library electronic resources could not be achieved if distance learners were not made aware of the resources available, if they lacked the necessary skills to use the resources, and if they were not willing to use the resources. The researcher felt that it was critical to understand the readiness and willingness of distance learners to use electronic resources so that these resources could effectively be integrated into their studies (Kowitlawakul, 2011). Besides, users‟ attitudes and their familiarity with the technologies in use influenced the extent of usage of such technologies. There are however factors that hinder people from effectively using the technologies. Okello-Obura and Ikoja-Odongo (2010) pointed out that a student‟s positive attitude towards access to electronic resources is affected by the inadequacy of computing facilities and internet connectivity. In the words of Munger (2003 cited in Oulanov, 2008), usability testing provides an efficient method for evaluating the systems‟ effectiveness and user satisfaction.

Scholars and researchers alike have used TRA, TPB, DTPB and TAM model to explain behavioural intention and to predict user acceptance of computer technology (Hu, Chau, Sheng and Yan, 1999; Taylor and Todd, 1995). TAM has however emerged as one of the most promising and influential models that have been used to explain the acceptance of technology systems better than TRA; TPB and DTPB (Taylor and Todd, 1995; Hu, Chau, Sheng and Yan, 1999; Malhotra and Galletta, 1999; Kowitlawakul, 2011). TAM provides a basis of explaining the impact of variables such attitudes and intentions of using a technological application (Sahin

and Shelley, 2008). Besides TAM, other significant theoretical models that attempt to explain the relationship between user attitudes, perceptions, beliefs and eventually system use include TRA (Ajzen and Fishbein, 1980) and TPB (Agarwal and Prasad, 1999), wherein TAM compares well with TRA and TPB (Venkatesh and Davis, 2000).

2.3 Theory of Reasoned Action (TRA)

This behavioural theory and model was first introduced by Ajzen and Fishbein in 1980 and extended by Ajen in 1991 (Shih *et al*., 2011). Malhotra and Galletta (1999) noted that TRA is mostly studied in social psychology and concerned with the determinant of consciously intended behaviour. Kripanont (2007) in contrast believes that TRA forms the backbone of studies associated with attitude-behaviour relationships. This model has also been praised by Shih *et al*. (2011) as a good forecaster of behaviour in various situations. According to the TRA model, "a person‟s performance of a specified behaviour is determined by his or her behavioural intention (BI) to perform the behaviour, and BI is jointly determined by the person‟s attitude (A) and subjective norm (SN) concerning the behaviour in question" (Malhotra and Galletta, 1999, p. 1). In other words, beliefs influence attitudes, which, in turn, shape intentions, which guide or dictate behaviour (Chau and Hu, 2001).

Kripanont (2007) noted that attitude is determined by a person‟s beliefs and evaluation of behavioural outcomes. Consequently, an individual who strongly believes that positive outcomes will result from performing a particular behaviour will have a positive attitude towards that behaviour. Similarly, if a person strongly believes that a particular behaviour will have a negative outcome, then there will be a negative attitude towards that behaviour (Kripanont, 2007). The TRA model is depicted in Figure 2.1.

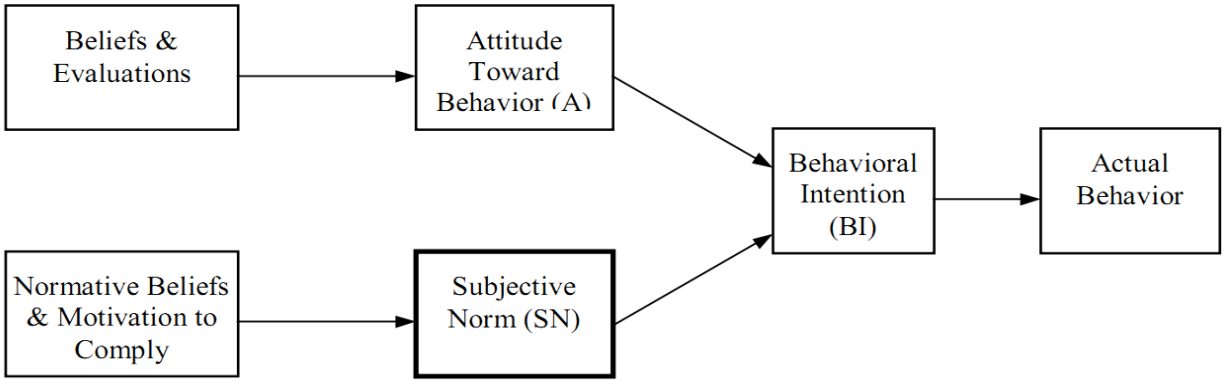

Figure 2.1: Theory of Reasoned Action (Source: Fishbein and Ajzen, 1975) Adapted: Malhotra and Galletta (2001, p. 2)

Davis, Bagozzi, and Warshaw (1989) applied TRA to individual acceptance of technology and found that the variance explained was largely consistent with studies that had employed TRA in the context of other behaviours (Venkatesh, Morris, Davis, and Davis, 2003). TAM uses "TRA as a theoretical basis for specifying causal linkages between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Atittude (A) and Behavioral Intention (BI)" (Malhotra and Galletta, 1999, p. 1).

The TRA model is applicable to this study in that it addresses issues relating to attitude that influence behavioural outcome. It is assumed that if a user believed that using electronic resources is worthwhile, then the chances of them using it would be much greater. However, if they believe that using electronic resources will not benefit their studies and any other aspect of their lives, then there is a lower chance of them using the technology. Similarly, attitudinal belief presents a student with confidence that electronic resources proffer convenient ways of retrieving information faster and information that is up to date. This association indicates how important it is for students to have access to and use electronic resources as opposed to using print resources. The normative belief refers to a student‟s perception of the use of electronic resources by friends or lecturers. This perception plays a key role in influencing the student‟s opinion (Shih and Fang, 2004). TRA was further refined to become TPB, which is also called the extended theory of reasoned action, and is discussed in the subsequent section 2.4.

2.4 Theory of Planned Behaviour (TPB)

Theory of Planned Behaviour is a behavioural model used to research a wider acceptance situation than TAM (Shih *et al.*, 2011). It has been extended from TRA by incorporating an additional construct called behavioural control or perceived behavioural control (Chau and Hu, 2001). The reason for this additional construct was "to account for situations where an individual lacks the control or resources necessary for carrying out the targeted behaviour freely" (Kripanont, 2007, p. 50). TPB not only examines determinants of information system adoption, but also examines the adoption and usage of information systems from the perspectives of innovation diffusion (Lu, Yu, Liu, and Yao, 2003). This theory provides more specific information that can better guide development in terms of determining and influencing human behaviour (Lu, Yu, Liu, and Yao, 2003). Furthermore, TPB avers that an individual‟s behaviour is influenced by three constructs such as behavioural beliefs, normative beliefs and control beliefs (Shih *et al.*, 2011). Shih *et al.* (2011, p. 5056) note that, "the users‟ core beliefs include the consequences of the action, the expectations of others, and beliefs about how the user controls, or does not control the end results". Similarly, Chau and Hu (2001, p. 701) noted that an "individual‟s behaviour can be explained by his or her behavioural intention, which is jointly influenced by attitude, subjective norms and perceived behavioural control". Kripanont (2007, p. 50-51) shed some more light on the matter by noting, "when given a sufficient degree of actual control over their behaviour, people are expected to carry out their intentions when the opportunity arises". The TPB is illustrated in Figure 2.2.

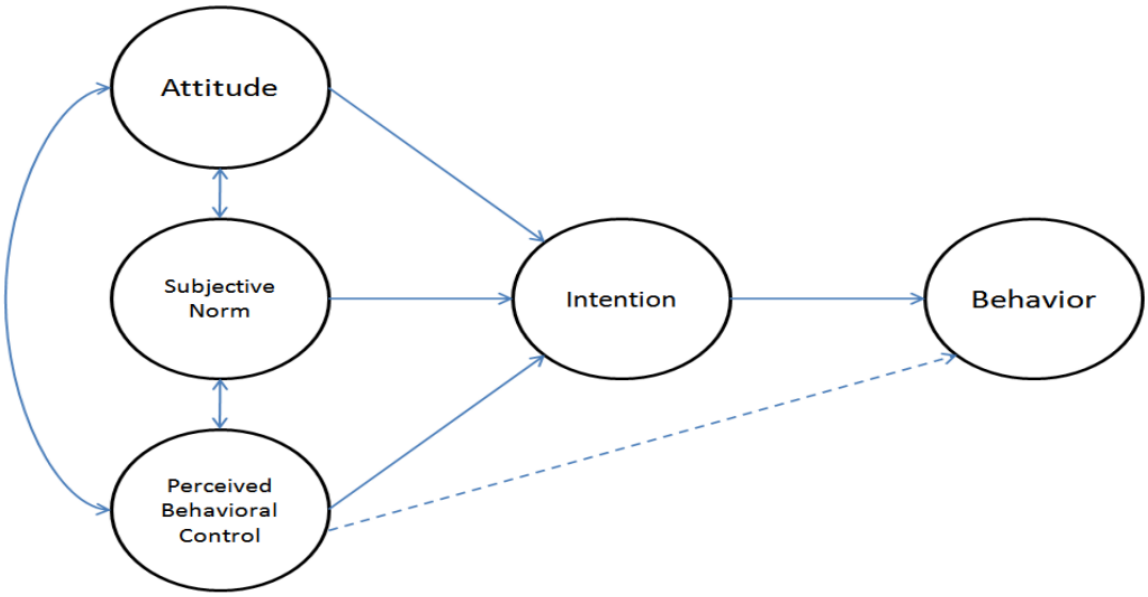

Figure 2.2: Theory of Planned Behaviour (Source: Shih *et al.*, 2011, p. 5057)

Taylor and Todd (1995) combined the constructs of TAM (PU and PEOU) and TPB to explain consumer behaviour. They wanted to establish which of the models best helped understand the usage of information technology (IT). Their results showed that TAM and the two TPB models (TPB and DTPB) were comparable (Kripanont, 2007). When Mathieson (1991) compared TAM and TPB to predict user intentions of using an information system; the result of his study revealed that both models predicted user intentions well, and that although TAM was the easiest theory to apply, TPB provided more specific information (Vela, Chou, Melcher and Pearson, 2010). This finding was similar to the observation by Kripanont (2007, p. 50-51), who stated that "TAM was easier to use than TPB, and provided a quick and inexpensive way to gather general information about an individual‟s perception of a technology".

The relevance of this model to this study is that it aided in the understanding of how human behaviour influences behavioural intentions to use or not to use electronic resources, which are also influenced by attitude, subjective norms and perceived behavioural control. For this study, the perceived behavioural control refers to knowing how to navigate the electronic databases as well as to search for electronic information resources via the Internet (Shih and Fang, 2004). Moreover, subjective norms refer to students‟ perceptions regarding the use of electronic resources by the opinions of the referent group (such as friends or lecturers). Perceived

behavioural control describes students‟ perceptions of the availability of knowledge, resources and opportunities necessary for using electronic resources (Lin, 2007).

The TPB was further refined to become DTPB, which is also called The Decomposed Theory of Planned Behaviour. This theory is discussed in section 2.5.

2.5 Decomposed Theory of Planned Behaviour (DTPB)

The Decomposed Theory of Planned Behaviour is believed to be identical to TPB and similar to TAM (Venkatesh, Morris, Davis and Davis, 2003). However, despite its similarity to TAM, DTPB incorporates additional factors such as subjective norm and perceived behaviour control that is not presented in TAM. These additional constructs have been found to be important determinants of behaviour (Ajzen, 1991 cited in Kripanont, 2007, p. 50-51). DTPB provides a more complete understanding of the determinants of intention. Taylor and Todd (1995) showed that the decomposed model of the TPB has better explanatory power than the pure TPB and TRA models (Shih and Fang, 2004). The DTPB is illustrated in Figure 2.3.

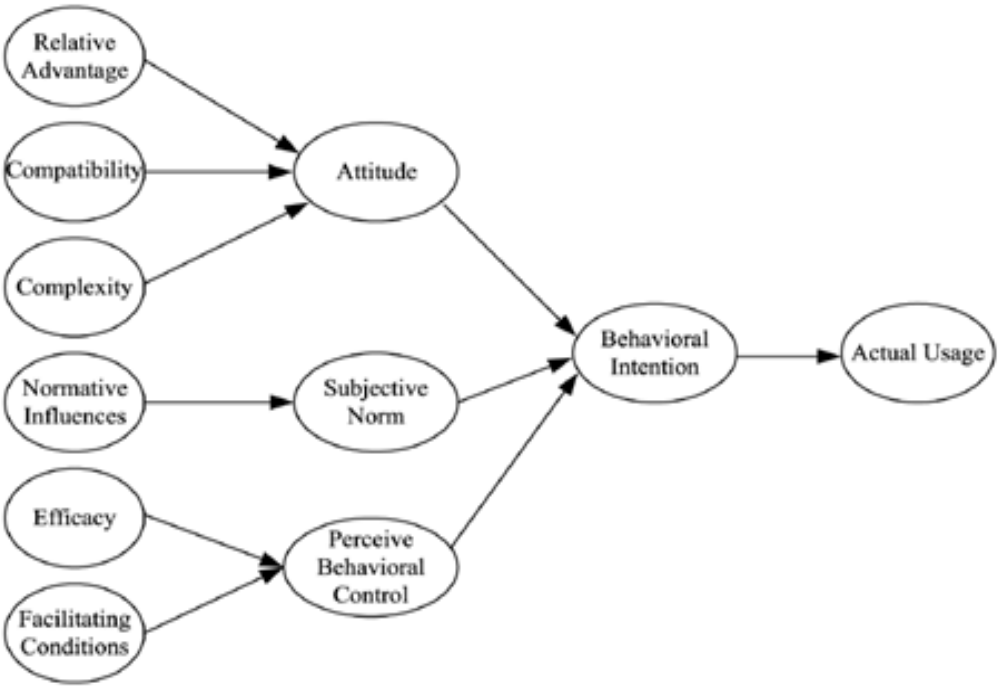

Figure 2.3: Decomposed Theory of Planned Behaviour (Source: Shih and Fang, 2004, p. 217)

For the purpose of this study, self-efficacy refers to a student‟s self-assessment of his/her capabilities to use electronic resources. Facilitating conditions (FC), on the other hand, focus on assessing the facilitating conditions for using electronic resources, including three vital resources: internet access, infrastructure and geographical location (Lin, 2007). Electronic resources and compatibility of electronic resources by students are expected to influence behavioural intentions through attitudes (Hartshorne and Ajjan, 2009).

2.6 Technology Acceptance Model (TAM)

Of all the models discussed thus far, TAM is believed to be the most widely accepted and used among information systems researchers (Agarwal and Prasad, 1999). TAM focuses on individual acceptance of technology by using intention or usage as a dependent variable (Venkatesh, Morris, Davis and Davis, 2003). TAM is designed to explain an entire situation or behaviour, with the idea that it would eventually be able to predict that behaviour. The theory of TAM was first introduced by F.D. Davis in 1986 and applied in North America. This model was based on the TRA for modelling of the acceptance of information technology (IT) by users. TRA is alleged to be a general theory of human behaviour, while TAM is more specific to information system usage (Mathieson, Peacock, and Chin, 2001). Numerous studies discovered that TAM yields consistently high explanatory variance on why users chose to utilise systems (Mathieson, 1991; Pavri, 1988 cited in Wahab, 2008). The use of TAM was gradually extended to other countries around the world (Sheikhshoaei and Oloumi, 2011). The model is believed to be very useful in predicting and explaining technology use in various situations (Dillon and Morris, 1996). It has also proved very successful in studies of users‟ adoptions of technology. This model provides a basis of explaining the impact of variables such as beliefs and intentions using a technological application. It also measures perceived usefulness and ease of use (Sahin and Shelley, 2008).

TAM has been used in various sectors such as libraries, government agencies, and the business environment. For example, Roberts and Henderson (2000) used this model to examine government workers‟ experience in the use of computers. They attempted to explain the psychological determinants of attitudes and subsequent acceptance behaviour towards IT in the

workplace. Similarly, Vijayasarathy (2004) used TAM to explain consumer intention to use online shopping. The results from a study by Kowitlawakul (2011) showed that perceived usefulness was the most influential factor that influenced nurses‟ intentions to use electronic Intensive Care Unit (eICU) technology. The principal factors that influenced perceived usefulness were perceived ease of use, support from physicians, and years of working in the hospital. A similar study by Hu, Chau, Sheng and Yan (1999), revealed that TAM was able to provide a reasonable depiction of physicians‟ intentions to use telemedicine technology. Perceived usefulness was found to be a significant determinant of attitude and intention, but perceived ease of use was not. In his study, Tao (2008) observed that there was a significant growth in the availability and use of electronic resources, and questioned why users selected and used an electronic resource. He found that perceived usefulness played a major role in determining students‟ intentions to use electronic resources. There are several studies on the technology acceptance which are summarised by Lu, Yu, Liu and Yao (2003) in Appendix 9.

Hu, Chau, Sheng and Yan (1999, p. 94) point out that there are several studies “that have examined TAM‟s overall explanatory power and measurement validity in different empirical settings characterized by user group, technology, and organizational context”. They pointed out that using the theory was of great importance in measuring and understanding perceived usefulness and perceived ease of use on behaviour intention. TAM is claimed to be capable of providing a fairly adequate explanation and/or prediction of user acceptance of IT (Hu, Chau, Sheng and Yan, 1999).

TAM suggests that two beliefs – perceived usefulness and perceived ease of use – are instrumental in explaining the variance in attitude (Agarwal and Prasad, 1999). These are the main determinants of users‟ attitudes towards a technology, which, in turn, predicts their behavioural intention to use and accept the system (Ghazizadeh, Lee and Boyle, 2012). As mentioned earlier, the two factors, perceived usefulness and perceived ease of use have a great impact on peoples‟ attitude towards the use of IT (Sheikhshoaei and Oloumi, 2011). Figure 2.4 below is the original TAM that was proposed by Davis, Bagozzi, and Warshaw (1989). This figure depicts that both perceived usefulness (U) and perceived ease of use (E) predict the attitude towards using the system (A). Perceived usefulness and attitude towards using the system therefore influences the individual‟s behavioural intention (BI) to use the system. Actual

use of the system is predicted by behavioural intention (Malhotra and Galletta, 1999). Like TRA, TAM assumes that computer usage is determined by BI, though BI is viewed as being jointly determined by a person‟s attitude towards using the system (A) and perceived usefulness (U) (Davis, Bagozzi and Warshaw, 1989).

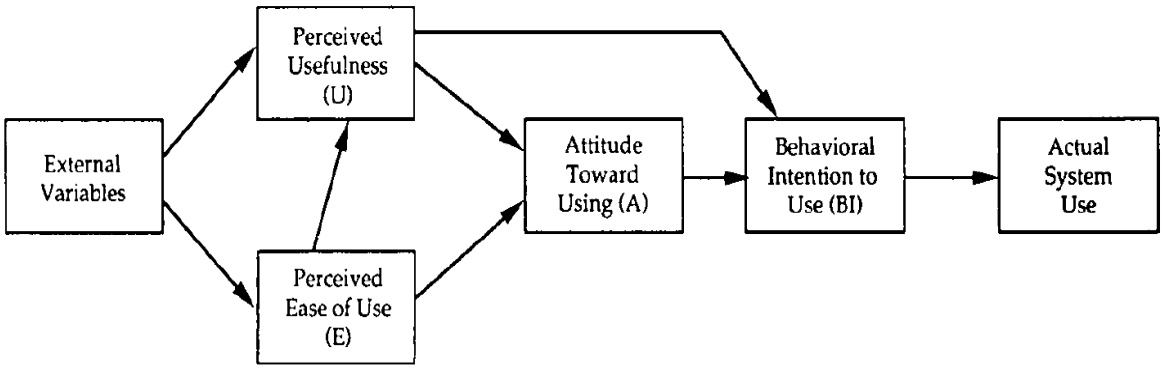

Figure 2.4: Technology Acceptance Model (Source: Davis, Bagozzi, and Warshaw, 1989)

Thus far, it has been learned that TAM is deeply rooted in the theory of reasoned action, which proposes that beliefs influence attitudes, which, in turn, lead to intentions, and then generates behaviour (Lu, Yu, Liu and Yao, 2003). TAM assumes, usage of a particular technology is voluntary (Davis, 1989) and that when someone forms an intention to act, they will be free to act without limitation (Bagozzi, 1992 cited in Kripanont, 2007).

Researchers such as Lu, Yu, Liu and Yao (2003) assume that beliefs about usefulness and ease of use are always the primary determinants of information technology or information systems adoption. Davis (1989, p. 985) defines usefulness as “the degree to which a person believes that using a particular system would enhance his or her job performance” and defines perceived ease of use as “the degree to which a person believes that using a particular system would be free of effort”. According to TAM, both perceived usefulness and perceived ease of use are beliefs about a new technology that influence an individual‟s attitude towards using that technology. These are beliefs that are presumed to (1) influence attitudes towards new technology, and (2) mediate the relationship between external variables and attitude (Davis, Bagozzi and Warshaw, 1989).

Perceived usefulness is believed to be influenced by perceived ease of use. This influence is due to the fact that if a system is easy to use, then it is believed to be useful (Venkatesh and Davis, 2000). However, the other determinant of TAM perceived ease of use has been observed to exhibit a much less consistent effect on the intention to use technology (Venkatesh and Davis, 2000). These two factors have a great impact on peoples‟ attitudes towards the use of IT. External factors such as social and organisational factors, features of computer systems, the approach to training, and also the support of other people in applying the computer systems all have potential effects on users‟ attitudes towards the usefulness and the ease of use of IT (Davis, Bagozzi and Warshaw, 1989).

This study measured perceived usefulness with regard to providing access to useful information, and reducing information retrieval time. In the context of electronic resources, ease of use is expected to be an important factor that determines behavioural intentions through attitude towards electronic resources. Perceived ease of use represents the degree to which online databases are perceived to be easy to understand, learn or operate (Lin, 2007; Hartshorne and Ajjan, 2009).

2.7 Limitations and extension of TAM

Ma, Andersson and Streith (2005, p. 389) in their review of literature on computer technology use studies, suggested that "emergent factors might not be significant over time (e.g. attitude) and emergent factors might not be consistent in result significance (e.g. subjective norm)". Mathieson, Peacock and Chin (2001) noted that TAM has a limitation of taking into account variables that are important predictors of technology usage.

In their study, Malhotra and Galletta (1999) critiqued the original TAM by Davis (1989). They observed that the theory had theoretical and psychometric problems. Researchers such as Davis (1989) and others dropped the attitude construct from the structural model of TAM because they observed that it had a weak strength in mediating beliefs‟ impact on behavioural intention to use (Davis, Bagozzi, and Warshaw, 1989). The original TAM did not incorporate the influence of social and control factors (Ghazizadeh, Lee and Boyle, 2012). The reason for this could be because their studies focused heavily on the use of desktop software such as word processing and

spreadsheet. Noteworthy here is the fact that these studies were conducted over two decades ago. However, the variable attitude towards the system has been identified as an essential determinant to behavioural intention as described in the TRA and – according to TAM – predicts an individual‟s use of technology (Porter and Donthu, 2006). In as much as researchers critique TAM, Venkatesh, Davis, and Morris (2007) caution that common criticisms of TAM are also key strengths, such as simplicity and parsimony. These concerns raised above are worrisome as they indicated shortcomings in the model, which, as a result, could reduce the predictive powers of the model. This study has, however, adopted TAM.

2.7.1 TAM extensions

It is indicated in the literature on TAM the need to extend the model. Consequently, related models such as TPB and TRA have extended TAM (Wetzels, 2007 cited in Smith *et al.*, 2011, p. 3). TAM has been extended to cater for perceived usefulness and usage intention constructs (Venkatesh and Davis, 2000). Ajzen and Fishbein (1980) maintained that it is important that new constructs are compatible with those that already exist when extending a model. According to Ma, Andersson and Streith (2005), TAM could be expanded (e.g. subjective norm) to provide a richer model to predict and to explain computer technology acceptance/adoption. Legris, Ingham and Collerette (2003) noted that TAM has been criticised for its parsimonies, and this was addressed by extension of the model in order to provide a richer explanation for computer technology acceptance.

Davis, Bagozzi, and Warshaw (1989) observed that the core constructs of TAM, PU and PEOU are influenced by a number of external variables such as system features and user characteristics. There are also other outside variables that affect the usage of a system. The aim is therefore to adopt TAM and extend it so that it includes additional key determinants such as perceived usefulness and usage intention constructs (Venkatesh and Davis, 2000). Researchers have added new constructs to TAM that are beyond PU and PEOU that enhance the model‟s predictive powers (Ghazizadeh, Lee and Boyle, 2012). Mathieson, Peacock and Chin (2001, p. 89) caution, “predictive power is not the only criteria that can be used to judge a models‟ value”. In order to predict information system usage, they extended TAM by including an extra construct „perceived

resources". Those variables extended to TAM include – but are not limited to – demographics, managerial knowledge, social factors, environmental characteristics, and task-related characteristics (Pijpers, 2001). Other factors include motivational factors introduced by Vallerand (1997).

Other researchers that extended TAM include – but not limited to – Taylor and Todd (1995) who extended TAM by adding social norms constructs in order to "test whether experienced and inexperienced users differed in the way they made usage decision" (Mathieson, Peacock and Chin 2001, p. 89). Porter and Donthu (2006) extended TAM in two ways: first, they included perceived access barriers among the key beliefs about a technology that influence its use and secondly, they added four key demographic constructs as external variables to TAM, i.e. age, education, income and races. Their modified model suggested that TAM's belief variables were differentially relevant to consumers with different demographic profiles and served to mediate the relationships between demographic variables and attitude towards the Internet. These extensions impacted this study in that it presented a clearer picture of, and enhanced a better understanding of the factors that triggered distance learners to use or not use electronic resources.

In 2000, Venkatesh and Davis proposed a model extending TAM, and the new model included social influence processes and cognitive processes. Findings from a study by Venkatesh and Davis (2000, p. 187) revealed that "both social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental process (job relevance, output quality, result demonstrability, and perceived ease of use) significantly influenced user acceptance".

This study therefore adopts the Technology Acceptance Model taking into account the various extensions that have been made on the model.

2.8 Summary

This chapter has reviewed several technology acceptance models (TAM, TRA, TPB and DTPB) to help understand usage and behavior intention of learners to use electronic resources. The models (TRA, TPB and DTPB) were selected given that they use behavioural intention to predict usage of a System by a user by focusing on determinants such as social influences, facilitating

conditions, perceived behavioural control, efficacy and beliefs which are not found in TAM. These constructs are drawn from the innovation characteristics literature and were correspondingly useful in determining learners‟ behavioural intention to use electronic resources in addition to TAM constructs of PU and PEOU. These three models in conjunction with TAM were used to address the following specific research questions in the survey questionnaire in Appendix 1:

QUESTION 2.5: Please indicate the extent to which you agree with the following:

- I feel that the standard of my academic work will suffer without electronic resources
- I can avoid electronic resources and still perform well in my academic work
- Given a choice, I will choose printed materials over electronic resources
- Open access journals should be promoted because they help to fight plagiarism of people‟s intellectual work since they are open to everybody
- With the advent of electronic journals and e-books, CD-ROMs are becoming unpopular among students
- A university is not worth its name without electronic resources
- There is no need to subscribe to paid journals since open access journals relevant to my field do exist

QUESTION 2.4: What is your level of electronic resources experience for the following items?

- I have Experience with the Internet.
- I have Experience with search engines e.g. Google, Altavista, yahoo etc
- I have Experience with CD-ROM
- I have Experience with website inbuilt search engines
- I have Experience with online databases
- I have Experience with navigating web links
- I have Experience with weblog

Question 3.6: How have you learned to use electronic resources?

Question 5.1: What problems do you encounter when using electronic resources?

Following extensive review of technology acceptance models, it was concluded that TAM was the most valuable and useful model for explaining and predicting user acceptance of new technologies, particularly among students in a university context. TAM was specific to use and suggested a small number of factors which account for usage intention (Taylor and Todd, 1995). Furthermore, compared with other models, TAM has advantages in parsimony, IT specificity, strong theoretical basis, and ample empirical support (Hu, Chau, Sheng and Yan, 1999). By treating an electronic resource as a technology system or information technology, and the distance learners as a computer user, TAM was applied and tested on how well it predicted user intention to use the technology, i.e. electronic resources (Koufaris, 2002).

Table 2.1 presents the research questions and how they align with variables of theoretical models used in this study.

Table 2.1: Mapping of research questions to theoretical constructs studied

Question No.	**Research question**	**Technology acceptance model attributes**	**Theoretical model**
1.	What are the attitudes and perceptions of distance learners towards electronic resources?	Perceived usefulness, perceived ease of use, user behavior, behavioural intention, beliefs, facilitating conditions, subjective norms, efficacy	TAM and TRA, TPB, DTPB
2.	What ICT competencies do distance learners have to effectively use electronic resources?	Actual system use, actual use	TAM , DTPB

3.	What is the level of use of electronic resources by distance learners?	Perceived usefulness, Attitude, subjective norms, perceived behavioural control, usage intention, usage behavior	TAM, TRA, TPB, DTPB
4.	What factors hinder the use of electronic resources by distance learners?	Intention to use, perceived ease of use, facilitating conditions	TAM ,TPB, DTPB

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

A literature review is aimed at "gaining a general familiarity with the current research conducted in a subject area" (Gravetter and Forzano, 2009, p. 588). Similarly, Nengomasha (2009, p. 51) stated that reviewing relevant literature "enables a researcher to develop a clear understanding of the research topic; establish what has already been researched on the topic and identify gaps, which the researcher's own study can fill". The literature review in this chapter is aimed at bringing the reader up to date with previous research in the area of adoption of technology and the use of electronic resources by distance learners. Most of the literature reviewed is from developed countries such as the UK and the US, and others from transitional countries such as Turkey and Iran. The literature from developing countries context mostly gathered information from the case studies of Nigeria, Botswana, Lesotho, South Africa, Uganda and Namibia, where similar studies had been carried out.

The purpose of this study was to investigate factors that influence the use and non-use of electronic resources by distance learners at the University of Namibia. Relevant empirical theoretical and empirical literature reviewed in this study are sourced from books, journals, conference proceedings, technical reports, online databases, abstracting and indexing journals as well as published and unpublished bibliographies.

The literature reviewed in this chapter is organised around the research questions - What are the attitudes and perceptions of distance learners towards electronic resources? What electronic resources are available to distance learners at UNAM? What is the level of awareness of the learners about electronic resources available in the UNAM Library? What ICT competencies do distance learners have to effectively use electronic resources? What is the level of use of electronic resources by distance learners? And what factors hinder the use of electronic resources by distance learners? The literature on key aspects of the theory and broader issues around the

research such as the digital divide, licensing of electronic resources, and intellectual property has been reviewed.

3.2 Electronic resources

The operational definition of electronic resources is discussed in chapter one, section 1.12. Besides, the Library of Congress (2008, p. 2) defines it as "any work encoded and made available for access through the use of a computer". It includes electronic data available by (1) remote access and (2) direct access (fixed media, i. e discs/disks, cassettes, cartridges). It also refers to any electronic resource, remote or direct access, which (1), the Library provides access to through official contractual, licensed, or other agreements. Electronic resources are also referred to as digital materials - materials available in a digital or electronic format, i. e CD-ROM, DVD, e-journals, and web sites (Johnson *et al*. 2012, 24) it also includes both indexes, abstracts and full-text products (Aiguoa, 2003).

3.3 Attitudes and perceptions of distance learners towards e-resources

Klobas and Clyde (2000, p. 6) define the term attitude "to refer to a person"s disposition (either favourable or unfavourable) towards an object or event, while perception refers to the way a person sees or interprets characteristics of the object or event". The literature reviewed in this section covers the first research question of this study on the attitudes and perceptions of distance learners towards electronic resources. This main question is addressed by several questions in the survey questionnaire (questions- Question 2.4: What is your level of electronic resources experience for the following items?

- I have Experience with the Internet.
- I have Experience with search engines e.g. Google, Altavista, yahoo etc
- I have Experience with CD-ROM
- I have Experience with website inbuilt search engines
- I have Experience with online databases
- I have Experience with navigating web links
- I have Experience with weblog

Question 2.5: Please indicate the extent to which you agree with the following:

- I feel that the standard of my academic work will suffer without electronic resources
- I can avoid electronic resources and still perform well in my academic work
- Given a choice, I will choose printed materials over electronic resources
- Open access journals should be promoted because they help to fight plagiarism of people‟s intellectual work since they are open to everybody
- With the advent of electronic journals and e-books, CD-ROMs are becoming unpopular among students
- A university is not worth its name without electronic resources
- There is no need to subscribe to paid journals since open access journals relevant to my field do exist

Question 3.6: How have you learned to use electronic resources?

Question 5.1: What problems do you encounter when using electronic resources?

Rehman, Hunjra, Safwan, and Ahmad (2010) are of the view that in order to enhance acceptance and increase usage of electronic resources by distance learners, there is a need to understand the attitudes of students. Tao (2008) pointed out the importance of understanding how users make decisions on selection and use of electronic resources. On the other hand, Stokes (2001 cited in Lau and Woods, 2008) indicated that learner satisfaction and acceptance in the digital environment is very important. It is therefore vital to have knowledge of the attitudes and perceptions of users towards e-resources in order to put in place interventions that would encourage them to make optimum usage of electronic resources.

According to Tao (2008), most people prefer to use electronic resources instead of traditional print. Tao (2008, p. 717) further noted that "factors that affect users‟ preferences for e-resources remain unknown". A similar concern was raised by Davis, Bagozzi and Warshaw (1989), and Ray and Day (1998) who observed that little is known about students‟ attitudes towards electronic information. These authors observed that understanding why people accept or reject computers has proven to be one of the most challenging issues in information systems (IS) research (Swanson, 1988 cited in Davis, Bagozzi and Warshaw 1989). This situation, however, might have changed 23 years later, that is, from 1989 to 2012 Equally, various scholars in the

literature have done extensive research on users‟ studies that focused on the impacts of users‟ attitudes towards IS (Davis, Bagozzi and Warshaw, 1989). Selwyn (1999, p. 130) argued that "students‟ attitudes towards computers form a fundamental basis for both participation and subsequent achievement in information technology activities".

The 21st century has brought with it a greater demand for electronic information by library patrons, especially those studying in distance mode. This paradigm shift has compelled academic libraries as custodians of information to rethink ways of providing access to library information resources to the end users, especially distance learners. The reason for this change in information services delivery is because distance learners are often neither around to talk to nor visible to librarians (Granger and Benke, 1998; Liu, 2006). They also "get their studies around job and family commitment and may need to access library resources at all time" (Unwin, Stephens, and Bolton, 1998, p. 117). The majority of distance learners are adults who live in remote areas away from the campus and have been out of the educational system for a considerable length of time. These learners lack the time to attend face-to-face classes due to the demand of work and family. However, with the help of computer technology and ICT infrastructures, distance students are now able to become "more productive in the learning process in order to achieve learning goals better" (Ma, Andersson, and Streith, 2005, p. 387). Swain and Panda (2009) observed that users‟ attitudes towards information are gradually shifting from the printed documents to electronic resources. Similarly, Christine (2007, p. 90) remarks, "students are increasingly turning to electronic resources available via the web to find information for completing their assignments". Tella, Tella, Ayeni, and Omoba (2007) also noted that students in most cases often use the Internet to access information sources.

The use of information has long been regarded as an important part of educational computing (Woodrow, 1991 cited in Selwyn, 1999). It is evident in the literature that there is a shift in students‟ preferences regarding access to information sources and the format in which the information is delivered to them. Metzger, Flanagin, and Zwarun (2003) concluded that students seem to like using the Internet for their studies, and this has had a positive impact on their academic experience.

Adogbeji and Akporhonor (2005) identified several benefits associated with the Internet that influence attitudes and perceptions towards electronic resources. These benefits include obtaining (downloading) materials relating to research work; making the choice of research easier; making it possible to send and receive research materials from colleagues that are at a distance without travelling; having quick services in sending and receiving filled-out questionnaires; making it possible to obtain peer reviews, thereby strengthening students‟ research; making access to all kinds of data and information possible; and making it possible to have up-to-date information materials. Similarly, a study by Gaba and Sethy (2010, p. 154) established that attitude of distance learners towards electronic resources was shaped by the fact that ICTs in general helped students "to present ideas and understanding to audiences; communicate with known and unknown peer groups; support knowledge building among peer groups; locate information from a wide range of online and multimedia resources to support their learning; and collaborate, enquire, interact and integrate prior knowledge with new understanding".

The advantages of electronic resources over print resources have been emphasised in the literature and include speed; ease of use; ability to search multiple files at the same time; ability to save, print and repeat searches; more frequent updating; and the ability to access information from outside the library (a particular advantage for distance learner). Some of the reasons attributed to the high usage of electronic resources were freely available access, ease of use, and currency of information (Dadzie, 2005). Wu (2005) states that those accustomed to conducting research at odd hours or searching across multiple databases with a single query find print resources constraining. A study conducted by Brier and Lebbin (1999 cited in Wu, 2005, p. 251) on evaluating title coverage of full-text online access noted that "convenience was a driving force when deciding among information retrieval options, more specifically, ease of access and speed of delivery". Clearly, students prefer to use electronic resources because of their easiness to navigate through the text and because they provide access to current information, as these are often updated frequently. Electronic resources are invaluable resources that complement print-based resources in any traditional library. Electronic resources provide access to information that might be restricted to the user because of geographical location or finances. Such electronic resources include electronic books, electronic Journal articles, newspaper, theses, dissertations,

and databases, such as Emerald, Ebscohost, and Scopus (Dhanavandan, Mohammed, and Nagarajan, 2012; Sethi and Panda, 2012). This study therefore sought to investigate among other things whether UNAM students perceived electronic resources beneficial and how such benefits influenced the use of electronic resources.

The TRA by Fishbein and Ajzen (1975 cited in Lau and Woods, 2008, p. 686) suggested, "an individual‟s behavioural intention is the strongest predictor of future behaviour". Behavioural models such the Theory of Reasoned Action (TRA); Theory of Planned Behaviour (TPB); Decomposed Theory of Planned Behaviour (DTPB); and Technology Acceptance Model (TAM), which are discussed in Chapter two (Theoretical framework) give a better understanding of distance learners‟ attitudes and perceptions towards electronic resources. Figure 3.1 gives a detailed description of the relationship between perceptions, beliefs and attitudes by adult internet users. This insight is relevant for this study due to the fact that it is assumed that those studying at distance mode are adult students. Klobas and Clyde (2000) observed that there is a clear relationship between attitude and behaviour. Similar observations were made by Ajzen and Fishbein (1980).

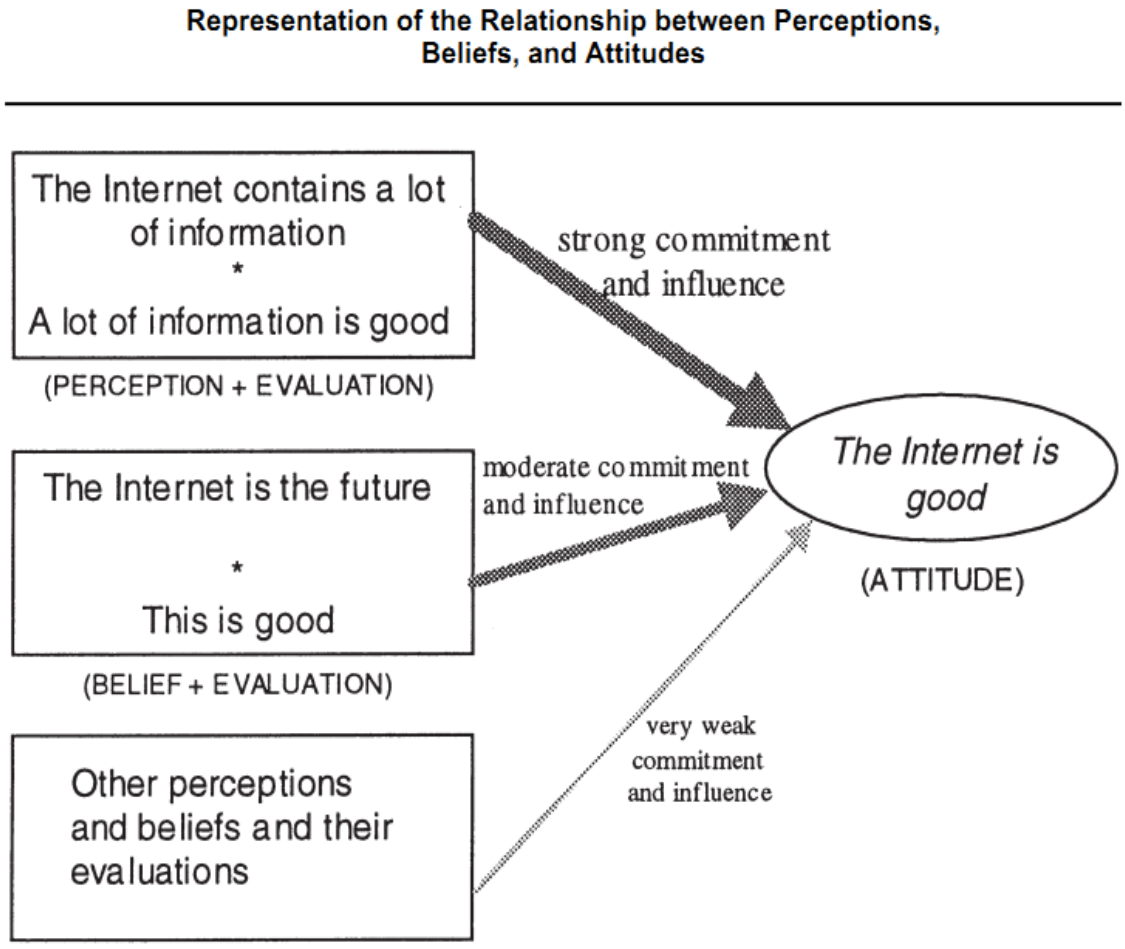

Figure 3.1: Relationship between perceptions, beliefs and attitudes (Source: Klobas and Clyde, 2000, p. 7).

Results from studies on the adoption of information systems have revealed that people often use technology if they find it useful and easy to use (Lu, Yu, Liu and Yao, 2003). A study by Lee *et al.* (2003, p. 50), which examined students‟ attitude towards the technology in distance learning using TAM established that students‟ “initial expectation affected the perceptions of, attitudes towards, and use of the system”.

3.3.1 Perceived usefulness and perceived ease of use

Perceived usefulness and perceived satisfaction is said to increase students‟ use of internet resources (Mitchell *et al.,* 2005 cited in Sahin and Shelley, 2008). Similarly Tao (2008, p. 717) found that “a system that can make users find information for their task with easy to use

functionalities is perceived useful". A further study by Leong (2007, p. 3) on marketing electronic resources to distance students‟ was revealing. Some of the statements made by students were, „the most important area to address is to increase the number of online journals available". The study also recorded such statements from users as „the number of electronic journals that are subscribed to isn‟t as big as I‟d like, especially as that‟s the only library service I use, being an overseas student‟. Self-efficacy, the belief in one‟s capacity to act in order to achieve one‟s goals, was related to a higher use of both the library and of electronic resources (Waldman, 2003).

Liu (2006, p. 584) stated that "ease of access, ease of printing, and ease of searching are among the most commonly cited reasons for preferring electronic journals". In an investigation of the extent to which graduate students in a metropolitan university setting used print and electronic resources, Liu (2006) found that 52% of respondents consulted library online information resources such as journals first when completing their assignments and essays, and 29% turned to the World Wide Web. He further noted that the characteristics of electronic resources such as convenient access and ease in searching were the main contributing factors to the selection of these resources. His findings further revealed that electronic resources were more frequently used than print, where 84% of all respondents indicated that they used them all the time.

In their study, Ma, Andersson and Streith (2005, p. 389) examined user acceptance of computer technology of student teachers, and found that among the factors that influenced their behaviour or intention to computer technology use were "computer technology experience, perceived computer technology competence, loyalty, and perceived culture of organisations". Davis, Bagozzi and Warshaw (1989, p. 983) emphasised that TAM was specifically "meant to explain computer usage behavior", and that it used the theoretical basis for TRA to specify the causal linkage between perceived usefulness and perceived ease of use, as well as the users‟ attitudes, intentions and actual computer adoption behaviour. TAM posited that two particular beliefs, perceived ease of use and perceived usefulness, were of primary relevance for computer acceptance behaviour (Davis, Bagozzi and Warshaw, 1989). Findings from a study by Selwyn (1999, p. 135) on "Students‟ attitudes towards computers in sixteen to nineteen education

institutions" revealed that students using a computer at home displayed more favourable attitudes than their non-home using peers.

Moreover, the study revealed that, using a home computer had a positive effect for both sexes where boys seemed to benefit greatly than girls". These results are consistent with the findings of Baran, Kilic, Corez, and Cagiltay (2010), where they found that students preferred to access the Internet at cafes or their homes. Contrary to both Selwyn and Baran, Kilic, Corez and Cagiltay‟s findings, Rehman, Hunjra, Safwan, and Ahmad (2010) conducted research on the students‟ attitudes towards internet applications, where they tried to identify factors influencing student internet use. The results indicated that most respondents were satisfied that internet access was more at college than at home, and most of those participants said the Internet was slow at home. The results further revealed that 88% of respondents found the Internet easier to use to access information resources than the library. Findings from Okello-Obura and Ikoja-Odongo (2010) revealed that postgraduate students preferred to access network computers from the workplace or on-campus. When distance learners access off-campus resources, they mostly "access library catalogs, bibliographic databases, and other academic resources in text, graphics, and imagery on the World Wide Web" (Green, 1998 cited in Sam, Othman, and Nordin, 2005, p. 205). One reason for these preferred choices is the benefits that come with electronic resources. Literature highlights these benefits to include faster access to electronic resources than consulting print resources, and the possibility to search multiple files at the same time. They also offer possibilities to save them for later use. Students need and expect to have access to library resources around the clock. Students have a stronger preference to use full-text resources at a time that suits them best (Ray and Day, 1998; Unwin, Stephens and Bolton, 1998; Leong, 2007).

Similarly, Tao (2008) extended TAM to examine the role of two aspects of e-resource characteristics, namely information quality and system quality, in predicting public health students‟ intentions to use e-resources for completing research paper assignments. He found that "perceived usefulness and perceived ease of use fully mediated the impact that information quality and system quality had on behaviour intention" (Tao, 2008, p. 717). In his findings, Tao (2008) indicated that 73% of students used e-resources to finish their paper assignments, and among the popular e-resources used were online databases, the Internet and electronic journals.

To make effective use of electronic resources, users also require relevant skills to conduct proper searches. For instance, they need to know how to operate the library OPAC for effective information retrieval. They also require computer skills to operate and retrieve information from the Internet. They need information literacy skills to effectively evaluate and make a proper judgment of the resources retrieved. Without all these skills, they would need the assistance of the reference librarian to make effective use of electronic resources. Authors such as Umoru-Onuka (2002) observed that the use of audiovisual and electronic resources was affected by their ability and ease of access. Access, on the other hand, was affected by factors such as cost and power supply (Aramide and Bolarinwa, 2010). Their study revealed "perceived ease of use had a positive relationship with the use of audiovisual and electronic resources, while there was a negative relationship between perceived usefulness and use of audiovisual and electronic resources" (Aramide and Bolarinwa, 2010, p. 9).

3.4 ICT skills and competencies

In an effort to find out the level of adoption of ICTs and use of electronic resources by students at UNAM the researcher probed issues bordering on skills required and actual use of available ICTs. Literature reviewed in this section was addressed by several questions in the survey questionnaire (questions -Question 3.1: Do you have a personal computer/laptop? Question 3.2: At which level did you learn to use a computer? Question 3.3: What is your experience with computer use? Question 3.4: Select the number of computer skills/packages that you have. *?* Question 3.5: Have you ever received any training in the programmes listed below? Question 3.6: How have you learned to use electronic resources? Question 3.7: How do you perceive your level of information skills? Question 3.8: What is your level of Information and communications technology (ICT) skills?) in Appendix 1.

Libraries are regarded as custodians of information sources, both in print and electronic. These information sources include books, web documents, videos, audio, electronic texts, to mention but a few. Having vast resources which are not utilised becomes costly for the library. For the library, this means that many subscription fees are paid for the renewal of electronic resources which are not used. Fourie and Bothma (2005) suggested that people should be made aware of

the existence of these sources, when and how to use them, and this can only be achieved by ensuring they are equipped with relevant information retrieval skills.

Okello-Obura and Ikoja-Odongo (2010, p. 3-4) aver that "the ability to find and retrieve information effectively is a transferable skill for enabling the positive and successful use of electronic resources by students while they are at university, as well as in their future lives". Furthermore, Okello-Obura and Ikoja-Odongo (2010, p. 3-4) emphasise that, "an adequate knowledge of computers and retrieval techniques is desirable to search the electronic resources effectively". It is noted in the literature that distance learners often do not have prior experiences with technology, let alone knowledge on how to make use of electronic resources. Besides, they enter the University for the first time with no experience with the Internet and very little knowledge of information technology generally (Arif, 2001 cited in Sahin and Shelley, 2008). Cooper and Dempsey (1998, p. 42) observed that many "distance learning students possessed limited experience with library research and were unfamiliar with electronic resources" as opposed to full-timers who were "likely to possess significant experience with library research and familiarity with electronic resources". A similar observation was made by Nicholson and Eva (2011), and this could only mean that unfamiliarity and lack of experience with electronic resources resulted in lower and ultimately limited usage of the resources.

Agarwal and Prasad (1999) hypothesised that the level of education was positively correlated with ease of use and usefulness beliefs about an information technology innovation. They pointed out that researchers such as Levin and Gordon (1989), and Harrison and Rainer (1992) established a relationship between experiences with computing technology. Past experience does not necessarily mean that a person will accept new information technologies (Agarwal and Prasad, 1999). Consequently, experience has a greater impact on the usage of electronic resources. In this regard, this current study sought to find out whether students had the experience in the use of electronic resources and whether experience was really a predictor of the use of electronic resources by UNAM distance students.

Adogbeji and Akporhonor (2005, p. 17) argued that ICT in academic work "has become a valuable tool for research and studies". They further noted that the Internet has made both "work and studies easier for the student in aiding them to search for reliable information on the

Internet". Metzger, Flanagin and Zwarun (2003, p. 274) maintained that "although many students use the Internet for their schoolwork, they often do so without formal help or training. This situation has important implications for the quality of work that students are able to produce based on their Internet use". Findings from a study by Adogbeji and Akporhonor (2005, p. 17) on the „impact of ICT (Internet) on research and studies at Delta State University students in Abraka, Nigeria" revealed that 72% of them had prior knowledge of how to use the Internet, and 27% did not have prior knowledge of the Internet. One could argue that the Internet is a powerful tool that facilitates access to electronic resources. In as much as students need experience in the use of electronic resources, prior knowledge of use of the Internet is crucial.

Admittedly, ICT skills are a critical component in electronic resources use by students (Chaputula, 2011). According to Savolainen (2002, p. 211) the "Internet places new demands on people"s competencies in everyday information seeking". Students need skills for successful use of electronic resources (Ray and Day, 1998). Findings from a study on „Off-campus adult learners" levels of library anxiety as a predictor of attitudes towards the Internet" by Collins and Veal (2004, p. 5) indicated, "off-campus adult learners" perceptions of their information retrieval skills impacted their anxiety levels while utilizing library and internet resources". In other words, if adult learners were not confident in their skills to retrieve relevant information, this would result in low usage of electronic resources. Mellon (1986) theorised that students were often anxious, and their self-perception was that they lacked the necessary skills to use library print and electronic resources. On the other hand, Oladokun and Aina (2009) found contradicting results to what was theorised by Mellon. They noted that lack of skills among the students at University of Botswana "appeared not to be a problem for the majority of respondents, many of whom considered their skills to have improved in computing and information skills as part of their programme" (Oladokun and Aina, 2009, p. 48). According Gaba and Sethy (2010, p. 148), learners" perceptions and attitudes towards ICTs in the Open Distance Learning system varied from individual to individual. This variation depended on factors that were of "geographical, cultural, educational, and contextual nature". They further noted that Learners drew attention to the fact that they needed more experience on using search engines; wanted more web creation skills with regard to creating tables, frames, forms and scripts; and needed to do more hands on tasks. Some learners were not able to judge what materials were relevant for their course, and

this may be because a few learners were completely new to the use of ICTs and were much comfortable with print and text only (Gaba and Sethy, 2010, p. 148).

According to Enakrire and Onyenania (2007, p. 24), "many students in Africa at various levels of education are unfamiliar with a variety of information sources and services within and outside the library". A case in point is that of Nigeria, where researchers such as Ashcroft and Watts (2005, p. 10) characterised user education "as uncoordinated, purely introductory and non-examinable". In order for a user to confidently say they are skilled in the use of ICTs technologies they should be able to understand the range of "choices of media and formats in which information is provided". Equally they need to be library literate to be able to "sieve through the information and give it context in their pursuit of knowledge" (Bawden, 2001, p. 224). The emerging information society demands that users should have the ability to identify, locate, evaluate, and apply information (Enakrire and Onyenania, 2007). A user needs relevant skills to operate a variety of computer application packages. Lack of information retrieval skills has been reported as a barrier to using electronic resources (Mawindo and Hoskins, 2008) as is the lack of computer literacy (Ray and Day, 1998). Dutton (1990 cited in Ray and Day, 1998) pointed out that the skills required to maximise the potential of electronic resources are greater than those required for searching printed sources.

An empirical study conducted by Munro *et al.* (1997 cited in Savolainen, 2002) revealed that an individual‟s confidence in his or her ability to use a computer is a strong predictor of the person‟s actual ability. Self-efficacy was found to be significantly related to breadth, depth and finesse of computer use. According to Martey (2004, p. 18), there are a number of good things libraries can do to assist distance learners in terms of equipping them with the relevant ICT and information literacy skills, creating awareness of resources for optimum usage, providing access to internet resources, and in many other ways. All these issues are pivotal in addressing issues of ICT skills and competencies. Among the things that libraries can do for distance learners with the available ICT facilities are:

- Teaching distance learners how to access and retrieve information on the Internet

- Arranging possible library talk and orientation for newly enrolled distance learners so that they are made aware of the available information, be it in print or electronic resources
- Teaching distance learners to evaluate the information they obtain from the Net
- Providing distance learners with links to sites where relevant information can be accessed
- Providing distance learners with IDs and passwords to enable them to access and retrieve quality information from academic databases

3.4.1 Skills training needs

According to Kavulya (2007, p. 308-309), "libraries in the Sub-Saharan region are well placed to provide training to various categories of people at different levels so as to empower them with skills to access and exploit electronic resources". The findings of Collins and Veal (2004, p. 5) also point out that in order to elevate adult learners" perceptions regarding their competencies, libraries should provide "tutorials about accessing databases and hands-on computer instruction". When Leong (2007) interviewed students at University of New England (UNE) regarding clarity of instructions in library guides on how to use databases, some of the comments raised by the students were that they "feel the instructions need to be more basic and that interactive systems needed to be implemented" (Leong, 2007, p. 81). It was also proposed by Martey (2004, p. 16) that distance students should be taught "how to use the Internet meaningfully so that they do not spend too much time and money searching the Internet". Sheikhshoaei and Oloumi (2011, p. 376) concluded, "the organisation has a potential role in providing the needed IT, the training of employees in the IT in use and also in the updating/upgrading of their skills".

3.5 Level of use of electronic resources

Literature reviewed in this section address research question five on level of use of electronic resources by distance learner. This question is addressed by several questions in the survey questionnaire (questions- QUESTION 4.1: Do you have access to a networked computer? QUESTION 4.2: Which of the following sources do you use most for your research and assignments? QUESTION 4.3: Which of the following format do you mostly prefer using for searching for information for research and assignment? QUESTION 4.4: For what purpose do

you use electronic resources? QUESTION 4.5: What are your reasons for using choosing either to use or not to use electronic QUESTION 4.6: How do you look for relevant information resources on the Internet? QUESTION 4.7: Which of the following are your most sources of information? QUESTION 4.8: How often do you use electronic resources?) in Appendix 1.

As the world population grows, so does distance learning and the use of ICTs for development. Libraries across the globe are embracing ICT in providing access to library resources to their patrons (Mutshewa and Rao, 2000). Literature reveals, "ICT use in education, including distance learning, can be described as a major breakthrough for learning and instruction" (Katz, 2002, p. 5). The use of the Internet in education has been praised by authors such as Rehman, Hunjra, Safwan and Ahmad (2010) to be a very important tool for learning especially by distance learners. Graham (2003 cited in Sethi and Panda, 2012, p. 4) points out that electronic resources are the "mines of information that are explored through modern ICT devices and can be accessed simultaneously from infinite points by a great number of audiences". It is therefore important to understand students‟ level of use of electronic resources in order to excel academically. This study therefore investigated students‟ level of use of technology in relation to their intention to use electronic resources. Therefore, the use of e-resources is fast becoming popular and a necessity among distance learners worldwide. This trend is not just visible in developed countries but also in developing countries such as Ghana, Botswana, Nigeria, Malaysia, and Uganda, just to mention a few (Mutshewa and Rao, 2000; Martey, 2004).

Oulanov and Pajarillo (2001, p. 86) evaluated the usability of the City University of New York (CUNY) and library services utilising a user perception factor. They included five criteria based on the SUMI methods developed at the University College at Cork, Ireland. The criteria were as follows:

1. Affect
2. Efficiency
3. Learnability
4. Helpfulness
5. Control

The findings of the authors revealed that effort is a usability criterion that scored lower than others, and usability components – including effect, adaptability, control, measure of effectiveness, and retrieval features – were highly rated by users.

3.5.1 Use of electronic resources

Off-campus access to electronic resources is crucial not only for full-time learners but for distance students as well (Leong, 2007). Electronic resources offer various opportunities to students (Ray and Day, 1998). Students often visit the library for various reasons, and among these reasons are doing research on specific topics; doing assignments; asking a librarian how to browse current journals; copying articles that interest the student; having access to databases; and looking up reference materials (Aoki and Pogroszewski, 1998). Electronic resources mostly needed by distance learners for their academic purpose are available on the Internet (Thanuskodi, 2010) and in online journals and databases. This is evident from the findings by Dhanavandan, Mohammed and Nagarajan (2012) who concluded that 38 (44%) of the students used e-resources for studying, and 14 (16%) of users used them for updating their knowledge. A study by Aramide and Bolarinwa (2010) also revealed that distance students regularly used audiovisuals and electronic resources. They used them for carrying out their assignments.

Dadzie (2005) conducted a study on „electronic resources: access and usage". The "study found that usage of some internet resources were very high, whilst the use of scholarly databases was quite low. The low patronage was attributed to inadequate information about the existence of these library resources" (Dadzie, 2005, p. 290). Dadzie"s findings are concerning especially with regard to UNAM since the University subscribes to various online databases such as EBSCO host, Emerald, SAE publication, and HINARI, just to mention a few, and at quite exorbitant subscription fees which therefore need to be used. It is concerning that if students do not use these databases, then many of the resources go to waste. The study therefore hoped to find out whether students were aware of these resources and whether they used them at all.

There are however factors that help motivate students to use the electronic resources. Tao (2008) posits that in order to enhance acceptance and increase usage of e-resources, it is important to understand how users make decisions on selection and use of the e-resources. There are many

factors that influence students‟ attitudes towards the use of electronic resources. One of these factors include the “access to open access journals and other resources” (Okello-Obura and Ikoja-Odongo, 2010, p. 4). Several theoretical frameworks and models have been employed to investigate user acceptance and usage behaviour of emerging information technologies (Hu, Chau, Sheng and Yan, 1999; Venkatesh, 2000). The TAM, TRA, TPB and DTPB models discussed in Chapter two have been used to explain and predict the use of a technology by students and non-students (Taylor and Todd, 1995; Agarwal and Prasad, 1999 and Hu, Chau, Sheng and Yan, 1999). A study by Liu (2006) investigated the extent to which graduate students in a metropolitan university setting used print and electronic resources. His findings revealed that 52% used library online information resources such as journals. The results also outlined factors that drove users to using electronic resources such as convenient access and ease of searching. It is evident from the literature that many students still opted to use electronic resource over print (Ray and Day, 1998). A study by Dhanavandan, Mohammed and Nagarajan (2012) further revealed that 21% of the users preferred both type of format (print and electronic resources) however, the majority of the users 50 (42%) indicated that they preferred a print version of resources for reading purpose and for their convenience.

A summary of major findings of the study by Sethi and Panda (2012, p. 4) disclosed that about 59 (92%) of the respondents preferred to use e-resources compared to print documents. About 46 (72%) used e-resources to keep themselves up-to-date on the subject; 41 (64%) used them to complete assignments and seminar presentations. The results further unearthed that 43 (67%) used e-journals more frequently compared to other e-resources; 33 (52%) preferred to use their respective department laboratory instead of the 28 (44%) who preferred to use the library. The study further revealed that 16 (25%) of the respondents used e-resources frequently two to three times in a week. From the Turkish perspective a study by (Karasozen *et al.*, 2007, in Atakan, 2006) found a strong connection between the electronic journal usage and the research activities

Nicholson and Eva (2011) also noted that it was up to faculties to encourage their students to make use of library resources for their coursework. According to Ray and Day (1998), those students who enrolled at university often had higher expectations about the abilities of electronic resources because some believed assignments were written by just clicking a button on the Internet; this was however not the case. Results from a study conducted by Dhanavandan,

Mohammed and Nagarajan (2012) revealed that 24 (23%) respondents indicated that they had at least two years‟ experience in using e-resources. This could be attributed to the fact that during first-year level at the University, most of the students were still being acquainted and familiarised with various types of electronic resources. For the scope of this study, the focus was on students in their second, third and fourth year of studies. The study also focused on postgraduate students because as mentioned in Chapter 1, it was assumed that the students were familiar with the electronic resources subscribed to by UNAM. Mutula (2005) noted that there was a need to educate people on the potential benefits of ICTs and assist them to change their attitudes because one cannot assume that students who are quite far in their academic year are more familiar with the resources and technologies. Mutula (2005) advocates the need to train and educate students on the use of various technologies.

3.5.2 Experience with technology

Mutula (2004, citing Lwehabura, 1999) argued that user education in African universities is not comprehensive enough for the required skills. If students are not confident with using computers, they will turn to print resources that they are familiar with, even if the library spends its budget on subscribing to and acquiring electronic resources and information technologies.

The level of access to the Internet and digital learning materials in Africa is believed to be generally low (Schonwetter and Ncube, 2011). If libraries wish to attain optimum usage of their electronic resources, it is evident from the suggestions provided in the literature that they should create awareness of these resources and also impart the necessary skills (Leong, 2007). Previous experience of using technology is vital if students are to navigate their way through the maze of information across the Internet and databases provided by the library. Hargittai (2002 cited in Fourie and Bothma, 2005) found a correlation between experience with technology and online skills.

Kripanont‟s (2007) study on predictors of a user‟s behaviour in adopting or using a specific system found experiences, voluntariness, gender and age, and cultural aspects as important factors influencing use. Ma, Andersson and Streith (2005) found that determinants such as attitude, subjective norms and perceived usefulness and perceived ease of use are useful

predictors of an individual user‟s intention to use a computer technology. However several challenges must be overcome by libraries and users of technologies to effectively make use of electronic resources. Libraries for example face the challenge of having to provide an information service to a geographically dispersed audience.

3.6 Factors hindering use of electronic resources

Literature reviewed in this section on factors hindering the use of electronic resources address research question 6 of this study. This question is addressed by several questions in the survey questionnaire (questions-QUESTION 5.1: What factors hinder you from accessing electronic resources? QUESTION 5.2: What problems do you encounter when using electronic resources? QUESTION 5.3: Which of the problems on the right-hand side have you encountered while seeking information?) in Appendix 1.

Chaputula (2011) found that ICT infrastructure at Mzuzu University in Malawi was poor, though the adoption and use of ICTs were high among students. Nevertheless, there were obstacles that hindered students from accessing electronic resources such as poor network infrastructure, limited number of computers, high cost of internet access, persistent power outages, and the lack of relevant ICT skills, among others.

It is also worth noting that the findings of Chaputula (2011) are consistent with summaries of challenges faced by African universities that are highlighted by Enakrire and Onyenania (2007), which include among others:

- Inadequate information infrastructures
- Energy/electricity power problem
- Copyright laws
- Poor network coverage (neglect of rural areas)
- Poor quality of ICTs infrastructure
- Information illiteracy among Africans
- Digital divide and lack of information policy in Africa

In his review of the current state of ICT application for information provision in Nigerian university libraries, Okiy (2005, p. 311) identified several obstacles to effective application of ICT that included "inadequate funding, inadequate electricity supply, shortage of component manpower for operation and maintenance of ICT facilities, inadequate ICT facilities and low level of computer literacy among Nigerians".

Limited access to ICT infrastructure hampers effective use of electronic resources. Besides, there are several factors that would hamper a student from effectively using electronic resources. Statements made by students in a study conducted by Christine (2007) on distance learners‟ attitudes and perceptions towards resources and services offered by university libraries in the UK and Ireland, were telling. One student noted, "library access is a significant issue", and the issue of being far from the university is of concern (Christine, 2007, p. 91). One of the major issues that surfaced from the students‟ responses was that which concerned distance and access to library and information resources. Martey (2004, p. 16) indicated that in Ghana, ICT based services in libraries and distance education was slow for various reasons such as high cost of information communication infrastructure and lack of technical expertise. Similarly Enakrire and Onyenania (2007) outlined the following challenges as hampering access to electronic resources:

- Financial constraints
- Lack of formal training on how to browse the Internet
- Little or lack of knowledge of websites/search engines in searching for information on the Internet
- Slow speed of the students in typing
- Disinterestedness (lack of personal interest) on the part of some of the students
- Lack of knowledge on how to use the computer effectively
- Lack of time in searching for information on the Internet (Adogbeji and Akporhonor, 2005 p. 17).

Dadzie (2005, p. 295) in a study on the problems users had with accessing electronic resources found that "33% indicated inadequate PCs; 28% indicated lack of information about how to use electronic resources; and 16% indicated lack of time to acquire skills needed to use resources". Similar findings were revealed in a study by Ray and Day (1998, p. 10) on students‟ attitudes

towards electronic resources, where they found that majority (16%) of students noted that using electronic resources was „time-consuming", and 11% said that there was „too much information retrieved" and „there was limited access to a computer terminal". Distance learners at the Extra-Mural Studies, Maseru, Lesotho experienced uneasy access to on-campus library and information sources and services (Boadi and Letsolo, 2004), and they often relied on sources from colleagues, personal collections, co-workers and family members. They further noted that electronic resources were not necessarily the best sources of information in meeting their needs.

There are other broader issues such as the digital divide, licensing of electronic resources, and intellectual property that hamper adequate access to electronic resources. These issues are briefly discussed below in attempt to highlight external factors hindering the effective use of electronic resources by distance learners.

3.7 Digital divide

Information is increasingly being produced in digital format, and developments in communication technologies make it possible for libraries to improve access for those disadvantaged by distance or economic circumstances. However, technology also has the potential to further divide society into the information-haves and the information-have-nots. Various definitions of the digital divide have been coined in literature. Fourie and Bothma (2005) point out that the digital divide is an issue of concern, as it results in the exclusion of certain sectors of the population from the power and economical benefits. African countries in the sub-Sahara region are believed to be some of the most affected by digital divide and this situation is exacerbated by political, economic, and social problems (Gebremichael and Jackson, 2006). The digital divide has been attributed also to information illiteracy, a lack of resources, prohibitive information policies or lack of internal information infrastructures (Gebremichael and Jackson, 2006).

Kasusse (2005, p. 151) remarked that "the digital divide in sub-Saharan Africa is also a mental divide, defined by illiteracy, lack of command of English and feelings of unease and unfamiliarity with these information technologies". A study on the digital divide in South Africa revealed that the country is characterised by disparities such as a wealthy educated minority who

have access to technology, and a disadvantaged majority, which results in a growing digital divide (Kajee and Balfour, 2011, p. 188). A study by Mun-cho and Jong-Kil (2001 cited in Aqili and Moghaddam, 2008 p. 228) signifies three stages of the digital divide: information accessibility, information utilisation, and information receptiveness. Cullen (2001, p. 311) states that the digital divide has been applied to the "gap that exists in most countries between those with ready access to the tools of information and communications technologies, and the knowledge that they provide access to, and those without such access or skills". Webopedia (2007 cited in Aqili and Moghaddam, 2008, p. 228) defined the digital divide as the "discrepancy between people who have access to and the resources to use new information and communication tools, such as the Internet, and people who do not have the resources and access to the technology".

The Technology Policy as noted by Shirley (2000, para. 1) states that "the challenge of the digital divide goes to the heart of the mission of libraries to provide equitable access to information for all-regardless of the information format". Salinas (2003, p. 132) consequently defines digital divide as:

> that disparity between individuals and/or communities who can use electronic information and communication tools, such as the Internet, to better the quality of their lives and those who cannot.

It is the "gap in opportunities experienced by those with limited accessibility to technology especially, the Internet" (Chakravarty and Singh, 2005, 57).

3.7.1 Causes of the digital divide

There are many causes of the digital divide, which include – but are not limited to – "inadequate information infrastructure, high cost of access, appropriate or weak policy regimes, inefficiency in the provision of telecommunication networks, language divides, and lack of locally created content" Mutula (2004 cited in Enakrire and Onyenania, 2007, p. 24-25). Similarly, Chaputula (2011) noted that socio-economic factors are probably the key factor behind the digital divide, although geographical factors, education, gender and disabilities also come into play. Salinas (2003) noted four factors that contribute to the disparity between those who have access to

technology and those who do not. These factors include access to the technology (hardware and software); skills to use the technology; relevant content; and becoming information fluent in today"s society. Mutula (2005, p. 125) pointed out that:

> Though there are several technology-related causes of the digital divide in sub-Saharan Africa such as inadequate infrastructure, high cost of access, inappropriate or weak policy regimes and inefficient provision of telecommunication network, most countries suffer largely from people-related issues that have not adequately been addressed.

Gulati (2008) presented an overview of the educational developments in open, distance, and technology-facilitated learning that aimed to reach the educationally deprived populations of the world. His findings also identified challenges developing countries face when making learning accessible to students by using Internet technologies. These challenges include „„the lack of educational and technology infrastructures, lack of trained teachers, negative attitudes towards distance learning, social and cultural restrictions imposed on girls and women, and inappropriate policy and funding decisions" (Gulati, 2008, p. 12).

3.7.2 Addressing the digital divide phenomenon

Cullen (2001) cautions that there are no quick or easy solutions to the problem of the digital divide, either within nations or between nations. One reason for this, he noted, was because of the vast difference in financial capabilities of nations to attract multinational computer and telecom giants. Salinas (2003) also noted that approaches taken to diminish the digital divide are not a job that can be done single-handedly; it is a collaborative initiative. In the context of libraries, Salinas (2003, p. 133) pointed out that:

> Libraries have established campaigns and programs to address the needs of illiterate users, of non-English speaking users, of rural or distant users, and librarians need to address the barriers that keep certain sectors for the library community from gaining the benefits that digital technologies offer.

On a lighter note, Chakravarty and Singh (2005, p. 57) assure that "digital divide can be bridged by facilitating access to scholarly e-resources to the people of developing and underdeveloped countries". It is believed that librarians can play a vital role in making information accessible, bridging the digital divide or, at least, diminishing it via their information services. These can be achieved through reference, collection building, inter-library loan, selective dissemination of information (SDI), current awareness services (CAS), digital libraries, and resource sharing. Chakravarty and Singh (2005, p. 57) advise that:

> One important aspect that must be taken care of while bridging the digital divide is to ensure that all parts of the country get the access to e-resources irrespective of their geographic location in it. This will be a significant step towards bridging the "Intra-Digital Divide.

Aqili and Moghaddam (2008) argued that there is a need for librarians to train their patrons in modern information retrieval strategies, particularly in the use of the Internet, World Wide Web, electronic databases and many more. Not only that, they also need to equip themselves with good online information databases and other electronic resources. In so doing, this is believed to provide patrons with more access to information, communication and technologies in order to bridge this digital divide gap (Agili and Moghaddam, 2008).

For both developing and developed nations to address the digital divide, Cullen (2001) points out that they are encouraged to collaborate with governments, donor organisations and non-governmental organisations (NGOs). Not only that, transfer of knowledge from developed nations to developing nations is also encouraged, and a call to renegotiate existing global telecommunications agreements. Moreover, Cullen (2001, p. 318) underscores that the following measures are needed:

- funds to train all new teachers in the effective use of IT
- funding a community technology centre in low-income rural and urban areas
- subsidies to accelerate private sector extensions of broadband networks in underserved communities

Salinas (2003) also adds that issues of information retrieval skills, computer skills, and literacy skills need to be addressed. Mutula (2005) asserts that for sub-Saharan nations to bridge the digital divide, multi-pronged approaches are needed. These would include among others borrowing best practices from around the world which are practicable and applicable to sub-Saharan Africa"s perspective. Salinas (2003, p. 135) submits:

> it is not enough for people to know how to navigate the web, they should be able to apply those navigation skills to find a better job, to be better consumers, and most importantly to continue learning new things while being able to simultaneously evaluate critically the information.

3.8 Licensing of electronic resources

Many libraries" electronic products including electronic resources are licensed. A library has access to licensed content only for as long as it maintains and pays for a subscription. Use of a licensed database is governed by contract, however, it can contain terms that limit or even override typical copyright protection. Licenses, by definition, provide merely temporary access (Wu, 2005, p. 242-243).

In his study, Horava (2005, p. 9) highlights:

> Academic institutions have articulated policies regarding the use of computer facilities and the restrictions that are imposed. Such restrictions refer to security issues, unethical and illegal uses, computer etiquette, and the obligation of the institution and the individual. Libraries have adopted access as a means of balancing individual rights with the library"s mission to provide open access to information to all its patrons.

In an effort to develop appropriate policies for use, libraries are also encouraged to negotiate the terms of use for each electronic resource because failure to do so can have severe implications throughout the institution (Brennan, Hersey, and Harper, 1997).

Various strategies for academic libraries to consider when negotiating for new license terms include a library‟s institutional policy; clearly defining the goal of license review; thinking about the location of electronic resources; considering issues of ownership; and lastly, issues of indemnification (Brennan, Hersey, and Harper, 1997). Okerson (1996) noted that from the University of Yale Library‟s point of view, five general components need to be addressed and set right before the license can be signed.

The five components as noted by Okerson are:

a) Definition of use and users must suit the academic and library environment so that members of the licensing institution can pursue their usual academic activities.
b) Legal liabilities and responsibilities must be reasonable and balanced.
c) Producers and library‟s understanding and functions of technology must be in sync.
d) Business model has to be understandable (and affordable).
e) Archiving (and perpetual access) need to be addressed.

In his study, Horava (2005) looked at the importance of incorporating licensing issues in access policies for electronic resources in research libraries. His findings revealed that few libraries (in Canada) provided key licensing information to their users and as a result, users lacked awareness of restrictions on use. In the opinion of Connolly (1999), forms of licensing can be done through consortium agreements which are discussed below.

3.8.1 Consortia effort by libraries

Olorunsola and Adeleke (2011, p. 590) reported:

> the interest in academic library consortia has recently grown and this seems to indicate the necessity for collaboration among academic libraries, especially the increasing cost of collection materials and e-resources.

According to Gulati (2004), consortia efforts are a means to achieve more for users for a lesser price. Libraries subscribe to a number of electronic databases that are pertinent to the interest of their institutions; however, these databases can be very expensive (Olorunsola and Adeleke,

2011). Consortia can, however, reduce the price per article and give librarians the "opportunities to negotiate journal prices and make co-operative deals" (Keller, 2001, p. 388). Consortia also "facilitate access to myriad of online resources that many institutions would otherwise not be able to afford on their own" (Olorunsola and Adeleke, 2011, p. 590). These efforts are therefore being realised in many countries worldwide, including India, UK, USA, Switzerland, South Africa, Nigeria, Botswana, and others.

According to Keller (2001), electronic journals are offering new opportunities for cooperative licensing. However, they "do not solve their financial problems of libraries" (Keller, 2001, p. 392). Vendors often offer packages of digitised full-text, but in some cases, tight restrictions on their use are imposed, especially in the areas of inter-library loans (Connolly, 1999). For distance learners, this means that useful resources are restricted to them because of the restrictions that come with some digitised resources deals. Often the "license sets out the terms and conditions by which the institutions acquires materials to make accessible to its clientele" (Horava, 2005, p. 9). In his opinion, Ou (2003) noted that academic libraries have the responsibility to avoid any legal and financial liability, and one way of ensuring this is adhering to the issue surrounding first sale and fair use doctrines. Academic intuitions are also called to enter into license agreements with publishers in order to provide users access to electronic information. The study by Connolly (1999) shares a case of a joint collaboration between the Scientific and Professional Publishers of the Dutch Publishers Association (PPDPA) and the cooperative body Innovation Scientific Information Supply (ISIS). They collaborated by entering into licensing agreements with publishers for electronic information as well as inter-library loans in an electronic environment.

Academic libraries are regarded as centres for research and major players in the digital information infrastructures and thus need to pay particular attention to copyright use and licensing, ownership, and how they can affect the delivery of desired information services (Ou, 2003). Intellectual property and issues surrounding copyright are discussed below.

3.9 Intellectual property

The word „copyright" and the phrase „intellectual property" are sometimes used interchangeably; however, copyright law is a part of intellectual property, the same as patent law and trademark

(Ferullo, 2004). Digital technology has led to new use of copyright works to be copied, manipulated and disseminated with minimal efforts and costs (Sheat, 2004). The nature of digital content that is available on the Internet, which can easily be replicated by users, calls for publishers, libraries and other content originators in Africa to make serious efforts to protect their work (Alemna and Cobblah, 2005). According to IFLA (2012), if reasonable access to copyright works is not maintained in the digital environment, a further barrier will be erected, which will deny access to those who cannot afford to pay. If copyright laws are applied wisely, they can have the potential of facilitating learning through ICTs; however, if they are applied too strictly, they can have the potential of restricting access to knowledge (Schonwetter and Ncube, 2011).

Schonwetter and Ncube (2011) tried to get a general understanding regarding copyright exceptions and limitation as an important balancing tool of copyright law, particularly for developing countries in Africa. As members of African Copyright and Access to Knowledge (ACA2K), they tried to examine the relationship between copyright protection and access to knowledge in relation to learning materials access in developing countries. The research was carried out in Egypt, Ghana, Kenya, Morocco, Mozambique, Senegal, South Africa and Uganda (Amstrong *et al.,* 2010 cited in Schonwetter and Ncube, 2011). The findings from the research in the aforementioned eight African countries found, "existing copyright limitations and exceptions were generally inadequate for sufficient knowledge material access" (Amstrong *et al.,* 2010 cited in Schonwetter and Ncube, 2011, p. 65). Moreover, Libraries face various challenges with regard to licensing electronic resources and databases. Among these challenges as pointed out by Charles (2011) are removal of fair use, non-disclosure agreements and prohibition and permitted uses related to intellectual property rights. According to Horava (2005) libraries have policies in place on copyright to guide library users on what they may or may not do with copyrighted materials at their disposal.

3.9.1 Strategies to deal with copyright infringement by users

In his paper, Charles (2011) stresses the need for libraries to assert users" rights to protect them from potential lawsuits. As a result of failure to properly negotiate the terms with the vendors, the library may find itself on the wrong side of the law and also see the cancellation of the

agreements and withdrawal of access to electronic resources. A whole host of restrictions can definitely affect access to relevant resources by off-campus users, especially the distance learners. In view of the above, governments in developed nations are reviewing their copyright laws following standards set by the Berne Convention. Given this, Sheat (2004) alludes that these standards were included in the Agreements of Intellectual Property Rights (AIPR) and the World Intellectual Property Organisation (WIPO) Copyright Treaty (WCT) in 1996. This treaty sets basic standards for the protection of copyright on the Internet and other digital media (Magnussen, 2002). The standards ensure stringent protection of originators" works.

Chisenga (1999 cited in Enakrire and Onyenania, 2007, p. 22) "opined that the situation regarding protection of intellectual property on the Internet in Africa is not all that good. The major reason is that in some countries like South Africa, Angola, Namibia, etc. Copyright laws are old and out of date and do not protect works produced in electronic formats". Similar sentiments are shared by Alemna and Cobblah (2005, p. 20), who noted that "a number of African countries either do not have any laws or depend on laws that are very outmoded".

Copyright exemptions that allow „fair dealings" have been developed in order to balance the rights of creators to earn a living from their hard work (Sheat, 2004). These exemptions allow libraries to share resources with their users and for users to make copies for their own use (IFLA, 2002). This exemption allows "libraries to copy a reasonable proportion of literary, dramatic and musical work or articles from periodicals, for individual or private study" (Sheat, 2004, p. 489). For library users to avoid infringing copyright laws, libraries post copyright warning signs on their Web pages or have them next to photocopiers. Alemna and Cobblah (2005, p. 20) suggest that "libraries need to develop in-house procedures to monitor the use of, and printing or downloading of materials". Contents of online journals and databases are also protected by copyright of publishers. In order for users to comply with copyright regulations, users are allowed to download, save, or print reasonable portion of text, search results, or other information from these resources solely for study or research purposes (Aiguo, 2003).

3.10 Summary

This chapter looked at empirical and theoretical literature from books, conference proceedings, journals, online databases, abstracting and indexing journals, technical reports, as well as published and unpublished bibliographies. Most of the literature reviewed in this study are derived from case studies in both developed and developing countries.

The themes discussed in this chapter reflected the research questions and the problem under investigation. These themes were attitudes and perception of distance learners, ICT skills and competencies, level of use of electronic resources and factors hindering use of electronic resources. Literature has been reviewed on intention, perceived ease of use, perceived usefulness, facilitating conditions, self-efficacy, attitude and behaviour. Most of the literature reviewed on adoption of technology emphasised the relevance of the Internet and its use by distance learners as an important tool in education. It is also evident in the literature that distance learners‟ attitudes and perceptions affect the successful use of the Internet. From the literature reviewed it emerged that ICTs have become an integral part in academic institutions and effective tools in providing access to electronic resources. Literature revealed that for learners to use electronic resources effectively they need skills, and libraries must encourage users to use these resources. Libraries also need to have knowledge of the users‟ attitudes and perceptions towards electronic resources so that they can put in place interventions to encourage optimum usage. The literature reviewed highlighted various reasons why students would use electronic resources. It is evident that not only do they use them because they are easy to use, but also for completing their assignments. Several findings have also reported factors that hinder adequate access to electronic resources by distance learners; among these are limited financial resources, lack of access, limited skill to use computers and the Internet, bandwidth, and others. The literature also covered broader issues around the research problem such as the digital divide, copyright and intellectual properties. The literature reviewed on the topic of the digital divide proved useful in guiding information providers and policymakers on those issues that need to be addressed to enhance adequate access to electronic resources by students. The literature also focused on current debates on consortia and intellectual property. Treaties such as WIPO and WCT set standards for the protection of copyright on the Internet and other digital resources. Although they might deny

access to some of the users, especially distance learners, there are exemptions for libraries to allow sharing of resources with their users without infringing on copyright laws.

The literature review has partly addressed research questions –one, three, four, five and six of the present study. Questions addressed were (What are the attitudes and perceptions of distance learners towards electronic resources? What ICT competencies do distance learners have to effectively use electronic resources? What is the level of use of electronic resources by distance learners? And, what factors hinder the use of electronic resources by distance learners?). With regards to the methodology used, the literature illustrated that similar studies have used a survey method, which was the preferred choice for the current study to investigate attitudes and technology adoption by learners at UNAM.

Building on the efforts of other scholars it was understood that behaviour and innovative studies are necessary in order to narrow the knowledge gap between what has been documented and the actual practice on the ground (Ngulube, 2003). The literature review further indicated that certain aspects seem to be lacking in the existing literature which this study helped to address and fill. Through this review of several literature studies, the researcher unearthed that various empirical and theoretical studies are available on electronic resources used by distance learners. However these studies could not identify a related study which had been conducted in Namibia to assess the technology adoption by distance learners. Another gap found in literature was that studies on technology adoption and acceptance theories used models such as (TRA, TPB and DTPB) to better understand technology adoption of employees in various work settings and not students. These models were mostly carried out on studies in developed countries, therefore finding such or similar studies conducted in African countries was quite a challenge for this study. The current study has used TAM, TRA, TPB and DTPB, to assess the use of electronic resources by distance learners at UNAM. This study is expected to build on existing knowledge gaps in existing empirical and theoretical evidence on how electronic resources can be effectively accessed and used by distance learners in Namibia.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

The previous chapter reviewed literature relevant to this study. This chapter focuses on the research methodology in conducting this study. Research methodology refers to general principles which underlie how the social world is investigated and how it can be demonstrated that the knowledge generated is valid. Kothari (2004) encourages researchers not only to know the methods and techniques of the research, but also to familiarise themselves with the methodology. Similarly, Babbie and Mouton (1998, p. 647) noted that research methodology involves "the methods, techniques, and procedures that are employed in the process of implementing the research design or research plan, as well as the underlying principles and assumptions that underlie their use". The choice of an appropriate research method, according to Hjørland (2005, p. 154), should be "determined by a combination of philosophical positions of the research vis-à-vis the research objectives, the nature of the problem to be explored, its novelty in research and the time and resources available to carry out the work".

In addition to what has already been mentioned, this chapter gives a description of the research design, methodology and data collection techniques used for this study on the use of electronic resources by distance learners at University of Namibia. The study sought to address the following research questions: What electronic resources are available to distance learners at UNAM? What are the attitudes and perceptions of distance learners towards electronic resources? What electronic resources are available to distance learners at UNAM? What is the level of awareness of the learners about electronic resources available in the UNAM Library? What ICT competencies do distance learners have to effectively use electronic resources? What is the level of use of electronic resources by distance learners? And, what factors hinder the use of electronic resources by distance learners?

This chapter is organised into eight sections: 4.2 Research paradigms; 4.3 Research approaches; 4.4 Research design; 4.5 Population of study; 4.6 Sampling procedures; 4.7 Data collection

methods and procedures; 4.8 Validity and reliability of instruments; and 4.9 Ethical considerations. The chapter ends with a summary of the chapter"s discussions.

4.2 Research paradigms

The concept of a paradigm, according to Bailey (1982), is an old one in social research, and similar definitions have emerged over the past years (Bailey, 1982; Babbie and Mouton, 1998). A paradigm provides ways in which the world makes assumptions about how things in the world work. Research paradigms, according to Babbie and Mouton (1998, p. 645), are "models or frameworks for observation and understanding, which shape both what we see and how we understand it". In other words, it is the "mental window through which the researcher views the world" (Bailey, 1982, p. 24). Ontological and epistemological aspects are concerned with how people view the world, which has a significant influence on the perceived relative importance of the aspects of reality. In the choice of research approaches, certain assumptions are made with regard to inquiries. These "philosophical assumptions consist of a stance towards the nature of reality (ontology), how the researcher knows what he or she knows (epistemology) and the methods used in the process (methodology)" (Creswell, 2007, p. 16-17). Similarly, Hughes (1980) suggests that one should justify any claim they make by pointing to the ways in which they know. Such ways, according to Hughes (1980), may include references to experimental methods, correct procedures of analysis, and others. The effectiveness of a technique or method of investigation depends on philosophical justification (Hughes, 1980).

One of the questions that a researcher needs to ask with regard to philosophical assumptions such as ontology, epistemology and methodology is (1) what is the nature of reality? (2) What is the relationship between the researcher and that being researched? And (3) what is the process of research? (Creswell, 2007, p. 17). These are questions requiring philosophical arguments and debate in which the very presuppositions of knowledge, as a general issue, are concerned (Hughes, 1980). In order to find out the use of electronic resources by distance students, it was pivotal to explain and also understand why students choose to use or not use electronic resources. Saunders, Lewis and Thornhill (2012) noted that the research philosophy one adopts contains important assumptions about the way in which one views the world. These assumptions tend to underpin one"s research strategy and the methods that one chooses as part of that strategy.

Different theoretical perspectives favour different methodological uses. Three most widely used paradigms in research are pragmatism, interpretivism and post-positivism.

4.2.1 Pragmatism

The pragmatic paradigm posits that one can "combine methodologies even within the same project as it enables us to use those research techniques which suit the research problem at hand" (Guthrie, 2010, p. 45). Thinkers of this paradigm further postulate that the most important determinant of the epistemology, ontology and axiology that one adopts is the research question (Saunders, Lewis and Thornhill, 2012). Researchers such as Ngulube, Mokwatlo, and Ndwandwe (2009), however, argue that pragmatism cannot be regarded as a paradigm because it is mostly concerned with using anything that works best in any research situation, and it falls short of the basic beliefs of mixed method research. As a result of this reasoning, the study has opted to use the post-positivism paradigm because it has its roots in multiple methods.

4.2.2 Interpretivism

The interpretivist paradigm is developed as a critique of positivism in the social sciences and is an alternative to the positivists orthodox (Bryman, 2008). Interpretivism is defined by Bryman (2008, p. 13) as "an epistemological position that requires the social scientist to grasp the subjective meaning of social action". Interpretivist positions are founded on the theoretical belief that reality is socially constructed – what we know is always negotiated within cultures, social settings, and relationship with other people (Cohen and Crabtree, 2006). From this perspective, validity or truth is grounded in a subjective reality and not in an objective reality. Bryman (2004, p. 266) posits that qualitative research is "concerned with words rather than numbers" and has strong links with interpretivism (Walsh, and Downe, 2006). It is through this paradigm that a more informed understanding of the social world is created.

Interpretive approaches rely heavily on methods such as interview and observation. The current study is largely quantitative and used the survey questionnaires to gather data from learners.

However, it also used qualitative methods such as interviews and observation as techniques to explore, describe and explain the views of library staff on matters concerning collection

development, policy, capacity building etc. The study also observed learning centres to ascertain the status of ICT establishment at the learning centres in ensuring equity and adequate access to electronic resources by learners. Appendices 4 and 5 provide more details.

The strength of the subjectivist approach is seen in the explanation of observations and in the inclusion of the context (Ammenwertha, Iller and Mansmannc, 2003). The present study however adopted the world views of post-positivist paradigm. This paradigm is based on the assumption that an "objective truth" exists which can be measured, explained and predicted" (Ammenwertha, Iller and Mansmannc, 2003, p. 238). This study aimed at explaining the use of electronic resources by distance learners at UNAM. Important to note is that interpretivism was applied in some cases to support quantitative view points and to add scope and breadth to the study.

4.2.3 Post-positivism

Post-positivism paradigm, according to Teddlie and Tashakkori (2009, p. 5), is a "revised form of positivism that addresses several of the more widely known criticisms of quantitative orientation and, yet maintains an emphasis on quantitative methods". Positivist is an approach of natural sciences which is defined by Babbie and Mouton (1998, p. 645) as a "meta-theory that is based on the key assumption that the social sciences should follow the lead of the natural sciences and model its own practices on that of the successful natural sciences". These same arguments have been echoed by Inglis and Thorpe (2012, p. 9) who noted:

> an alternative epistemological position is that of „positivism" which holds that social theory and the social science should be modelled on the natural sciences, which search for general laws.

A French philosopher, August Comte (1798-1857), gave a more simplified idea of what constitutes positivism. He noted – "knowledge would be based on observation through the five senses rather than on belief". He further believed, "society could be better studied logically and rationally" (Babbie, 2008). Other researchers in the literature associate positivism to empiricism. Hjørland (2005) highlighted two reasons why positivism is important in Library and Information

Studies. The reasons are that (1) it is important how library and information researchers approach their objects of research (e.g. by preferring quantitative and qualitative research methods), and (2) they are also important for how those objects themselves are constituted.

Using epistemological assumptions and conducting a quantitative study implies that researchers do not try to get as close as possible to the participants being studied (Creswell, 2007). The arguments by Hughes (1980); Babbie and Mouton (1998); Creswell (2007); Inglis and Thorpe (2012) all bring forth the notion that social inquiries should be objective, which requires a distance between the researcher and the research objective. Researchers are encouraged to understand what the participants are saying about a particular phenomenon, which in this case is the use of electronic resources.

In order to understand distance students‟ use of electronic resources, post-positivist approach as opposed to a positivist approach was adopted. The essence of post-positivism, according to Guthrie (2010, p. 43), is that it:

- regards knowledge as subjective and value-laden;
- views data on the relationship between the knower and the known;
- favours naturalistic, non-experimental research where the researcher does not manipulate the research setting or subjects or put data in predefined categories; and
- view knowledge as subjective, holistic and not based on cause and effect, and considers that scientific methods are social constructs.

Anti-positivists take the view that since human beings think and reflect, therefore, scientific methods are inappropriate for the study of society. Unlike objects in nature, human beings can change their behaviour if they know they are being observed (Abbott, 2010).

The post-positivist paradigm has been used in several studies in the literature which applied statistical methods to test their hypothesis. Studies such as those by Aramide and Bolarinwa (2010) attempted to test the hypothesis that „perceived ease of use and perceived usefulness will positively influence audiovisual and electronic resources use‟. Fenech (1998) tested the behavioural constructs of perceived usefulness and perceived ease of use as predictors of usage

acceptance of the World Wide Web. Ma, Andersson and Streith, (2005) tested several hypothesis relating to perceived usefulness, perceived ease of use, and subjective norms. Saade and Bahli (2005) tested several hypotheses relating to those students who perceived the system as easier to use and those students who also perceive it as being more useful. Other studies that have used post-positivism include those by Venkatesh and Davis (2000), Lee *et al.* (2003) and Sheikhshoaei and Oloumi (2011).

Although the mixed methods approach is mostly associated with pragmatism philosophical orientation, post-positivist thinkers such as Karl Popper, Thomas Kuhn, Stephen Toulmin and Paul Feyerabend "made the ideological space for the emergence of qualitative methodologies in the 1980s, and, in turn, the modern-day appearance of mixed methods research" (Giddings and Grant, 2007, p. 54). Through achievements of a better understanding of post-positivism research perspectives, qualitative and quantitative approaches have been selected for this study to investigate the perception of distance students towards the use of electronic resources. The section 4.3 that follows gives a detailed description of the research approaches which this study has adopted.

4.3 Research approaches

There are three approaches commonly used in social research in the discovery of "properties of things in the world which exhibited invariant regularities with other things". These approaches are qualitative, quantitative and mixed approaches (Hughes, 1980, p. 39; Ngulube, 2005). These are distinguished by the data they collect for analysis. According to Babbie (2008), the distinction between the three approaches in social research is in the distinction between numeral and non-numerical data. Quantitative and qualitative research methods involve very different assumptions about how research should be conducted and the role of the researcher. This study used a combination of qualitative and quantitative philosophies to enable the researcher to determine the participants‟ attitudes and behaviours towards electronic resources as well as to reap the benefits from both approaches.

Quantitative approach has a more "positivist worldview, experimental strategy of enquiry, and pre-test measures of attitudes" (Creswell, 2009, p. 17). Kothari (2004, p. 5) notes that a

quantitative approach can be "sub-classified into inferential experimental and simulation approach". This study used the inferential approach, which according to Kothari (2004), forms a database from which to infer characteristics or relationships of a population. Qualitative approaches, on the other hand, have a "constructivist worldview, ethnographic design, and observation of behaviour" (Creswell, 2009, p. 17). This study used the qualitative approach from the interpretivist point of view in order to investigate the perception of library staff and CES lecturers towards the use of electronic resources by distance students. According to Powell (1999 cited in Ngulube, 2005, p. 130), qualitative studies:

> are usually confined to in-depth studies of small groups or individuals. The data collection methods for this approach include unstructured in-depth interviewing, focus group interviews and observation. Qualitatively driven strategies include case studies, bibliographical and historical methods, grounded theory, ethnography, symbolic interactionism or semiotics, phenomenology and other interpretive practices, hermeneutics and discourse analysis.

With qualitative approach, "certain elements of symbolism, meaning, or understanding usually require a consideration of the individual‟s own perceptions and subjective apprehension" (Berg and Lune, 2012, p. 15). The belief that qualitative methods have something to add to the findings of quantitative ones underpins the post-positivist uptake of mixed methods research (Giddings and Grant, 2007). Methodological approaches such as quantitative and qualitative approaches are more than just collections of research methods and techniques. They include certain assumptions and values regarding their use under specific circumstances (Mouton, 1996). However, recognising that all methods have limitations, using a combination of quantitative and qualitative methods could neutralize the biases inherited in any single method (Creswell, 2009).

This study therefore used the multiple methods approach, adopting the world view of the post-positivists paradigm to explore and guide the development and evaluation of students‟ attitudes and perceptions towards the use of electronic resources offered by the University of Namibia library. The multiple methods approach is discussed in the subsection 4.3.1 that follows.

4.3.1 Multiple methods approach

The multiple methods approach emerged as a separate orientation during the past 20 years, and it presents an alternative to qualitative and quantitative approaches by using methods that are required to answer the research question of the study (Teddlie and Tashakkorie, 2009). According to Salehi and Golafshani (2010), researchers are finding this movement to be a new opportunity to study complex phenomenon. This approach continues to be used in the 21st century in many studies highlighted in the literature (i.e Johnson, Onwuegbuzie and Turner, 2007; Teddlie and Tashakkorie, 2009; Onwuegbuzie, Bustamante, and Nelson, 2010; Salehi and Golafshani, 2010; Guest, 2012; Luyt, 2012). Many definitions of multiple methods approach have been put forward in several studies in the literature, which all echoed multiple methods as an approach where the combination of both qualitative and quantitative approaches are used in the types of questions, research methods, data collection and analysis procedures (Ngulube, Mokwatlo and Ndwandwe, 2009; Teddlie and Tashakkorie, 2009).

The combination of quantitative and qualitative methods in information systems research as opposed to only quantitative, is an important methodology consideration (Kaplan and Duchon, 1988) and one that is noticeably infrequent in technology acceptance research. Scholars such as Giddings and Grant (2007, p. 53) argued that the pragmatism paradigm and post-positivism paradigm "have been significant influences on the modern mixed methods movement". Kaplan and Duchon, 1988) further asserted that collecting qualitative data recognises the importance of context, people and organisational issues in the use and acceptance of ICT.

The use of both qualitative and quantitative methodologies was necessary to encompass a holistic approach to the use and non-use of electronic resources by distance learners. Ngulube, P., Mokwatlo and Ndwandwe (2009, p. 105) posited:

> mixing or integrating methods can add insights and understanding that might be missed with a mono-method (qualitative or quantitative) strategy. Using MMR provides researchers with the possibility of addressing issues from a large number of perspectives. That in turn may enrich and enhance the research findings.

This approach has therefore helped in holistically answering the research questions of this study. During the process of the literature review, the researcher consulted articles which were post-positivists in their methodology. These studies used multiple methods (a combination of survey questionnaires, observation and interviews). This is consistent with the methodology approaches and methods undertaken in this study. Tao (2008) used focus group discussions and a questionnaire in his study. Sherry, Fulford, and Zhang (1998) assessed distance learners‟ satisfaction with instruction. So and Brush (2008) carried a study that considered students‟ perceptions of collaborative learning, social presence and satisfaction in a blended learning environment. Kaplan and Duchon (1988) conducted a case study that focused on combining qualitative and quantitative methods in information systems research. Other studies that focused on the use of technologies by distance students alike included those by Appleton (2006), who did a study on the perception of electronic library resources in further education, and perceived usefulness and perceived satisfaction in students‟ use of internet resources (Lee *et al.*, 2005; Mitchell *et al.*, 2005 cited in Sahin and Shelley, 2008). Furthermore, Lee *et al.* (2003) carried out a study on Technology Acceptance and Social Networking in distance learning; Boadi and Letsolo (2004) investigated information needs and information-seeking behaviour of distance learners at the Institute of Extra-Mural Studies in Lesotho; and electronic information seeking among LIS postgraduate students at Makerere University in Uganda was carried out by Okello-Obura and Ikoja-Odongo (2010), to mention but a few.

Quantitative and descriptive designs mostly use the survey method as well as a written questionnaire or formal interview to gather information on the backgrounds, behaviour, beliefs, or attitudes of a large number of people (Neuman, 2011). However, most of the studies on users‟ acceptance of technology are purely quantitative in nature. This has been confirmed by Benbasat (1984 cited in Kaplan and Duchon, 1988, p. 574-575), who noted:

> … many information systems researchers who recognize the value of qualitative methods often portray these methods either as stand-alone or as a means of exploratory research preliminary to the "real" research of generating hypotheses to be tested using experimental or statistical techniques…one result is the failure to

> discuss how qualitative methods can be combined productively with quantitative ones.

With this in mind, many researchers therefore envisage and consider the multiple methods approach not only as a possible, but in fact, a desirable way of doing social research. Various researchers would argue that the use of multiple methods and techniques is actually one of the best ways to improve the quality of research (Mouton, 1996). Scholars such as Hall and Hall (1996), and Salehi and Golafshani (2010) are also in agreement and argue more or less along the same lines. They all state that different research methods can be used together within combined research strategies. This combination of the two types of methods can maximise the strengths and minimise weaknesses in a study. These in effects can contribute immensely to the analysis and comprehension of a phenomenon. The section 4.4 that follows gives a detailed description of the research design which was employed in this study.

4.4 Research design

Various definitions of a research design have been given in prior studies (Kothari, 2004; Mouton, 1996; Punch, 2005). Put simply, a research design is a conceptual structure or a set of guidelines and instructions to be followed to measure and analyse data in order to address the research problem. A research design is needed because it yields maximal information with minimal expenditure of effort, time and money (Kothari, 2004). Multiple methods approach combines elements of both the "quantitative and qualitative orientations and requires creativity and flexibility in their construction" (Teddlie and Tashakkorie, 2009, p. 138). Salehi and Golafshani (2010, p. 188) contend that the selection of a research design of multiple methods depends on the "objectives of the study and the questions of the research". For this study, a survey design was employed, and is discussed in section 4.4.1.

4.4.1 Survey design

According to Guthrie (2010, p. 46), "for generalization about the attitudes of a population, collection of quantitative opinions using quantitative surveys is appropriate". This study adopted the survey approach to gather information on the use of electronic resources by distance students

at University of Namibia. This approach enabled the researcher to pose a series of questions to willing participants. One motivating factor for using a survey method is because, not only does it have origins in post-positivistic tradition but surveys also measure facts, attitudes, beliefs, opinions, characteristics, past or present behaviour, and expectations and knowledge through questions. This is also in line with the discussion on quantitative strategies of inquiry by Creswell (2009, p. 13) in which he highlights that survey research "provides a quantitative or numeric description of trends, attitude, or opinions of a population by studying a sample of that population".

The survey design allowed the researcher to use the TAM framework, similar to studies conducted by May (2001); (Neuman, 2003 cited in Okello-Obura and Ikoja-Odongo, 2010). This study attempted to address the attitudes and perceptions of learners by examining this issue from the TAM theoretical perspective, utilising a variety of variables. Therefore, in order to understand the development process that leads to the behavioural intention to use electronic resources, the research attempted to answer the research questions highlighted in the introductory chapter of this study. Similar studies as examined in the literature, used survey questionnaires as their basis for investigation and data collection strategies. Such examples include, but are not limited to those by Ma, Andersson and Streith (2005) who used survey instruments adopted from Hu, Chau, Sheng, and Yan, (2003) to examine users‟ acceptance of computer technology. Much of this work is theoretically motivated by the Technology Acceptance Model developed by Davis (1989) and Ray and Day (1998) in which they studied student attitudes towards electronic information resources. It was also motivated by Gaba and Sethy (2010) who studied the attitudes of distance learners towards ICTs, and also a study by Stafford (2005) on internet usage motivation of technology students enrolled in an internet-enabled distance education course. In addition, Lee *et al.* (2003) carried out a study on Technology Acceptance and Social Networking in distance learning. Similarly, Sahin and Shelley (2008) tried to understand what predicts students‟ satisfaction in online learning environments. Likewise, a study by Ojo and Olakulehin (2006) tried to assess the attitudes and perceptions of distance teaching and learning by students enrolled in the National Open University of Nigeria and of the National Teachers‟ Institute compared to their experiences at conventional universities. Alkhanak and Azmi (2011) also evaluated the information technology usage and attitudes towards online resources among the

students at the public university in Malaysia. Adding to these, is a study by Ozoemelem (2009) on the use of electronic resources by postgraduate students of the Department of Library and Information Science of Delta State University, Abraka, Nigeria.

The section 4.5 that follows gives a detailed description of the population of this study.

4.5 Population of study

Leedy and Ormrod (2005, p. 184) defined a population as "a homogenous group of individual units". This is the targeted group of interest or unit which the researcher intends to generalise the research findings on. The population for this study was selected based on the main objective of the study, which was to investigate the use of electronic resources by distance students at UNAM. The target population in this study was 3,638 comprising:

- 3,612 distance learners
- 10 centre coordinators
- 8 CES lecturers
- 3 library staff (1 subject librarian, 1 Head of Technical Services and 1 Inter-lending librarian)

While the target population were distance learners, the study however, involved the centre coordinators, lecturers and library staff to collect data (from an interpretivist line of enquiry) based on attitudes and perceptions that may predict the ICT adoption and use of electronic resources by distance learners at UNAM. The involvement of these populations was to get multiple views that have emerged from the interpretation of qualitative data.

The justification to involve lecturers was because they teach and tutor distance learners, and prepare their study materials to facilitate learning. Lecturers give importance to the thoughts of students and promote student research, assignments and study by referring them to accredited sources and informational materials in print or electronic. It was important to seek clarity from the lecturers whether they referred learners to electronic resources and which type of resources they referred them to. Lecturers were also in a better position to know whether students cite online sources or not. It was therefore pertinent to involve them since they are knowledgeable

about how well learners‟ studies are supported by electronic resources. These issues are addressed in the survey questionnaire for lecturers in Appendix 2 question; Question 2.1; QUESTION 3.1; QUESTION 3.2; QUESTION 3.3; QUESTION 3.4 and QUESTION 3.5.

The centre coordinators were also included in this study based on the fact that they deal with learners on day-to-day bases. They could provide valuable insight into how resources – particularly ICT facilities were used by geographically dispersed student population at the learning centres, the support services offered for a growing group of distance learners, competencies required to serve the needs of the learners, and the challenges facing distance learners. Some of these aspects were addressed by the following questions in the survey questionnaire for centre coordinator (see Appendix 3)- Question 2.1; Question 2.5; Question 3.1; Question 3.2; Question 3.3; and Question 5.1 and QUESTION 5.2.. Centre coordinators were also in the position to provide valuable information on the type and format requested by the learners when completing assignments or doing research. These aspects were addressed by the following question in Appendix 3; Question 4.6. This information was relevant to this study as one of the research question aimed to find out the type of resources and ICT facilities that were and are available at the centres for use by distance student, and whether learners used the resources or not. Question 4.3; Question 4.5; Question 4.7; Question 4.8 and Question 4.9 all addressed these aspects. This study was also interested to find out the role of centre coordinators in facilitating distance students‟ use of effective communication tools of the present digitized environment and how they promoted the importance of electronic resources to distance learners. This is addressed in the survey questionnaire for centre coordinators question; Question 2.5; Question 6.1 and Question 6.2.

Libraries serve as an access point to both print and electronic resources. Library staff were deemed important to be included in this study because, firstly, they are the custodians of the resources in question. Secondly, they understand the students‟ information needs and could provide very important information on collection, policy, capacity building, budget, and training needs of both staff and students. The following topics (in Appendix 4) were therefore explored; A) Attitude and Perception; B) ICT skills; C) Training; D) Budget and policy; E) Usage; F) Challenges; G) Resources and H) Awareness.

The target population of this study was 3,612 students in their 2nd, 3rd and 4th year of study at University of Namibia as well as postgraduate students. The reason for excluding first years was that at this level students are still acquainting themselves with the University technologies and do not carry out extensive research as those students in second- to- final year and post graduate students. Therefore, second- to final-year undergraduate students and postgraduate students were selected based on the assumption that (1) majority of them had undertaken orientation of the library and were familiarised with searching information on the Internet as well as through other means for their study. Basically, 2nd, 3rd, 4th-year and postgraduate students presented an appropriate target population for studying the intention to use or not to use electronic resources provided by UNAM Library. The population also included the subject librarian for distance education and the Head of Technical Services who shed more light on the operational and policy issues regarding the acquisitions of electronic information resources for the UNAM community. The sampling frame was a list of all registered distance learners at UNAM, and the list of all employed lecturers and coordinators at the Centre for External Studies. The library staff members were drawn from the list of all employees of UNAM Library. Mouton (1996. p. 134) refers to a sampling frame as a "set of all cases from which the sample will actually be selected". The sampling frame of this current study was official lists from UNAM i.e CES student records, staff employment registers (UNAM and Centre coordinators) and a list of all CES centres affiliated with UNAM.

The next section gives a detailed description of the sampling procedures that this study employed.

4.6 Sampling procedures

Saunders, Lewis, and Thornhill (2012) are of the opinion that the larger the sample size, the lower the likelihood of error in generalising the results to the population. They further point out that the choice of sample size is governed by (1) the confidence needed in the data; (2) the margin of error that can be tolerated; (3) the type of analyses that will be undertaken; and lastly, (4) the size of the total population from which the sample is being drawn.

There are many ways of calculating the sample size in the literature. Gay and Aiasian (2003, p. 113 cited in Leedy and Ormrod, 2003, p. 207) provide the following guidelines for selecting a sample size:

- "For a small population (with less than 100 people), there is little point in sampling – a survey of the entire population should be taken.
- If the population size is 500, 50% of the population should be sampled.
- If the population size is around 1,500, 20% should be sampled.
- Beyond a certain point (at about 5,000 units or more), the population size is almost irrelevant, and a sample of 400 should be adequate".

Shih *et al.* (2011, p. 5060) in contrast asserts that a method of determining the necessary sample size for a survey is based on the error the researcher is willing to accept. It is common in the social sciences to try to research a statistical effect of at least 95% confidence or an alpha of 0.05.

This is in agreement with Saunders, Lewis and Thornhill (2012) whose table of selecting sample sizes is depicted in Table 4.1.

Table 4.1: Sample sizes for different sizes of population at a 95% level of certainty (assuming data is collected from all cases in the sample)

	Margin of error			
Population	**5%**	**3%**	**2%**	**1%**
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	434	384
500	217	340	414	475
750	254	440	571	696
1 000	278	516	706	906
2 000	322	696	1091	1655
5 000	357	879	1622	3288
10 000	370	964	1936	4899
100 000	383	1056	2345	8762
1 00 00	384	1066	2395	9513
10 000 000	384	1067	2400	9595

(Source: Saunders, Lewis and Thornhill, 2012)

Table 4.2 shows the population of distance learners and relative sample sizes based on the model of Saunders, Lewis and Thornhill (2012) in Table 4.1. Based on this model from an overall target population of 3,612 a sample size of 357 (this figure lies closer to 5,000 than it is to 2,000) was derived. This sample size gave the researcher some degree of confidence that the findings would truly be fair representation of the population.

Patton (2002, p. 230 cited in Ngulube, 2005) points out that "sampling within the qualitative approach is purposive or judgmental, whereas quantitative traditions rely on probabilistic

sampling". This principle was applied in this study. To reach the sample size for individual students, random sampling technique was used. A simple random sampling technique was used to select distance learners. The population of distance learners was considered to share similar experience in the use of electronic resources. It was also assumed distance learners experience similar issues of access irrespective of the level of their study. This population was assumed to be homogenous. Simple random sampling techniques is based on the use of chance in selection, and everyone in the population has the same chance of being selected (Hall and Hall, 1996, p. 109; Gomm, 2008). Moreover, this technique is unbiased and "requires some kind of sampling frame from which people can be chosen, which lists everyone in the population of interest" (Gomm, 2008, p. 135).

A purposive sampling technique was used to sample the lecturers, library staff and the centre coordinators. This technique is designed to select a small number of sample cases that will yield the most information for a particular phenomenon (Teddlie and Tashakkorie, 2009). The choice of purposive sampling in this study was based on the fact that these respondents are experts and would provide key information that would help complement the responses collected from the distance learners and add credibility to the results of the study (Teddlie and Tashakkorie, 2009). The distribution of the samples across the different distance learning centres is provided in Table 4.2.

Table 4.2: Sampling of distance students

Centre	**Target population (N=3,612)**	**Sample size at one error of 5% =P/3612*357**
Gobabis	80	8
Katima Mulilo	166	16
Keetmanshoop	147	15
Khorixas	32	3
Oshakati	1664	164
Otjiwarongo	105	10
Rundu	249	25
Swakopmund	138	14
Tsumeb	101	10
Windhoek	930	92
Total:	**N=3,612**	**357**

As for the ten lecturers, three library staff members and ten centre coordinators staff, a census of these groups was taken as they were not many. Saunders, Lewis and Thornhill (2012, p. 666) define a census as "the collection and analysis of data from every possible cases or group member in a population". Usually, a census is used for small populations to enable the elimination of sampling errors, as well as provide data of all units of analysis in the population (Ngulube, 2005). This technique helped improve the validity of data collected for this study.

The section that follows gives a detailed description of data collection methods and procedures that were employed.

4.7 Data collection methods and procedures

Data collection methods, instruments and procedures are discussed in the subsections that follow.

4.7.1 Data collection methods

This study used triangulation of methods to collect data. In the words of Creswell and Miller (2000, p. 126) triangulation can be defined as "a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study". It includes the use of multiple methodologies and use of multiple measures of a construct (Ngulube, 2005).

4.7.2 Data collection instruments

Three instruments were employed in this study. A survey questionnaire, semi-structured interviews, and personal observation of the centres were used to collect data. The sources and kinds of data collected are reflected in Table 4.3.

Table 4.3: Type and sources of data

Study Group	**Kinds of data to be collected**	**Data collection tool**
Students (357)	Demographic information; computer skills of the respondents; attitude and perception towards e-resources; ICT skills and competencies; the level of use of electronic resources; and barriers to electronic information access and use.	Survey questionnaire
Lecturers (10)	Demographic information; computer skills of the respondents; attitude and perception towards e-resources; ICT skills and competencies; the level of use of electronic resources; and barriers to electronic information access and use.	Survey questionnaire

Library staff (3)	Demographic information; computer skills of the respondents; attitude and perception towards e-resources; ICT skills and competencies; the level of use of electronic resources; and barriers to electronic information access and use.	Semi-structured interview
Centre coordinators (10)	Demographic information; computer skills of the respondents; attitude and perception towards e-resources; ICT skills and competencies; the level of use of electronic resources; and barriers to electronic information access and use.	Survey questionnaire
Centres for External Studies (5)	Students‟ interaction with computers (searching the Internet); computer facilities; and internet connection.	Non-Participant observation

Mason (2010) indicated that 15 is the smallest number of participants for a qualitative study irrespective of the methodology according to Bertaux‟s guidelines. This study has however not adhered to Bertaux‟s guidelines. One of the reasons for this was due to geographical dispersion of the centres. The furthest centre was about 1,226 kilometres (km) away from the main campus in Windhoek. However, questionnaire for the centre coordinators were followed up by an informal discussions with some of the centre coordinators during the centre visits for observation. Lecturers were very hard to find and hardly in their offices. Some also opted to complete a questionnaire provided it was not too long because they did not have time. They were pressed for time because of teaching, research and community work.

All survey questionnaires consisted of five major sections in line with the research questions as highlighted in Chapter One. These sections are (1) demographic information; (2) computer skills of the respondents; (3) attitude and perception towards e-resources; (4) ICT skills and competencies; (5) the level of use of electronic resources; and (6) barriers to electronic information access and use. Under each section, various desired sub-questions made up of

scaled, open- and closed-ended, and yes or no (dichotomous questions) were used. Questionnaires for lecturers and centre coordinators used closed-ended question items (quantitative) and open-ended items (qualitative) in one questionnaire, and this constituted a multiple method approach of collecting data (Ngulube, 2005).

Most of the studies highlighted in the literature used measurement scales developed by either Davis (1989) concerning perceived usefulness and ease of use, the scale developed by Taylor and Todd (1995) concerning attitudes and perceived behavioural control, or a scale assessing behavioural intentions (Davis, Bagozzi, and Warshaw, 1998). The measures used to operationalise the constructs included in the investigated models were mainly adapted from relevant prior studies, with minor wording changes to tailor them to the targeted context. This study adapted some of the questions from these tools to enhance reliability and validity.

4.7.3 Data collection procedures

Prior arrangements to conduct interviews and observations of the centres were made with the Dean of Centres for External Studies and the University Librarian. All lecturers, centre coordinators and library staff were informed of the study in advance through their heads of departments. Respondents were asked to sign a declaration of consent form (see Appendix 7) and were reminded of the researcher‟s as well as their own ethical responsibility.

Prior to data collection, a letter requesting permission to conduct the study was issued (see Appendix D). A copy of the researcher‟s permission to conduct the study was attached to the questionnaires. According to Guthrie (2010, p. 16), “approval of research project is usually required first by your academic institution and if it is approved, you might need subsequent agreement from your participants”. Guthrie (2010, p. 17) further posits that by seeking permission and getting approval to carry out one‟s research

> ensures that the research is legitimate, the researcher has appropriate credentials, the research is consistent with departmental policy and potentially useful to the education system, it will not be disruptive and that it is ethical.

Data collection for the 357 distance students was collected in April, August and September 2013 during their vacations. The vacation for distance students for the academic year 2013 were as follows:

- First semester started on 1 April and ended on 6 April; it again started on 22 April 2013 and ended on 26 April 2013.
- Second semester‟s distance students‟ school vacation started on 19 August 2013 and ended on 23 August 2013; it again started on 9 September 2013 and ended on 13 September 2013.

Administering of questionnaires to students was done in three ways:

1. A self-administered survey questionnaire was handed to distance students around campus during the school vacation. This is in line with the observation of Henczel (2001, p. 77 cited in Abankwah, 2011, p. 44) who advises that delivering a questionnaire in person adds a "personal touch as well as presents an opportunity for the researcher to respond to initial questions relating to the purpose of the survey".
2. A few questionnaires were given to lecturers in advance who distributed them on behalf of the researcher in their respective classes. The questionnaires were then collected at the end of each lesson.
3. Other questionnaires were given to the CES Librarian during the vacation periods, who then distributed them to students during electronic resources training sessions. The questionnaires were then personally collected from the librarian‟s office.

Lecturers and centre coordinators‟ questionnaires were administered in the following ways:

1. A self-administered questionnaire was hand delivered to some lecturers. An electronic survey questionnaire distributed through email was also administered to those lecturers who were not found in their offices. According to Bailey (1982), some of the advantages of mailed questionnaires are that they are time and cost saving, and respondents are easily accessible. However, there are also some drawbacks to this technique. Among these problems are that many questions may remain unanswered, lack of flexibility, and a

possible low response rate (Bailey, 1982). Questionnaires that were not delivered in time were followed up with visits to the lecturers‟ offices or through a telephone enquiry. There was an option to hand deliver them as a follow-up on those who did not respond to the emailed questionnaire. This was convenient because all CES lecturers were based at the main campus where the researcher was stationed for duty.

2. Electronic questionnaires were distributed through email to all the centre coordinators who were asked to complete them electronically and email them back to the researcher. The reason for emailing the questionnaire to the centre coordinators was because of the fact that they were geographically dispersed. A follow-up was done through a telephone enquiry.

Survey questionnaires are generally good instruments for survey research. According to Hall and Hall (1996, p. 97), the social survey using questionnaires:

> is widely recognized as a standard method of collecting information. Its purpose is to generate information in a systematic fashion by presenting all informants with questions in a similar manner, and recording their responses in a methodological way. It addresses the issue of reliability of information by reducing and eliminating differences in the way in which questions are asked, and how they are presented.

Questions used in the distance students‟ survey questionnaire were used to measure perceived ease of use and perceived usefulness of electronic resources. As already pointed out, the questions were adapted from those developed and used by Davis (1993) in his study to address why users accept or reject information systems and how user acceptance is affected by system design features. Other measurement scales used in this study were adapted from a study by Venkatesh and Davis (2000) which they used to develop and test a theoretical extension of the Technology Acceptance Model (TAM) that explained perceived usefulness and usage intention in terms of social influence and cognitive instrumental processes.

Questionnaires for this study were developed with checklist and rating scales to evaluate and quantify students‟ behaviour and attitudes towards the use of electronic resources. Hart (2005) pointed out that structured questions can be used to measure attitudes using various scales. Distance learners, lecturers and centre coordinators were asked to choose between several categories, indicating various strengths of agreement and disagreement (Hannagan, 1997). Therefore, a Likert scale was used to measure attitudes, opinions, and perceptions towards the use of electronic resources by distance learners. The construction of the questionnaire followed structures from prior studies by Davis (1993), Sheikhshoaei and Oloumi (2011) and Tao (2009). Some of these studies showed how the various constructs of TAM were measured, i.e. perceived ease of use (PEOU), perceived usefulness (PU), attitude towards using a system (A) and actual current use of the system (U). The study measured attitude using a five-standard 7-point semantic differential rating scale as suggested by Ajzen and Fishbein (1980). A five-point Likert-type scale with anchors from “strongly agree” to “strongly disagree” or highly agree to highly disagree were used.

In order to get qualitative data, a semi-structured face-to-face interview was conducted with the library staff. The interviews were held in the respondents‟ offices at a time convenient to them. The interview sessions conducted by the researcher began with formal introductions where the researcher stated the purpose of the interviews and the reason why respondents were selected for interviews.

The following ethical issues informed consent from the interviewees as advised by Guthrie (2010, p. 16):

- Tell the participant the purpose of the research
- Tell them what you will do with the results
- Answer their questions about research
- Ask their permission to continue
- Respect their right to refuse to participate
- Respect their right to withdraw at any stage

All interviews were tape recorded. Scholars such as Slater (1990) recommended the use of tape recorders to capture data in its original form to enable the researcher to understand fully all the views raised. The researcher took detailed notes, which included quotable phrases, to enable the researcher to understand fully all issues raised (Abankwah, 2011).

The interview incorporated predefined, open-ended questions that would enable the researcher to probe for more information at various intervals and to seek clarification. The questions were formulated according to various categories which would provide answers to the research questions (Amis-Beukes, 2011). Qualitative data collection techniques such as face-to-face interviews and direct observations are recommended by various authors (Patton, 1990; Phellas, Bloch and Seale, 2011). In this regard, open-ended questions and probes on interviews were used in order to find out about people"s experiences, perceptions, opinions, feelings, attitudes and knowledge.

Face-to-face interviews "have the distinct advantages of enabling the researcher to establish rapport with potential participants and therefore gain their cooperation; thus such interviews yield the highest response rate" (Leedy and Ormrod, 2005, p. 184-185). Interviews are useful when informants cannot be directly observed. However, they tend to provide „indirect" information filtered through the views of the interviewee. A researcher"s "presence may result in biased responses, and not all people are equally articulate and perceptive" (Creswell, 1994, p. 150). Equally, Amis-Beukes (2011) cautions that researchers must first acquaint themselves accordingly with the interview techniques to be used so as not to compromise the validity and reliability of the study.

Semi-structured interview guides were developed for library staff to allow individual perspective responses on the subject matter. In survey research, interviews are fairly structured (Leedy and Ormrod, 2005). An observation checklist was drawn up, and the sampled CES centres were observed to determine whether there were necessary facilities in place. The researcher made use of a camera to record and capture pictures. The researcher was introduced by the centre coordinator prior to conducting the observation.

A physical observation using a predetermined checklist is recommended (Marshall and Rossman, 1999). This study therefore used predetermined checklist. Observations may be participant

(obtrusive) or non-participant (Unobstrusive). Participant observation is believed to be the best "known method of research in social science as it associates with qualitative research and entails the immersion of the observer in social setting in which she or he observes the behaviour of members of that setting and elicit the meanings they attribute to their environment and behavior" (Bryman, 2008, p. 257). This study used a non-participant observation technique to examine the library facilities available at the learning centre and the number of students using the centre (see Appendix 5). Alvesson and Karreman (2011) noted that observation can be framed around phenomena such as people, objects, processes and space. Non-participant observation was the preferred chose of method as the researcher adopted a more distant role to watch and record subjects and objects through one-way mirrors or with cameras. The researcher also took a covert approach in which participants were unaware that they were being studied. This approach proved helpful because it provides a different kind and quality of data than those gathered through self-report methods, such as surveys or interviews (Liu and Maitlis, 2010).

4.8 Data analysis

Data analysis can help a researcher to "arrive at a better understanding of the operation of social processes" (Ngulube, 2005, p. 138). It is concerned with investigating variables, the relationships between variables, and the patterns in these relationships (Mouton, 1996). It also involves identifying categories prior to coding (Liamputton and Ezzy, 2005). According to Berg and Lune (2012, p. 355), quantitative data analysis shows:

> how researchers can create a series of tally sheets to determine specific frequencies of relevant categories whilst qualitative data analysis shows how researchers can examine ideological mind sets, themes, topic, symbols, and similar phenomena, while grounding such examinations in the data.

Researchers are advised that before analysing their research data, it is wise to prepare the data. Preparing data for analysis entails cleaning it and evaluating it for "ambiguity, completeness, comprehensibility, internal consistency, relevance, and reliability" (Powell, 1997, p. 63 cited in Ngulube, 2005, p. 138). In order to find answers to the research questions and to adequately

communicate the research findings of this study, quantitative data was analysed using the SPSS for Windows™ software. The results were displayed in graphical forms (i.e. pictograms, histograms, bar charts and tables). Results were also presented in textual, tabular forms and summaries. The use of both descriptive and inferential statistics was used, as they provided the basic tools for summarizing survey data and measuring the degree of association between variables and samples. Ngulube (2005, p. 139) explained:

> two major statistical tools used in analyzing data in social science research are descriptive statistics and inferential statistics. Descriptive statistics are used to describe the characteristics of a population while inferential statistics are used to make some inferences about the characteristics of a phenomenon based on certain parameters. Inferential statistics can also be used for testing hypotheses.

The ATLAS.ti™ software was used to analyse qualitative data. The following processes suggested by Saunders, Lewis and Thornhill (2012) were followed to group data into three main types of processes:

- Summarising (condensation) of meanings
- Categorisation (grouping) of meanings
- Structuring (ordering) of meanings using narratives

All results from interviews and observations were transcribed, coded, grouped into categories, and interpreted in terms of common themes, filtering and output into the following themes:

1) Computer skills of the respondents
2) Attitude and perception towards e-resources
3) ICT skills and competencies
4) The level of use of electronic resources
5) Barriers to electronic information access and use

4.9 Validity and reliability of research instruments

Every researcher aims to produce an answer to a scientific question, and there are two concepts used in research to judge the measurement of the variable a researcher is interested in and whether an answer is good or not (Simon and Burstein, 1985). These two measures are validity and reliability. Hall and Hall (1996) cautioned that with all kinds of research, one needs to know how much value to attach to one‟s research findings. Questions to ask are whether the findings are an accurate representation of what actually exists? Are the findings valid? Scholars such as Simon and Burstein (1985), Hall and Hall (1996) and Mitchell (2005) all defined validity as the extent to which the research findings accurately represent what is really happening in the situation. A test is only valid if it measures what the researcher thinks or claims. Simon and Burstein (1985) noted that a good test is whether you can persuade other researchers that the definition is valid, and this would all depend on the purpose of the study.

Validity can be affected by poor samples, research error, poor research procedures and misleading measurements (Mitchell, 2005). Ngulube (2005, p. 135) argues that "if piece of research lacks validity then it does not add value to society‟s knowledge base". Therefore, questions of validity and reliability of survey protocols were addressed in this study. Five survey questionnaires (three lecturers and two centre coordinators) were pretested before the actual surveys and interviews. Pretesting questionnaires or interview schedules is an important tool that may be used for content validation (Ngulube, 2005). To ensure that the tests for this study were valid and reliable, all the questionnaires used in this study were given to a senior researcher, an experienced librarian and the supervisors for proofreading.

This study also adopted some research instruments designed by scholars such as Davis (1993); Hannagan (1997); Tao (2009) and Sheikhshoaei and Oloumi (2011), just to mention a few. This study made use of the approach used by Oteng-Ababio (2011) to pretest his research instruments on the students. He carried out a study on students‟ perception of distance education at University of Ghana. Oteng-Ababio (2011) indicated that questionnaires used for the study were pretested and improved before the initial study was carried out. The pre-test resulted in the modification of the student‟s survey instrument. A few questions were deleted, and some were rephrased.

Reliability, on the other hand, is an important element of validity; it is concerned with the findings of the research and relates to the credibility of the findings (Mitchell, 2005). According to Simon and Burstein (1985), a test is reliable if people get the same results in the same circumstances time after time, even when employed by different people. They further advised that in order to assess reliability of one‟s research instruments, a researcher should measure the same concept in several different ways and see if the results are the same. In other words, several surveys may repeat the same questions so that comparisons can be made between samples over time. Surveys are supposed to rate highly on reliability because each person being studied is being asked the same questions (Hall and Hall, 1996).

To ensure that the tests for this study were reliable, the researcher ensured proper documentation of the methodology. Therefore, for a test of this study to be valid, all the questionnaires used in this study were designed in English. These were used to get straightforward answers. More so, since an adequate measure must be valid, the questions used for this study were designed with the goal of achieving a high response rate and a deeper understanding of distance students‟ preferences and circumstances that affect their choice of format regarding library information resources.

4.10 Ethical considerations

Prior ethical clearance to conduct research was sought from the two institutions (University of KwaZulu-Natal and University of Namibia). This process was important because it assessed potential risks, such as physical, psychological, social and legal harm to participants in the study (Siebe, 1998 cited in Creswell, 2009). Appropriate disclaimers were visible on all research tools (questionnaires, interview guide and observation checklist). In terms of ethics, respondents were asked to voluntarily participate in the research and were free to withdraw from the research at any time without any negative or undesirable consequences to themselves. Personal details collected were not preserved, and therefore their confidentiality and responses were treated in a confidential manner.

Social sciences researchers are encouraged by Israel and Hay (2006 cited in Creswell, 2009, p. 87) to:

> protect their research participants; develop a trust with them; promote the integrity of research; guard against misconduct and impropriety that might reflect on their organisations or institutions; and cope with new challenging problem.

The answers to the questionnaires were coded before they were administered. According to Edwards and Talbot (1999 cited in Okello-Obura and Ikoja-Odongo, 2010, p. 5), a "stage of coding and classification of information must be undertaken, irrespective of the research design and methods used". This approach was used to ensure respondents‟ confidentiality, especially for qualitative data gathered through an open-ended survey questionnaire and interviews. Bailey (1982, p. 428) cautions that "it is unethical for researcher to harm anyone in the course of research, especially if it is without the person‟s knowledge and permission". Similarly, Saunders, Lewis and Thornhill (2012) posit that the general research design should not cause embarrassment, harm or any other negativity to the research population. The research purpose was explained to the targeted population prior to completing the questionnaire. A copy of the informed consent form was attached to the questionnaires. In social research, informed consent, according to Bailey (1982, p. 428), entails

> making subject fully aware of the purpose of the study, its‟ possible dangers, and the credentials of the researchers. The reader will recall that these are some of the basic elements of information contained in the covering letter or introductory statement accompanying a questionnaire.

Informed consent also has a great effect on interviews. Therefore, subjects that were interviewed were asked to sign an informed consent letter before the interview took place. An informed consent to observe the centres was sought from the centre coordinators, and their permission allowed the researcher to observe the centres.

4.11 Summary

This chapter discussed research paradigms which guided the study methodology. This was followed by a detailed description of the research design and methodology to support the

researcher‟s choice of sampling and data collection procedure. The methodology was organised and described under eight sections, namely Research paradigms; Research approaches; Research design; Population of study; Sampling procedures; Data collection methods and procedures; Validity and reliability of instruments and Ethical considerations. The chapter ends with a summary of the chapter‟s discussions. Lastly, ethical issues such as voluntary participation, consent, risk, privacy and confidentiality, and security of data were addressed in detail.

Table 4.4 summarises the research questions, sources of data, respondents and data analysis techniques.

Table 4.4: Research questions, data sources and analysis

S/No	Research question	Respondents	Source of data	Data analysis strategies
1	What is the attitude and perception of distance learners towards electronic resources?	Students, lecturers, centre coordinators, and library staff	Survey questionnaire and interview	Qualitative data will be transcribed, coded, grouped into categories, and interpreted in terms of common themes, filtering and output. Descriptive statistics will be used, and frequencies and percentages will be computed. SPSS will be used
2	What ICT competencies do distance learners possess to effectively use electronic resources?	Students, centre coordinators, and lecturers	Survey questionnaire, document analysis, and observation	Descriptive statistics will be used, and frequencies and percentages will be computed. SPSS will be used
3	What is the level of use of electronic resources by distance learners?	Students, centre coordinators, and lecturers	Survey questionnaire, document analysis, and observation	Descriptive statistics will be used, and frequencies and percentages will be computed. SPSS will be used

4	What factors inhibit the use of electronic resources by distance learners?	Students, lecturers, centre coordinators, and library staff	Survey questionnaire, document analysis, and interview	Qualitative data will be transcribed, coded, grouped into categories, and interpreted in terms of common themes, filtering and output. Descriptive statistics will be used, and frequencies and percentages will be computed. SPSS will be used.

The next chapter presents the results and interpretation of the findings.

CHAPTER FIVE

DATA ANALYSIS AND PRESENTATION

5.1 Introduction

The aim of this study was to investigate the use of electronic resources by distance learners at University of Namibia. The preceding chapter focused on a description of the research design, methodology and data collection techniques used for this study. The purpose of this Chapter on data analysis and presentation of findings is to determine and present the behaviour of respondents towards the use and non-use of electronic resources provided by the UNAM Library. In order to thoroughly assess and understand distance learners‟ behaviour towards electronic resources, this study used the Technology Acceptance Model (TAM) as the theoretical foundation to examine those factors that influenced intentions to use electronic resources provided through the UNAM main campus library. The original Technology Acceptance Model derived by Davis (1989) has been widely used to study user acceptance of new computer technologies. It has also been applied and studied in many different contexts, cultures and usage dimensions. This study therefore utilised the Technology Acceptance Model to study usage dimension of electronic resources such as web-based resources, search engines, scientific databases, UNAM website, portal and institutional depositories, i.e. Online Public Access Catalogue (OPAC).

The data presented in this chapter was obtained through the survey questionnaires from distance learners, CES coordinators and lecturers, interviews with library staff as well as data collected through observation of the CES centres. Data obtained from the survey questionnaires was coded, analysed, interpreted and presented using frequency tables, graphs and charts. Descriptive data gathered through interviews and observations are presented in this chapter in the form of figures as well as narratives and verbatim statements from the respondents. The findings from data collected through survey questionnaires, interviews and observations are discussed concurrently and integrated under different thematic areas.

While the original TAM allows one to assess acceptance and adoption of a new technology for this study, there was also a need to consider their attitudes and perceptions regarding the use of electronic resources by distance learners. The research findings are therefore presented based on the themes of this study‟s research questions. These themes are as follows:

1. Attitude and perception of distance learners towards electronic resources
2. Electronic resources available to distance learners at UNAM
3. The level of awareness of distance learners about electronic resources available in the UNAM Library
4. ICT competencies required by distance learners to effectively use electronic resources
5. The level of use of electronic resources by distance learners
6. Factors hindering the use of electronic resources by distance learners

5.2 Participants of the study

Data was gathered from 243 distance learners through a survey questionnaire. In addition, 10 lecturers who teach on distance mode and meet the learners during school vacations twice a semester, were surveyed. Additional data was gathered from three librarians responsible for providing electronic information resources and user support to distance learners. The research also gathered data through observation of the centres.

From a sample of 357 learners‟, 243 completed the survey questionnaire, thus giving a response rate of 68%. Similarly, of the ten UNAM distance learning centres, eight coordinators were surveyed, giving a response rate of 80%. All three librarians were interviewed and all ten CES lecturers were surveyed, giving a response rate of 100% respectively. Overall response rate was therefore 87% ((68+80+100+100)/4).

5.2.1 Responses from Centre Coordinators and lecturers

Centre coordinators were asked to indicate their gender, age group, qualification, years of service and the centre with which they are affiliated.

Results revealed that there were more (six, 75%) female than male (two, 25%) coordinators at the UNAM centres. Of the eight centre coordinators surveyed, the majority (six, 75%) were over

the age of 31. Only one (13%) coordinator was between the age of 20 and 30, while another one was between the age of 51 and 60.

The results also revealed that the majority (five, 63%) had obtained a bachelor‟s degree, two (25%) had a master‟s degree, and one (13%) had a postgraduate diploma. The results further found out that most (four, 50%) of the centre coordinators have been in employment for between one and ten years, three have been in employment for between 11 and 20 years, and only one has been in employment for between 21 and 30 years.

Similarly, out of the ten CES lecturers surveyed, six (60%) were male and four (40%) were female. Moreover, four (40%) were in the age category of 51 to 60 years; three (30%) were in the age category of 31 to 40 years, while another three (30%) were in the age group of 41 to 50 years respectively. Of the CES lecturers, eight (80%) had a master‟s degree, one (10%) had a PhD degree, and another one (10%) had an honours degree. The results also indicated that out of the ten CES lecturers, seven (70%) had between one and ten years of teaching experience, two (20%) had between 11 and 20 years, and only one (10%) had between 21 and 30 years of teaching experience.

5.2.2 Gender and age

Learners were asked to indicate their gender, age, year, programme of study and the distance travelled to the learning centre. The results are shown in Tables 5.1 to 5.4.

Table 5.1: Gender and age cross tabulation

(N=243)

Gender	**Gender*Age**				Total count/per cent
	21-30 yrs	**31-40 yrs**	**41-50 yrs**	**51-60 yrs**	
Male	37	46	9	1	93
	15%	19%	4%	0%	38%
Female	81	61	7	2	151
	33%	25**%**	3**%**	1**%**	62**%**
Total count/per cent	118	107	15	3	243
	48**%**	44**%**	7**%**	1**%**	100**%**

Gender composition of respondents as shown in Table 5.1 indicates that the majority 151(62%) of learners were females, while the male constituted the minority 93 (38%). This indicates that there were more female participants than male participants in this study. This could mean that women did not have equal opportunities of undertaking full-time studies like their male counterparts presumably because of their role of childbearing as well as attending to other household chores.

Distance learners are made up of different age groups and may react differently to the use of electronic resources depending on the different academic roles and changes in their lives. It is worthy of note to mention that there were more adults in this study. The age category of respondents varied between 21 and 60 years as shown in Table 5.1. The age category of 21 to 30 years had the highest number of learners made up of 118 learners (48%). Results indicate that most 81 (33%) of the respondents were between 21 and 30 years, and the age category of 51 to 60 had the least students in both genders (one male and two females). There were more male students (nine, i.e. four percent) in the age category of 41 to 50 years compared to the seven (three percent) female distance learners.

5.2.3 Distance learners' level of study

Table 5.2: Level of study

(N=243)

Frequency	Responses	
	Number	**%**
Diploma	72	30
Advanced diploma	53	22
No response	48	20
Postgraduate diploma	42	17
Degree	28	11
Total	**243**	**100**

The level of qualification helps to relate to the level of respondents‟ understanding and experience with reference to the issues of accessing and using electronic information resources. Educational levels have been investigated as predictors in studies related to factors that influenced adoption and use of information technology by Kripanont (2007). It was examined as a factor to determine technology use. It has therefore emerged in results presented in Table 5.2 of this study that a majority 72 (30%) of learners were pursuing a diploma; 53 (22%) were doing an advanced diploma; 28(11%) were pursuing a degree, and 42 (17%) were pursuing a postgraduate diploma. About 48 (20%) of the respondents did not indicate the level of their study programme.

5.2.4 Centres and distance learners

There are eight distance learning centres reflected in Table 5.3

Table 5.3: Total number of centres and distance learners

(N=243)

Name of centre	Frequency	
	Number	**%**
C1	85	35
C4	61	25
C6	18	7
C3	12	5
C5	12	5
No response	11	5
C2	9	4
C9	9	4
C11	8	3
C7	7	3
C10	6	2
C8	5	2
Total	**243**	**100**

Table 5.3 gives the total number of distance learners per centre who participated in the completion of the questionnaire. The results indicate that the highest number 85 (35%) of the distance learners were from C1, and 61 (25%) were from C4. The remaining centres had very low representation: C2 had nine distance learners (four percent); C9 had nine (four percent); C11 had eight (three percent); C7 had seven (three percent); C10 had six (two percent); and C8 had five (two percent). About 11 (five percent) learners did not indicate the centre they are registered with.

5.2.5 Distance travelled by distance learners to the learning centres

The distance learners were asked to state the distance they travelled to get to the learning centres. The results are presented in Table 5.4 below.

Table 5.4: Distance travelled to learning centres

(N=243)

Distance	**Responses**	
	Number	**%**
Very far	142	58
Within 2-km radius	46	19
Don't use the centre	21	9
Within same premises	19	8
Don't know	14	6
Total	**243**	**100**

Distance is an important factor in distance learning. Distance from immediate sources of information, such as academic library resources, can affect information-seeking behaviour. It was in the light of this that the distance learners were asked to indicate the distance travelled from their place of residence to the learning centres. The results in Table 5.4 indicate that the majority of the students 142 (58%) noted that the learning centres were very far from their place of residence. About 46 (19%) said the learning centre was within a two kilometre radius, and 19 (eight percent) indicated that the learning centre was within the same premises as the campus on which they are studying. A few of the learners 21(nine percent) indicated that they did not use

the learning centre at all, while 14 (six percent) of the learners said they did not know the distance from their place of residence to the learning centre.

About 58% of learners travelled long distances to get to their learning centre. The reason why learners travelled long distances might be attributed to the sparsely populated rural areas that have no centres for distance learning and/or libraries. Statistics from the discussions with the centre coordinators also revealed that students, indeed lived far-away distances from the centre, hence making it very difficult for them to access information resources in order to get their study materials on time.

Rationally, today‟s learners have been exposed to a number of technology innovations. As a result, they are likely to have formed favourable or unfavourable attitudes about them irrespective of whether they have actually used the technology in question. The sections (5.3 to 5.8) that follow below provide analyses of this study‟s data based on TAM to explain the usage behaviour of electronic resources by distance learners.

5.3 Theme 1: Attitude and perception of distance learners towards electronic resources

One of the research questions asked in this study sought to determine the attitude and perception of distance learners towards electronic resources at University of Namibia. Attitude is one of the constructs of TAM that is believed to have an effect on the behavioural intention of users to use technology. The study was based on the assumption that attitude towards electronic resources will have a positive effect on the intention to use electronic resources. The survey questionnaire was therefore designed to establish whether learners used electronic resources, the frequency of use of electronic resources, format preferred when accessing electronic resources, and their views on electronic resources.

5.3.1 Advantages of electronic resources for the learners

Respondents were asked to state the benefits derived from using electronic resources. The results are presented in Table 5.5.

Table 5.5: Advantages of electronic resources to the learners

(N=243)

Advantages	Multiple Responses	
	Number	**%**
Having remote access; quick access to resources; 24-hour access to resources; wider access to resources	126	52
All of the above	84	35
Link to additional information	83	34
There is no limit on what you can access	78	32
You have multiple uses of single sources	44	18

Frequency distribution of responses acquired from learners in Table 5.5 showed that 126 (52%) of distance learners used electronic resources because they had remote access (24/7 access; quick access and wider access to electronic resources). About 83 (34%) of the learners noted that electronic resources were good because one has links to additional information. About 78 (32%) felt there was no limit on what one is able to access, and the least 44 (18%) of the learners noted the advantage of having multiple accesses for single sources. This indicates that most of the learners were optimistic about electronic resources, as they believed that electronic resources significantly enhanced their access to education. Learners‟ attitude and perceived usefulness of electronic resources influenced their behavioural intention to use electronic resources.

In addition to the advantages indicated in Table 5.5, some of the general remarks by learners regarding the importance of electronic resources were: “I use electronic resources because of educational benefits such as having study materials as well as being able to research online”; “Electronic information is really one of the ways we get much information in whatever we want

to know about. There is a great deal of different information in many areas of interest". Many of them recognised the importance of using the Internet for their studies by expressing the following: "Internet is useful source to search your information"; "It is good to use information from the Internet"; "Internet use is essential in my studies and helps me to produce quality assignments and projects, it also helps enhance my knowledge base and improve my computer skills"; "Electronic media is the backbone of education as there is wealthy of information". One of the learners, however, did not see the importance or benefits of electronic resources. The learner remarked by saying: "I don't see the use of electronic resources".

One of the librarians echoed the following sentiments: "Electronic resources are important in distance learning because of the fact that libraries are far from the learners to access library material". These resources according to her are becoming popular because they allow the use of keyword searches, and it is easy to jump pages. She felt that electronic resources will become more important in the future for library users.

5.3.2 Attitudes of distance learners towards electronic resources

The usability of electronic resources was found to affect the attitude of users and their willingness to use them. Attitudes of distance learners were therefore determined by asking them to respond to the statements in Table 5.6.

Table 5.6: Attitude of distance learners towards electronic resources

(N=243)	Responses													
	Strongly Agree		Agree		Disagree		Strongly disagree		Don't know		I don't use it		Missing	
Statements	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
It enhances my ability	139	57	94	39	4	2	0	0	1	0	2	1	3	1
It confuses me	2	1	36	15	128	53	59	24	7	3	4	2	6	2
I use it to communicate	49	20	80	33	59	24	19	8	5	8	11	5	6	2
It makes me enjoy studying	86	35	130	53	15	6	3	1	4	2	1	0	7	3
I feel overloaded	14	6	49	20	125	51	44	18	5	2	6	3	0	0
I feel comfortable	83	34	127	52	27	11	3	1	3	1	1	0	2	1
It would be beneficial	107	44	126	52	8	3	1	0	2	1	1	0	0	0
It is desirable for my studies	84	35	117	48	17	7	4	1	4	2	1	0	16	7
It is good to use for my studies	85	35	134	55	15	6	2	1	1	0	2	1	5	2
My academic work would suffer without them	88	36	101	42	39	17	8	3	3	1	1	0	3	1
I would choose print resources	46	19	69	28	90	37	27	11	10	4	1	0	2	1
CD-ROMs are becoming unpopular	33	14	77	32	47	19	9	4	53	22	16	7	5	2
I can avoid electronic resources and still perform well	18	7	84	35	82	34	44	18	11	5	1	0	3	1

Table 5.6 shows that a significant number of learners 139 (57%) strongly agreed, and 94 (39%) agreed that the Internet enhances their ability to access the latest educational information, against four (two percent) learners who disagreed.

Some users 128 (53%) disagreed, and 59 (24%) strongly disagreed with the statement, “the available information on the Internet confuses me”, with 36 (15%) agreeing.

A majority 80 (33%) of learners were in agreement in their perception of the statement, “I mainly use the Internet to communicate”, while 59 (24%) disagreed with the statement.

More than half of the learners 130 (54%) agreed that electronic resources made them take delight in their studies, whereas, on the other hand, a total of 15 (six percent) disagreed with this statement.

Many learners 125 (51%) disagreed with the statement, “I feel overloaded with all the information available”. About 49 (20%) agreed with the statement, while 44 (18%) disagreed with the statement.

The respondents‟ perception on the statement, “I feel comfortable with the way I conduct information searches on the Internet” was mainly positive. More than half 127 (52%) of the learners agreed that they felt comfortable, whereas 27 (11%) disagreed with the statement.

The statement, “I believe that using electronic resources for studies, research, and assignment would be beneficial for me” received a good response rate. Most learners 126 (52%) agreed with the statement, while 107 (44%) strongly agreed, with eight (three percent) disagreeing.

A total of 84 (35%) of the learners strongly agreed that it would be desirable to use electronic resources for their studies, whereas 17 (seven percent) disagreed. Learners‟ perception on the statement, “It would be good for me to use electronic resources” also received a positive response. More than half 134 (55%) agreed with the statement, while in contrast, 15 (six percent) disagreed.

Less than half of the learners 101 (42%) agreed that the standard of their academic work would suffer without electronic resources. It came to light that 88 (36%) strongly agreed, whereas 39 (17%) disagreed with the statement.

The respondents‟ perceptions on the statement, “Given the opportunity to choose between electronic resources and print resources, I would choose print resource” were mainly negative. A

minority (90, making up 37%) of learners disagreed that they would choose print resources, 69 (28%) agreed, and 46 (19%) strongly agreed with the statement.

A small number of learners (77, comprising 32%) strongly agreed that CD-ROMs were becoming unpopular among students. This was against the 53 (22%) learners who did not know if they are becoming unpopular, and 47 (19%) who disagreed with the statement.

A few learners 84 (35%) agreed and 82 (34%) disagreed with the statement; "I can avoid electronic information resources and still perform well in my academic work". On the other hand, 44 (18%) learners strongly disagreed with the statement.

5.3.3 Distance learners' frequency of use of electronic resources

Learners were asked how often they used electronic resources. The results are reflected in Table 5.7 below.

Table 5.7: Frequency in using electronic resources

(N=243)

Frequency	**Responses**	
	Number	**%**
Most of the time	75	31
Sometimes	75	31
All the time	71	29
Rarely	15	6
No response	5	2
Never	2	1
Total	**243**	**100**

Table 5.7 shows that in total, less than half 75 (31%) of the learners used electronic resources „most of the time" and „sometimes" respectively. About 71 (29%) of the learners indicated that

they used electronic resources „all the time". About 15 (six percent) said they „rarely" used electronic resources, and two (one percent) indicated they „never" used electronic resources. However, five (two percent) of the learners did not indicate whether they used electronic resources or not.

The statistics from learners indicated that electronic resources were perceived as useful. Learners felt confident about technology and electronic resources and intended to use them as needed. Reaction to use electronic resources influenced the actual usage of the electronic resources, which in turn, influenced intention to use the resources. It is expected that perceived usefulness will significantly determine usage behaviour in using electronic resources by distance learners.

5.3.4 Format of information resources preferred by distance learners

Learners were further asked "whether they preferred electronic resources over print resources for research, study and assignments" and also to state their reasons for the preferred choice. The respondents provided detailed answers, which the researcher coded into the following categories: print only, electronic only, and both. The participants" responses are summarised in Table 5.8.

Table 5.8: Format preferred by distance learners

(N=243)

Preferred format	**Responses**	
	Number	**%**
Both	128	53
Print only	74	31
Electronic only	37	15
Missing	3	1
Total	**243**	**100**

Most 128 (53%) of the distance learners used both electronic and print formats to obtain information for research, study and assignments. Table 5.8 also shows that some learners (74, making up 31%) used print resources as opposed to the 37 (15%) who chose to use electronic resources only. This could be because many learners might have been exposed to print resources more than electronic resources. Perhaps information sources in print format are more easily accessible to them than the electronic format. The use of electronic resources might be a challenge because it involves the use of electricity, which may not always be available in the homes of the learners. In other words, since most of the respondents lived in areas where there is lack of basic infrastructure, such as electricity supply and roads, it was expected that isolation would be an important barrier. The costs of accessing and using electronic resources may not be affordable to them. Only three (one percent) of the learners did not state their preferred format.

In addition, centre coordinators were also asked what formats were mostly consulted by distance learners. Results showed that out of the eight centre coordinators, five stated that distance learners mostly consulted print resources as opposed to electronic or both resources. The interview with the librarians however revealed that distance learners do not consult electronic resources often. One librarian indicated that she was doubtful on whether distance students were using electronic resources. She remarked: "One of the challenges is determining the usage. It is difficult to determine who is using the resources and who is not using". Nonetheless, she felt most students were not using electronic resources often because of a lack of marketing on the part of the library.

5.4 Theme 2: Electronic resources available to distance learners at UNAM

The study was based on the assumption that the UNAM Library was well resourced to adequately cater for the information needs of distance learners through electronic resources. In other words, attempts to use electronic resources by learners depended on the availability of resources, services and facilities to access the resources.

5.4.1 Resources available

Results from the survey conducted on the centre coordinators indicated that out of the eight centre coordinators surveyed; only four responded to the question relating to the electronic

resources their different centres provided. Three indicated they provided CD-ROMs, and one indicated they provided DVDs. Interview results with library staff indicated that the library subscribes to various electronic resources and databases (following this link http://library.unam.na). This link gives the reader details to the different types of electronic resources subscribed to by the UNAM Library. Some learners remarked:

- "UNAM books (study guides) are of poor quality".
- "In most cases we are asked to look for reference in our libraries but there are not enough textbooks. Consequently we end up not finding relevant information".
- "Most of the resources in the library are not familiar to me and are limited to use".

The centre coordinators also gave similar responses. They mentioned that books in the centres are viewed as alternatives to prescribed text; however, many books are not used because they are not relevant to the curriculum. The centre coordinators requested more copies of prescribed textbooks to meet the needs of the learners.

5.4.2 Services

Centre coordinators were also asked what digital services and user access they provide. Seven of the centre coordinators indicated that they provided access to electronic resources. Two provided access to OPAC, and one provided access to digital inter-library loan services and audiovisual media respectively. Although most of the centres provided electronic resources, an important point relating to assessing the library was raised by one of the learners. The learner mentioned, "For us distance learners, when coming to vocational school we don"t have enough time to use the library because it closes early".

5.4.3 ICT facilities available to distance learners

If the ICT facilities in libraries are functional, users should not have any problems of accessing electronic resources to complement the inadequate print resources. The centre coordinators were therefore asked what ICT facilities are available for use by distance learners at their learning centres. The majority seven (70%) provided „internet" facilities, three (30%) had telephone

facilities, two (20%) had television facilities for learners to use, and one (10%) had a radio for use by learners and provided access to online learning.

General comments from the students highlighted dissatisfaction with the ICT facilities available at the centres; these facilities hinder satisfactory use of the centres by the learners. The following comments from the learners confirmed this:

- "Regional centres are poorly equipped. Few computers are available at the centre and no printing facilities are available to students".
- "Computers in the library are few and most of the time you can"t gain access to any immediately and have to wait".

It was observed that the majority of CES centres and main campus library provided printing, scanning and photocopying facilities. Five centres had a fax machine, TV and video players. However, it was observed that some of the equipment such as printers and scanners were not working. The centres had limited networked computers - two to three computers in some centres. The CES centres that were observed, with the exception of the main campus library, did not have wireless technology. It was also observed that the Internet was slow in some centres and, in others; users were unable to connect to the Internet.

5.5 Theme 3: The level of awareness about electronic resources available in the library

One of the purposes of this study was to examine the level of awareness of students, lecturers and centre coordinators of the electronic resources available at the UNAM main campus library. It was assumed that learners would use electronic resources if they were aware of their existence. Similarly, the study also posits that both lecturers and centre coordinators would be able to refer learners to the electronic resources if they themselves used electronic resources and were aware of their existence.

5.5.1 How learners find out about sources of information

This study aimed to establish the extent to which learners" behaviours, attitudes and opinions on the use of electronic resources were influenced by external factors. Social influences are assumed

to have a significant effect on perceived usefulness and intention to use electronic resources. Malhotra (1999) advised that future researchers should account for social influence in further investigating TAM. Learners were therefore asked QUESTION 6.1: How to do you find out about electronic resources relevant to your course? The results are reflected in Table 5.9.

Table 5.9: How learners find out about sources of information relevant to their studies

(N=243)

Find out about sources of information	**Multiple Responses**	
	Number	**%**
A friend	83	34
A lecturer	75	31
Lecture notes	71	29
Databases or search engines	68	28
Not sure	42	17
A reading list	37	15
A librarian	28	12
A supervisor	13	5

Frequency distribution of responses acquired from learners in Table 5.9 shows that the majority (83, making up 34%) of learners find out about information resources from their friends; 75 (31%) find out from lecturers; 71 (29%) find out from lecture notes; 68 (28%) find out about sources of information from databases and search engines, while 42 (17%) were not sure how they found out about information sources for their assignments. However, the rest 37 (15%) ; 28 (12%) ; and 13 (five percent) of the respondents, as indicated on Table 5.9 above, find out about electronic resources either from a reading list, a librarian or their supervisor respectively.

5.5.2 Promotion and marketing of electronic resources

Centre coordinators were asked how they promote and market electronic resources services offered by the main campus library. Comments by centre coordinators surveyed revealed that five (63%) of the centre coordinators promoted and marketed library and electronic resources, while three (38%) did not. Interview results with the librarians and lecturers also agreed with the findings. The library staff indicated that there was little marketing done by the library to create awareness of the resources available to distance learners. The librarians‟ response was: "Students are not aware of the many electronic resources provided or subscribed to by the library. Equally, they do not know the proxy to access electronic resources off-campus. The web page is not user-friendly".

The lecturers‟ survey revealed that most of them promoted and created awareness of electronic resources. Some comments raised by the lecturers included:

- "I always give a list of credible websites. I also explain to them how to access the electronic journals and how to search on the sites. I refer them to the Internet. Regular visits and interactions with librarians for information is encouraged. The study guide has a section on how to use library resources and services is included in assignment letters. I inform them how to search the library resources using the database + Google Scholar".
- "A librarian can guide students on available resources and how to access them. Distance students must be accorded a library tour as it is the case with conventional students".
- "During inductions for the first-year distance students, they are advised to use the Information resources such as the portal and tutorials letters, assignments letters and Facebook".

5.6 Theme 4: ICT competencies required by distance learners to effectively use electronic resources

TAM asserts that behaviour intention is more predictive of usage behaviour when individuals have had prior experience with technology (Kripanont, 2007, p. 90). This study therefore sought to establish the ICT competencies of distance learners. The idea was to establish the skills a learner needs in order to use a computer or a laptop and also whether learners have received the

necessary skills required for them to effectively and adequately use electronic resources provided by their centres and the main campus library. It was also important to find out if the learners possessed adequate skills in the use of ICT technologies for their studies. It was necessary to establish what ICT skills learners possess and require to access electronic information resources in the library and learning centres. Equally, the questionnaires for centre coordinators and lecturers, and interview guides with librarians all tried to understand their views regarding learners‟ perceived skills and competencies in the use of electronic resources.

5.6.1 Level of schooling needed to use ICT technologies

The study tried to establish the level of schooling at which learners learned to use a computer and the results are given in Table 5.10.

Table 5.10: Level of schooling where learner learned to use a computer

(N=243)

Level of schooling	**Responses**	
	Number	**%**
Diploma	96	40
Secondary school	75	31
Bachelor‟s degree	36	15
Primary	30	12
Nursery	6	2
Total	**243**	**100**

Frequency distribution of responses acquired from learners in Table 5.10 show that less than half 96 (40%) of learners learned to use a computer at diploma level, 75 (31%) learned in secondary school, and 36 (15%) learned at bachelor‟s degree level. The minority of learners 30 (12%) learned to use a computer at primary school, while six (two percent) learned in nursery school.

Furthermore, the question, “How have you learned to use electronic resources?” was posed to the learners. Findings revealed that more than half 127 (52%) of the learners were self-taught; 107 (44%) learned to use electronic resources from peer guidance; 87 (36%) learned through trial and error, while 67 (28%) learned from courses offered at the university. About 50 (21%) learned from external courses; 45 (19%) said they learned through the guidance of a lecturer, whereas 32 (13%) indicated that they learned through the guidance of library staff. About 12 (five percent) learned through the guidance of an IT technician, and 22 (nine percent) learned through the guidance of a staff who works at the computer centre.

5.6.2 Ownership/ access to Personal computer or laptop

Learners were asked whether they had a personal computer or laptop. It was indicated that 177 (73% – making up the majority) of distance learners had access to a computer or a laptop, while a minority of 64 (26%) learners did not have access to a computer or owned a laptop.

To access electronic resources, a user needs to have a computer or laptop connected to the Internet. Therefore, respondents were asked to state where they accessed electronic resources from. The results indicated that less than 96 (40%) of the learners indicated that they had access to network computers at the CES centre. Moreover, about 33 (14%) had access to networked computers or laptops from internet cafés, whereas 19 (eight percent) accessed a networked computer or laptop from home. Less than one (zero percent) of the users used other means to access networked computers or laptops, and a large number of 94 (39%) learners did not indicate how they accessed networked computers or laptops.

5.6.3 Training programmes

Learners were also asked if they had received library orientation, training in information literacy and internet searching skills. The study results indicated that a higher number of distance learners numbering 114 (47%) received training on internet searching skills, while less than half 52 (21%) received library orientation, and 50 (21%) received training in information literacy. Results indicated that a higher number of 114 (47%) learners received training in library

orientation. This notwithstanding, some of the general comments raised by learners, revealed conflicting results. The following comments came out from the responses:

- "We need more information on how to use library resources please".
- "We need training on how to search information in the library through internet, because some of us never got training on the usage of computer (internet)".
- "Distance learners should be given enough information to be able to access electronic resources".

With regard to training on internet search and information literacy, some learners expressed the need for training. The responses were:

- "Distance students need to be taught on how to use internet".
- "Training on how to use the Internet needs to be offered at university level".
- "More practical training on how to use computers for students please".
- "Skills on how to search more information like e-journals from the computer".
- "We need classes on how to search information using UNAM engines".

Findings from the survey with centre coordinators also revealed that learners lacked training on how to access electronic resources. The results also revealed that out of the eight centres surveyed, only five provided ICT skills training. Even though they provided training, six of the centre coordinators indicated that learners were not ICT competent. Facilitating condition is believed to include the availability of training and provision of support (Lu *et al.*, 2011). These are external factors related to the environment. Behaviour cannot occur if there are conditions in the environment which prevent it or make the behaviour difficult (Lu *et al.*, 2011). Conditions such as distance travelled, information literacy training, distance support, policies, and license agreement are critical to technology acceptance.

Centre coordinators were asked to indicate when last they provided training on electronic resources to distance learners. The results revealed that out of the eight centre coordinators, half (50%) of the centre coordinators indicated that they last gave training to distance learners „a month ago"; one (13%) said it was „six months ago", yet another one (13%) said they „never"

gave training to students. About a quarter (25%) of the centre coordinators did not indicate when last they offered training to distance learners.

One of the learners remarked: "Distance students should be given classes on how to access OPAC, twitter, facebook, CD-ROM, ebook, journal, group google for them to access useful information". Another learner also highlighted the fact that computer study must be introduced in Namibian schools as a compulsory subject so that "when a student comes to the university they are computer literate".

5.6.4 ICT skills and experience

Learners were asked to state what their information and communications technology skills were. The results are depicted in Figure 5.1

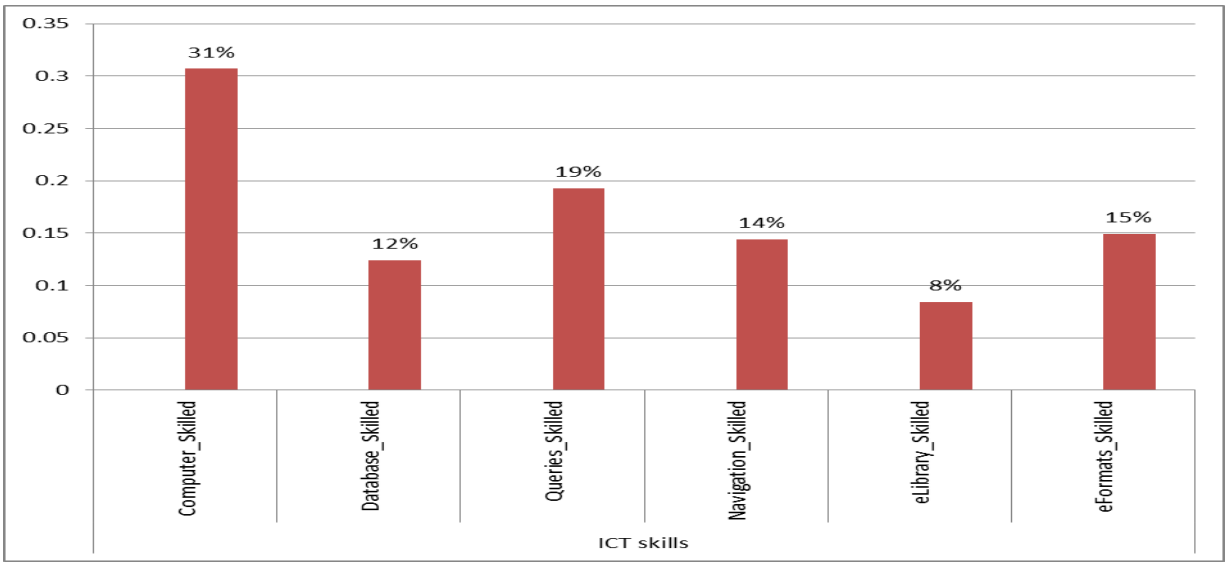

Figure 5.1: Learners ICT skills

Figure 5.1 depicts that the majority (31%) of the students felt they had skills in the use of computers. The least, eight percent of the distance learners highlighted that they had skills in the use of CD-ROM databases, OPAC, subject gateways, and others.

Statistics from the centre coordinators surveyed indicated that students were not competent in using computers and also lacked searching skills. Centre coordinators also remarked: “learners were not confident enough to use e-resources without assistance”. Similar arguments were shared by the lecturers. They noted that some distance learners were computer illiterate and encounter problems with typing assignments.

Students were asked to select a number of tasks performed on a computer in which they felt they had skills. The results are indicated in Table 5.11.

Table 5.11: Tasks performed on computer

(N=243)

Tasks performed on computer	**Multiple Responses**	
	Number	**%**
Word processing	231	95
Internet Email	201	83
Presentation	172	71
Spreedsheet	152	63
Database management	76	31
Desktop Publishing	67	28
Programming	48	20
Web Page Design	39	16
Computer Repair	21	9
eZoo	17	7

Results in Table 5.11 indicate that the majority of learners 231 (95%) performed word processing on computers, 201 (83%) performed internet email while 172 (71%) and 152 (63%) used computers to work on their presentations and on spreadsheet documents. Less than half of the learners used computers to perform tasks such as database management (76, 31%), desktop

publishing (67, 28%), programming (48, 20%). About 39 (16%) used computers to perfume web page design, 21 (9%) used computers to assist them in retrieving information to computer repair computers and well as repairing computers and 17 (7%) used computers to perform eZoo.

The question, "How do you perceive your level of information skills?" was asked. Findings showed that more than half 132 (54%) of the students who participated in the study perceived their level of information skills to be „good", while 61 (25%) felt it was „fair". About 29 (12%) learners felt that their level of information skills was „excellent" and only 18 (seven percent) felt it was „poor". About three (one percent) did not indicate how they perceive their level of information skills.

5.6.5 Distance learners' years of experience with computers

The Technology Acceptance Model suggests that experiences received from the use of electronic resources elicit usage of the technology. Learners were therefore asked the following question: What is your experience with computer use?

Table 5.12: Computer experience

(N=243)

Experience	**Responses**	
	Number	**%**
Above 4 years	116	48
1-2 years	50	21
3-4 years	40	16
<1 year	35	14
Missing	2	1
Total	**243**	**100**

The results in Table 5.12 indicate that less than half (116, making up 48%) of distance learners had experience of more than four years of computer usage. About 50 (21%) have between one and two years of experience, while 40 (16%) have between three and four years of experience. In addition, 35 (14%) have less than one year experience in the use of computers. Only two (one percent) did not indicate their experience in using a computer. Experience was clearly theorised as a moderator in TAM, in that experience significantly moderated the influence of subjective norms towards behavioural intention (Kripanont, 2007).

During the interview with one of the librarians, she remarked: "Lecturers would know their students better because they are the ones who give them assignments and topics that require them to use various informational sources including electronic resources. However, students need to have computer skills as well as information skills on how to use OPAC".

5.7 Theme 5: The level of use of electronic resources by distance learners

In order to make proper use of electronic resources at the University of Namibia, there was a need to understand the attitudes of learners towards the use of electronic resources. It was important to know the purposes for which learners used electronic resources. This study intended to investigate both usage behaviour and behavioural intention because they helped in predicting current usage of electronic resources by distance learners. It was expected that usage behaviour would be influenced by behavioural intention to use electronic resources. The study therefore aimed to establish whether distance learners use electronic resources or not, and which resources are mostly used and the purpose and reasons they choose to use them.

5.7.1 Tools used to access information sources

In order to establish the level of use, learners were asked to indicate the tools they used to get access to the information sources needed for research and studies.

Table 5.13: Tools used to get information sources

(N=243)

Tools	Multiple Responses	
	Number	**%**
UNAM Website	129	53
Search Engines	106	44
Catalogue	59	25
Index Journals	20	8

Table 5.13 shows that more than half 129 (53%) used the UNAM website to get information sources, while 106 (44%) used search engines. Some 59 (25%) of the learners used the library catalogue and very few 20, making up eight percent used indexing journals to get information sources.

5.7.2 Learners' purpose for using electronic resources

Learners were asked to give reasons as to why they accessed electronic resources. Figure 5.2 gives the total percentage of the study-related activities which prompted learners to seek electronic information.

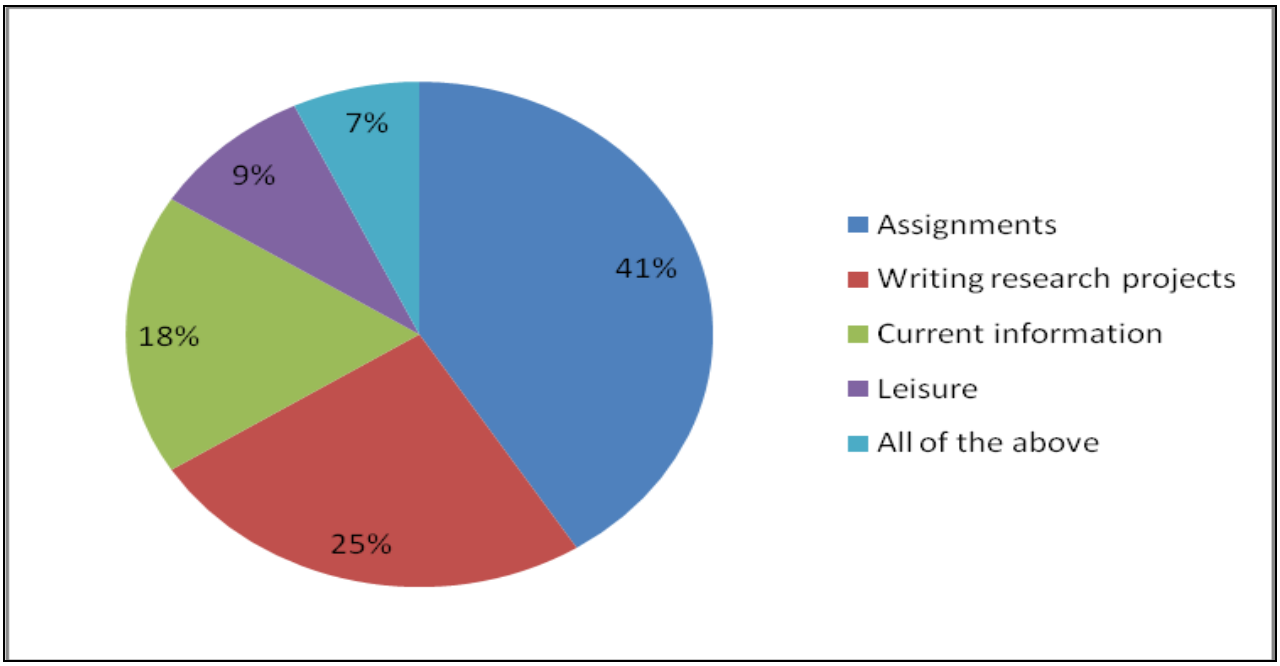

Figure 5.2: Purpose for using electronic resources

The majority of learners used electronic resources for writing assignments and projects. The least number of students (postgraduate students) used them for writing research projects. This could have been attributed to the fact that postgraduate students are normally few. The statistics in Figure 5.2 revealed that 100 (41%) were prompted to seek electronic resources when they were working on their assignments, 59 (25%) used electronic resources for writing research projects, while 44 (18%) used electronic resources for current information. About 23 (nine percent) used electronic information for leisure, and only 17 (seven percent) used electronic resources for the purposes highlighted (projects writing, leisure, assignments and keeping up to date with current information).

Similarly, results from the centre coordinators surveyed, revealed that out of the eight centre coordinators that completed the questionnaire, the majority (seven, i.e. 88%) said learners used electronic resources for assignment purposes, half (50%) said learners used electronic resources for „leisure", and very few (three, making up 38%) indicated that they used electronic resources for current and general information. Only two (25%) said they use them for writing projects, theses and dissertations.

Centre coordinators were further asked about the purpose distance learners used the learning centre. The results revealed that students mostly used the centres for the purposes indicated in Table 5.14.

Table 5.14: Learners‟ reasons for using the learning centres

N=8

Purpose	Multiple Responses	
	Number	%
Access Internet	5	63
Borrow books	4	50
Study	3	38
Read newspapers	2	25
Research	1	13
Other	1	13

The results in Table 5.14 revealed that five (63%) of the respondents (i.e. centre coordinators) felt that learners used learning centres to access the Internet. Furthermore, four (50%) of the centre coordinators noted that learners used the learning centres to borrow books. The results also indicated that three (38%) felt that learners used the centres for study purposes, while (13%) felt that learners used them for other unspecified purposes. Whether the learners had access to the right and appropriate information resources was another question. Access to the Internet was identified as the most important reason for using the learning centres.

5.7.3 Methods used by learners to find relevant information on the Internet

Respondents were further asked to indicate how they searched for information resources on the Internet. The most common methods used by many (61%) of the learners was via „web search

engines"; 28% searched via „portals", and eight percent searched via OPAC and three percent did not give a response.

However, when they were asked to indicate their most preferred sources of information, the majority of learners indicated their most consulted sources of information as the ones shown in Table 5.15.

5.7.4 Preferred sources of information

Table 5.15: Sources of information mostly consulted by learners

(N=243)

Sources of information	Multiple Responses	
	Number	**%**
Internet	178	73%
Lecture notes	149	61%
Using reference textbooks	105	43%
Library resources	80	34%
Talking to colleagues	67	28%
Others	14	6%

Results in Table 5.15 show that 178 (73%) of learners mostly consulted lecture notes for information, followed by 149 (61%) who consulted the Internet. Some 105 (43%) learners consulted reference textbooks, 80 (34%) consulted library resources, whereas 67 (28%) preferred to talk to their colleagues for information. About 14 (six percent) indicated that they consulted other unspecified sources.

5.7.5 Frequency of use of electronic resources

It was necessary for this study to establish the frequency of use of electronic resources. Respondents were asked the following question: How often do you use the following information sources for research and assignment? The results are given in Table 5.16.

Table 5.16: Frequency of use of information sources

	Responses			
Information sources	**Very often**	**Often**	**Sometimes**	**Rarely**
Electronic journals	38	24	62	109
E-books	23	31	46	128
Search engines	63	35	37	92
Social Media, e.g. Facebook, Twitter, LinkedIn	63	27	53	89
UNAM Website	94	45	58	35
Scientific Databases	12	16	57	131
The Internet	161	41	30	7
Library E-resources	24	42	58	102

Results in Table 5.16 reveal that from the 243 learners surveyed, most of them rarely used electronic journals (109), e-books (128), scientific database (131) and library e-resources (102). Some 161 learners used the Internet very often and 94 also used the UNAM website very often. Most of the learners (45) often used the UNAM website, followed by library electronic resources (42) and the Internet (41). Those students who indicated that they used scientific databases very often were 16, and those who used electronic journals were 24. Many (62) learners indicated that they used electronic journals sometimes, and 58 used library electronic journals and UNAM websites. A very low number (30) of learners indicated that they used the Internet sometimes.

The reason for this low usage of the Internet could be the costs involved in their use. Unlike the full-time students who can easily walk to the university library to use internet facilities, students in satellite campuses or regions do not have such a provision.

5.8 Theme 6: Factors inhibiting the use of electronic resources by distance learners

The objective of one of the research questions was to determine those factors that hindered or prohibited learners from successfully utilising electronic resources, with a view of gaining an understanding of the electronic problems encountered by learners and service providers. The following question was asked: What problems do you encounter when using electronic resources? The results are shown in Table 5.17.

Table 5.17: Factors hindering learners from successfully utilising electronic resources

(N=243)

Barriers	Multiple Responses	
	Number	%
Speed access	107	44
Not enough time	81	34
Information overload	81	34
Don‟t know how to search	69	29
Information is scattered	55	23
Limited search skills	53	22
High internet cost	52	21
Inadequate library knowledge	51	21
Limited knowledge	35	14
No access to Internet	34	14
Unaffordable PC	32	13
All the above	21	9
No access to PC	19	7
I lack trust	11	4
Internet benefits	4	1

Less than half 107 (44%) of the learners surveyed, as indicated in Table 5.17 complained about the Internet access speed, which they felt was very slow. Eighty-one (34%) of the learners indicated that they felt overloaded with information and equally felt that they do not have enough time to search for information. Additionally, 69 (29%) noted that they do not know how to search for information. Very few, below five percent of the respondents felt they do not benefit from the Internet. The rest of the barriers received a very low (below 10%) percentage. Resource factors such as time (not enough time) and money (high internet costs) needed by learners to effectively use electronic resources had a negative effect on perceived usefulness and behavioural intention and usage.

The factors which were mentioned by the learners, lecturers, centre coordinators and library staff for not using electronic information resources are summarised below. Learners were asked if they had any general comments. The comments raised by distance learners were categorised as follows: Internet speed, distance from the learning centres, and student support. These general comments are summarised as follows:

a) Internet speed

General comments on the Internet were as follows:

- "The Otjiwarngo centre is facing low internet speed as a challenge, something should be done as downloads speed is too slow".
- "Centre internet is very slow".
- "Have internet everywhere that is less costly".
- "The access to UNAM internet is very slow please do something about it".
- "Internet is very slow and it needs to be connected into a faster way".
- "Speed of access to internet is very slow".
- "How can you increase the download that is too slow?"

Findings from the centre coordinators are also in agreement with the learners. Results from the survey conducted with centre coordinators also revealed that the majority (six) indicated bandwidth problems as a challenge faced when providing electronic resources such as online databases. Three felt power supply was a challenge and two indicated knowledge and skills in

handling electronic resources to be a challenge. Seven of the centre coordinators also rated the internet connectivity as „very slow" when they were asked to rate the speed of internet connectivity at their centre. Only one of the centre coordinators rated it as fast.

General responses by lecturers were: "Most of them live in rural areas", "They have no access to internet not to mention electricity", "Power/inconsistent connections/lack of know how" and "Availability of the Internet for some students in rural areas is a problem – Network problem, no internet connections, and poverty".

The general concern highlighted by the librarian was that libraries will not diminish the importance of electronic resources; however, traditional ways of operation will still be the main focus of information resources. One of the reasons is that not everybody has access to the Internet at home, and there are bandwidth problems when it comes to accessing electronic resources. However, traditional ways of operation will diminish with the passing of time.

b) Distance travelled by students to the centres

Another general comment raised was the distance travelled to the learning centres. The learners" responses varied.

- For example, most of them have stressed, "Due to work commitments and the remote areas, I only have access to materials through the Internet".
- Major obstacle is, "the lack of ICT education and facilities in the remote area are major factors/reasons why most students from rural areas struggle with accessing information online".
- Also, they opined, "centres are far from our places and the schools where we are teaching have no internet connectivity".

Findings from the general comments raised by centre coordinators also indicate "distance learners are in rural areas where there is no reliable electricity or network". They come from remote areas, are isolated, and often do not see the necessity of using a library for their studies. Most of them have other responsibilities which hinder them from making the necessary efforts for their studies.

c) Student support

There were also general comments on issues pertaining to student support. The learners‟ responses were:

- “At least update our assignments and tests marks on time on our portal and give memorandums to our assignments”.
- “I just want to comment on our assignment. The one that is marked reaches us too late. We want it before examination starts so that we can see where we did wrong and where we are doing right”.
- “On the lecture notes, at times it is difficult to access the notes or assignments on time due to the accessibility of the Internet. It will be better for them to either email or put a notice regarding the notes or assignments”.
- “UNAM is doing a very nice job but the administration needs a lot of attention. Assignments should be marked soon and send back to the students to verify their weak points on time”. “Provide tutors in all towns, especially Walvisbay. We struggle a lot”.
- “At least to give us a scope for examination”.
- “CES courses are not related to degrees especially diplomas. When one decides to further his/her studies for a bachelor programme you have to go for 4 years. Interrelate the programmes and have proper articulation”
- “Assignments must be handed over to students at least a month in advance, as we sometimes struggle to complete on time due to work responsibilities”.
- “CES UNAM should try to load all the information needed by CES students on portal in order to make our study easier”.
- “The lack of access to previous question papers for research on the portal”.
- “Librarians are not available all the time especially the help desk librarian cannot be identified and you may get out without assistance you needed. Please give us identity of the help desk attendants”.

The concern raised by the librarian was that the support system is lacking. The question one has to ask is whether distance learners know whom to conduct when it comes to library staff. Is the message conveyed clearly to them on whom to contact if there are concerns in the library?

d) Access to resources

Learners also commented on issues regarding access to electronic resources available online (the Internet). Their responses were:

- "Free access to internet for students even outside the campus to access information on the Internet easily (wireless connectivity)".
- "Most relevant documents online are available at a cost making it hard to access".
- "Yes mostly distance students at government offices are suffering because the Internet is very poor".
- "I do not understand why UNAM had taken out Adobe because sometimes I prefer downloading some academic videos but then there is no access (when using the campus wireless)".
- "UNAM website is too large for small phones. Can they make smaller website for small phones".
- "Electronic is useful but cost and time for access is challenging".
- "As a distance student we have limited time when it comes to the use of internet. We need to buy net-man and is expensive because you must have enough credit all the time".
- "Provide equivalent internet accessibility at CES centres".
- "Distance students should be provided with laptop and internet modem".
- "UNAM computers most of them are out of order or some part of the computer are not working. And last there are few computers for students".
- "The use of internet is very important to everybody only that most of us who did external studies are not having the Internet access".
- "Lecture/markers always tell you to read books as well but sometimes we/I don‟t have access".

5.9 Summary

This chapter presented the research data from survey questionnaires, interviews and observations, integrated and organised according to the predetermined thematic areas. Data was presented in the form of descriptive narrative and, where feasible, figures were used to get an in depth understanding of distance learners‟ behaviour towards the use of electronic resources and reasons governing such behaviour.

The data showed that learners live far from the centres and have to travel longer distance in pursuit of information. Despite distance, results revealed that most of the learners use electronic resources because of the various benefits derived from them, such as having remote access and because of educational benefits. It also found that learners are not very skilled in the use of these resources nor are librarians well exposed to them.

The study established that most of the learners prefer to use both electronic and print resources. However, there were a significant number of learners who indicated that they preferred print resources. The findings suggested that electronic resources were perceived to be useful and that learners in general were confident about the benefits of electronic resources and intended to use electronic resources. Perceived usefulness was the primary reason for the acceptance of electronic resources by distance learners. Results indicated that most learners very often use the Internet to search for information.

The use of electronic resources did not go without challenges. According to the data collected in the study, it was evident that resources, facilities and services are not adequate. This leaves a lot to be desired by distance learners. Based on the findings, it was suggested that computer and ICT skills and competencies are needed by distance learners. In other words, the factor of computer skills and experience had a significantly negative effect on behavioural intentions towards electronic resources through the factor of perceived usefulness. Factors such as distance travelled, information literacy training, distance support, policies, and license agreement are critical to technology acceptance and also had a negative effect on usage behaviour through the factors of behavioural intention. General ability to access information through adequate network facilities as well as creating awareness and providing adequate student support are equally

important as they impact students‟ attitude to use electronic resources or not. The next chapter discusses the data interpretation of the findings.

CHAPTER SIX

DISCUSSION OF FINDINGS

6.1 Introduction

Kothari (2004) opines that the interpretation chapter in doctoral study is essential because the usefulness of research findings lies in proper interpretation. Interpretation enables the researcher to understand why their findings are what they are and make others to understand the real significance of their results. This is how research findings also serve as a guide for future research studies and stimulate the quest for more knowledge. Kothari (2004) further notes that unless the research findings are known to others, then the purpose of research is not well served. Walsh (2001) advices that research report should be written in a way that communicates both the process (what you did) and the meaning of findings (what you discovered… and what meaning you attach to it) for people who read it.

Against this backdrop, Mouton (1996, p. 71) highlights three key elements in any research project or thesis which requires the researcher to identify the problem, gather appropriate evidence and then on the basis of evidence draw relevant conclusion …or interpret them to give effect to the meaning.

The purpose of this study as outlined earlier in Chapter One was to investigate the use of electronic resources by distance learners at University of Namibia. The following specific research questions were addressed:

1. What are the attitudes and perceptions of distance learners towards electronic resources?
2. What electronic resources are available to distance learners at UNAM?
3. What is the level of awareness of the learners about electronic resources available in the UNAM Library?
4. What ICT competencies do distance learners have to effectively use electronic resources?
5. What is the level of use of electronic resources by distance learners?

6. What factors hinder the use of electronic resources by distance learners?

7. What recommendations are needed to improve the use of electronic resources by distance learners?

The discussion of results is predicated on findings that are presented in chapter five (data analysis and presentation of findings). This chapter is organised into six major thematic areas based on the research questions and theory, namely, attitude and perception of distance learners towards electronic resources; electronic resources available to distance learners at UNAM; the level of awareness of electronic resources available in the library; ICT competencies required by distance learners to effectively use electronic resources; the level of use of electronic resources by distance learners; and factors hindering the use of electronic resources by distance learners.

6.2 Attitude and perceptions of distance learners towards electronic resources

The results in this study revealed that 118 (48%) respondents were between the ages of 21-30 years, and 15 (seven per cent were between the ages of 41-50 years (see results in Table 5.1). There were many younger participants than older ones perhaps, thus suggesting that those who frequently used electronic resources were the younger generation. This generation is generally able to "multitask, learn systems without consulting manuals, and surf the Web however they lack technology and information skills appropriate for academic work" (Korobili, Malliari, and Zapounidou, 2011, p.161) and are easily vulnerable to social influence (Lu *et al*., 2003). Abedalaziz, Jamaluddin and Leng (2013, p. 212) assert that students‟ positive "attitudes toward computer and Internet increase as their age decreases.

A review of the data analysed under the first research theme (section 5.3), which aimed to establish learners attitude and perceptions towards electronic resources revealed that, distance learners showed a positive attitude towards electronic resources. The technology acceptance model (TAM) asserts that intention is a proper way to examine and predict a users‟ behaviour towards a particular technology or system (Kripanont, 2007). The theoretical justification of this study lay in the findings that learners used resources because it is beneficial for their studies. As such, learners‟ intentions to use electronic resources were therefore examined. Respondents were asked to state the educational benefits derived from using electronic resources regardless of their

circumstances. Frequency distribution of responses presented in Table 5.5 show that more than half 126 (52%) of the learners would choose to use electronic resources because they had remote access (24/7 access; quick access and wider access) to electronic resources. Centre coordinators surveyed, also felt that learners considered factors such as "quick retrieval ability"; "freely available resources"; "up-to datedness of research results" and "full-text searching" to be most important for learners assignments. A survey done by Liu and Luo (2011) indicate that factors such as „remote and immediate access to full-text databases, 24 hour access and faster access are amongst the most important factors identified by students, which motivate them to use electronic resources. These findings are in line with the advantages previously highlighted by Quadri (2012), Damilola (2013) as well as Tenopir (2003) who observed that, library users expect to have prompt access to complete articles, whether through an online system offering full-text searching or by bibliographic searching with links to selected texts. Given available data, it is also important to understand the advantages of electronic resources from a library"s point of view. Libraries subscribe to e-journals, CDROM databases, online databases, web-based resources, and a variety of other electronic resources Oluwaseyi (2012) and most of these resource offer cost advantage, convenience of storage and maintenance, and ability to target global users, etc. (Quadri, 2012).

Many learners especially distance learners in this technology age depend on electronic resources to get the desired and relevant information. The distance learners in this study seemed to have positive attitude saying: "Internet is useful source to search your information"; "It is good to use information from the Internet"; "Internet use is essential in my studies and helps me to produce quality assignments and projects, it also helps enhance my knowledge base and improve my computer skills"; "electronic media is the backbone of education as it contains a wealth of information". These findings seem to concur with those of Hong, Ridzuan and Kuek (2003) who carried out a study on students at the University Malaysia Sarawak. Their findings revealed that students had positive attitudes towards learning using the Internet. They found that students from the "Faculty of Information Technology, Faculty of Engineering, and Faculty of Resource Sciences and Technology had more positive attitudes compared to students from the other faculties. This could be attributed to the fact that the students in these two faculties were more exposed and had more opportunities to the use of Internet for course related activities" (Ridzuan

and Kuek, 2003, p. 48). It is believed that learners with better basic Internet skills generally have better attitudes toward using the Internet to improve their studies. Sharma (2009, p. 1) asserts that the "Internet can be used for efficient retrieval and meeting information needs".

Therefore distance learners'' attitude and perceived usefulness of electronic resources influenced their behavioral intention to use them due to positive benefits as reflected in the results in Table 5.6, which show that 84 (35%) strongly agreed that it would be desirable to use electronic resources for their studies. There are a number of factors that endear distance learners, one being the fact that electronic resources are "proving to be invaluable research tools that complement the print-based resources in a traditional library setting (Kumar and Kumar, 2008 cited in Adeniran, 2013, p. 319). Moreover, a range of online resources have emerged to make the learning processes of distance learners speedier and less tedious 24/7 as long as there is adequate connectivity. Previous studies conducted by Connolly (1999); Liu and Luo (2011) and Zha, Li and Yan (2013) have affirmative indications and actually highlight positive benefits towards the utility of electronic resources. They argue that distance learners find electronic resources useful for various reasons such as robust searching capability, speed, convenience and completeness and can be accessed anytime from anywhere with online access. Users can also retrieve full-text electronic articles from databases without having to leave their desk. Sharma (2009, p. 1) noted that research scholars preferred "to use e-resources because they feel that e-resources are time saving, more informative and more useful". Damilola (2013, p. 3) put forth the following advantages of electronic resources. He noted that they are:

> often faster than consulting print indexes especially when searching retrospectively and they are straight forward when wishing to use combination keywords. They open up the possibility of searching multiple files at one time. Electronic resources can be printed, searched and saved to be revisited at a later date. They are updated more often than printed tools. They are available from outside the library by dial up access.

When questioned about the benefits of electronic access, respondents in the study by Olle and Borrego (2010, p. 224) at the Catalan University in Spain stated that "speediness and

convenience meant that they have more reading time and, more time for doing research". This study"s findings also revealed that there were a substantial number of learners who preferred print resources and had positive attitudes towards them. Indeed one learner remarked "I don"t see the use of electronic resources". Understanding factors that endear distance learners towards electronic resources ensure users are encouraged to accept and continually use digital library services (Liu and Luo, 2011). Moreover, understanding why electronic resources are used or not is important for collection development policies and for budget allocation. Results from Sahin and Shelley"s (2008) study at the College of Education at an Anatolian university in Turkey indicated that distance learners needed to have good reasons to engage and accept electronic resources such as ease of access, and usefulness.

For electronic resources to be useful, they must be accepted by the library users, particularly distance learners. In their study Hu, Chau, Sheng and Yan (1999) examined physicians" acceptance of telemedicine using technology acceptance model. They found that, if the telemedicine technology was to be effective, it had to be used by physicians. The technology acceptance model posits that use is influenced by ease of use. Moreover, both ease of use and usefulness predicts behaviour (Mathieson, Peacock and Chin, 2001). Two variables used in this study to predict distance learners attitude toward the use of electronic resources at UNAM were Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Agarwal and Prasad (1999); Sheikhshoaei and Oloumi (2011) assert that these two beliefs, are instrumental in explaining users attitudes towards electronic resources and also help in explaining their behavioral intention to use the resources.

A potential distance learner"s overall attitude towards using electronic resources is shown as a function of the belief constructs of the Technology Acceptance Model further discussed below. This study explored the extent to which distance learners at University of Namibia used electronic resources, the purposes for which they used the electronic resources, the perceived influences and the level of usages of the electronic resources. The study used quantitative and qualitative techniques to investigate the behavioral constructs of perceived usefulness (PU) and perceived ease of use (PEOU) as predictors of the usage acceptance of electronic resources by

distance learners. The study also investigated the inclusion of the behavioural constructs of subjective norms and facilitating conditions within TAM for the usage of electronic resources.

6.2.1 Perceived Usefulness (PU) of electronic resources

PU refers to the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). In the context of this study, PU was used to refer to the degree to which distance learners believed that using electronic resources enhanced their academic performance as well as activities. Several studies show that experience with technology and electronic resources is a good predictor for electronic resources usages behavior (Fourie and Bothma, 2005; Ma, Andersson and Streith, 2005; Kripanont, 2007; Ghazizadeh, Lee and Boyle, 2012). Many of these previous researchers on electronic acceptance were done using the Technology Acceptance Model developed by Davis (1989). In this current study, PU has been measured using three indicators, that is, self-efficacy, computer training and computer experience and skills. It was believed that these constructs would improve the TAM‟s predictive values for the usage of electronic resources by distance learners at UNAM.

Self-efficacy is a factor used in determining a prediction of a learner‟s intention to use electronic resources. Self-efficacy construct include both anxiety and enactive and vicarious experience regarding task-specific competencies (Ozoemelem, 2009). In this study, the self-efficacy of learners was highly rated in the sense that learners perceived their abilities to work with technology worthwhile and beneficial to their study. Learners saw goodness in electronic resources as discussed in the results presented in Table 5.5. Table 5.6 of this study, also indicated that more than half 139 (57%) of the learners felt the internet enhanced their ability to access the latest educational information. The results also showed that distance learners used electronic resources because they felt comfortable with them and acknowledged that learning through these resources enhances their academic performance. Tella, Tella, yeni and Omoba (2007, p. 3) assert that “students with high-self efficacy will be more likely to take advantage of what is around them if they are familiar and feel comfortable” with electronic resources. Psychologist Bandura (1994) stated that self-efficacy beliefs determine how people feel, think, motivate themselves and behave. This could mean that learners who did not believe in their ability to succeed in their

studies would not make the extra effort to use electronic resources to better themselves. In other words, such learners would shy away from tasks which they viewed as personal threats. One can however not confidently or truthfully say that, those who used print resources did not believe in their ability to succeed. For them to use print resources was a personal choice and because of lack of opportunities. However, the argument here is that there is so much wealth of up-to-date information in electronic resources. In this digital era, those who know how to use electronic resources and are digitally literate have a better chance to produce quality research assignments than those who use print only resources. Producing quality assignments and research output would also depend on the level of the learners‟ information literacy.

Brinkley *et al.* (1999) remarked that electronic resources can significantly open up the range of materials accessible to students. For optimal usage of library resources, it is evident from the findings of this study that learners need to be trained in the use of computers and need to have the necessary skills to effectively use these resources. Researchers such as Waldman (2003) believes that students who have more computer experience will be more likely to use the library's electronic resources and have higher self-efficacy. One can argue that exposure or access to computers tends to determine the users attitude towards use of such computers. Such learners would perceive computers as useful tools. These findings are also in line with the findings of Smart and Cappel (2006) that learners with more experience with technology and electronic resources rated it positively. Prior experience with technology also affected the learners‟ attitudes about technology. Learners‟ perception of this experience would probably have been more favourable if they had received training and had adequate skills in the use of computers.

Ren (2000) surveyed 85 students before and after library instruction and found that students‟ self-efficacy in electronic information searching increased after the training, and that the increase was related to attitudes, emotional experiences, search performance etc. These findings implied that training and library instructions are a very important determinant of learners‟ attitudes towards the use of electronic resources. “If learners received adequate training, then their attitude is altered positively and would therefore make better use of electronic resources and enhanced self-efficacy” (Ren 2000, p. 328). Tella, Tella, Ayeni, and Omoba (2007) in a study on self-efficacy and use of electronic information also found similar findings as Ren (2000). Tang and Tseng (2013) likewise found that students with high self-efficacy made better use of electronic

information and had better academic performance. They also discovered that self-efficacy, use of electronic resources and academic performance were significantly correlated. They further unearthed that students who expressed an interest in learning about the library's electronic resources were more likely to have higher self-efficacy. Waldman (2003) also noted that self-efficacy influenced learners‟ academic achievement at Baruch College at the City University of New York. In this current study, distance learners had very low self-esteem when it came to retrieving relevant electronic information from the internet. Low self-efficacy in electronic resources may have a direct effect on learners confidence, "which in turn affect their learning and academic performance" (Tang and Tseng, 2013, p. 517). Accordingly, a study by Leong (2007) on „Marketing electronic resources to distance students‟ in Australia found that students needed to know how to use electronic resources in order to effectively use them.

The current study finding are also in agreement with Vijayasarathy (2004) who states that usefulness has a stronger influence on intention than ease of use. In other words, learners of this study believed that electronic resources were very useful for their studies and in life. Results of the study further indicated learners‟ convictions that the standard of their academic work would suffer without electronic resource, and that it would be desirable for them to use electronic resources for studies (see results in Table 5.6). Tao (2008, p. 632) argued that:

> in a work/study related setting, electronic resources that can provide useful information will be used because useful information helps students improve their professional/ academic performances and ease of use is not the students‟ major concern for deciding to use the e-resources because they have some experience of using electronic resources and knew how to use them.

Similar to Tao‟s observation, the learners in this study were not so much concerned with whether electronic resources were easy to use, but rather whether they were useful for their livelihood. Authors such as and Davis (1989) and Chang, Li, Hung and Hwang (2005) found that when a user has little or no previous experience of using a system, they tend to pay more attention to the system‟s ease of use rather than its‟ usefulness. However, once they are familiarised with the

system, the system‟s usefulness then becomes a major concern and one of the factors used by users to determine whether or not to continue using the system.

The results of this study are consistent with the Technology Acceptance Model. According to this model, learners‟ behavioral intentions towards electronic resources are significantly influenced by the perceived usefulness. Perceived usefulness has consistently been a strong determinant of usage intention (Venkatesh and Davis, 2000). Usefulness is considered to be an important dimension in the choice of different kinds of library resources, and it is reasonable to argue that positive perception of electronic resources would lead to increased usage (Hong, Ridzuan and Kuek, 2003; Zha, Li and Yan, 2013). Students in general found electronic resources to be useful, despite the fact that they faced challenges.

There are several studies in the literature that have demonstrated that behavioural intention is a strong predictor of actual use (Chau and Hu, 2001), and most researchers prefer to measure technology acceptance using behavioural intentions (BIs) rather than actual technology use (Lu *et al.*, 2003). According to Ariff *et al.* (2012), behavioural intention (BI) is an indicator that shows the readiness of a person to perform certain behaviour (such as his intention to use electronic resources). Fishbein and Ajzen (1980) stressed that behavioral intentions is the probability or a measure of strength of one‟s intention to perform a specific behaviour. In other words, stronger behavioural intentions to use a technology will reflect the individual‟s acceptance and use of the technology. This current study also found that, some learners conveyed negative attitudes about electronic resources given their view that they would perform exceptionally well academically without using electronic resources. This means they did not believe that using electronic resources would enhance their academic performance, as one is bound to perform well whether they used electronic resources or not. These findings could imply that, those students who had this negative attitude used less electronic resources and had no desire to use them. Agboola‟s (2010) study in Nigerian universities on students‟ use of print and electronic resources asserts that users may convey negative attitude about information resources and services when their needs are not met, and instead of seeking help they are discouraged. Some of the responses from the study showed that students were doing well academically without using electronic resources. Results in Table 5.6 seem to support the foregoing

observation as show that 84 (35%) agreed with the statement, “I can avoid electronic resources and still perform well”. To amplify this statement Haddow (2013) notes that some students are doing extremely well while hardly ever…engaging with library services and resources (Haddow, 2013, citing Goodall and Pattern, 2011).

According to Tenopir (2003), users use electronic resources and most readily adopt them if the sources are seen as convenient, while still using print resources. What is encouraging in the results presented in Table 5.6 is that 130 (53%) agreed that electronic resources made them enjoy their studies; 126 (52%) agreed with the statement “I believe that using electronic resources for studies, research, assignment would be beneficial for me” and 101 (42%) agreed that the standard of their academic work would suffer without electronic resources. The observation here is that participants perceived electronic resources to be useful and beneficial for their academic performances. This shows that, student will use resources if they felt it was useful and beneficial to use them. Results of this study also showed that perceived usefulness had the significant impact on both intention to use and actual use of electronic resources while the effect of ease of use on intention to use and actual use was mediated by perceived usefulness (Tao, 2009). These results imply that distance learners will use electronic resources if they provide useful information that would improve their academic performance. Learners‟ usage and preference of electronic resources were the main focus of this study. Agboola (2010) therefore advises that it is important to understand how learners accessed electronic resources and the platform on which they use to have access.

This study is of the view that perceived usefulness will increase learners‟ use of electronic resources. Exploring the next determinant of TAM (PEOU) will give insight on how users perceived the electronic resources.

6.2.2 Perceived Ease of Use (PEOU) of electronic resources

PEOU is a determinant referring to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). When users perceive more effort is required to use electronic resources in a university library, then according to TAM, they would perceive electronic resources to be less useful. In this study, perceived ease of use was measured using

System designs (i.e. UNAM website, portals and databases subscribed to by UNAM library). The University of Namibia provides student access to electronic resources via their website http://library.unam.na. It was therefore important to understand how easy it is for learners to use the library website to access electronic resources subscribed to by the UNAM library.

According to Singh and Jindal (2009, p. 436):

> the library website is created as a tool to serve the user and professionals. It provides up to date information on library collection, library rules and regulations, online services, it links to the major e-journal databases, publications of library professionals, and links to other central universities. As far as electronic resources are concerned, library website enlists all the resources on a single web page termed as „Online Services". It further provides links to subscribed databases through the „Online Service" webpage. The website keeps the user up-to-date as far as the databases are concerned. Once the users are aware of the availability of the website they will use it to access information. Besides, the website provides e-referencing service.

The study"s findings revealed that the users did not find the website easy to use, neither was it user friendly. Moreover, learners were neither happy with the interface nor the design of the website. One respondent remarked that "UNAM website is too large for small phones. " Why can"t they make smaller website for small phones?" According to Olle and Borrego"s (2010) findings in a qualitative study on the impact of electronic journals on the information behavior of academic researchers at Catalan universities most complaints by learners" referred to the diversity and complexity of search interface. Equally, learners did not know the proxy to access electronic resources off campus. The UNAM web page was not user friendly. According to Leong (2007) websites provide excellent and valid resources for students. Kelley and Orr (2003, p. 185) note that the most effective means to reach students, is through the library home page. This finding strongly suggests that the "library needs to ensure that its home page is current,

updated regularly, and provides information in a format that is helpful to students because they consider this source of information the most effective means for reaching them".

Distance learners normally want electronic resources to be easily accessible anytime and anywhere and to provide full text online material (Leong, 2007). What is more, Kim (2011) states that if the library website is simple to use, then users are and would most likely to use it more often. This implies that learners who perceive websites as easy to use will make use of them. If their level of PEOU towards the website is higher, then the acceptance and usage of the website will also be higher. The PEOU of a website is important in influencing the learners" decision whether to accept or reject the websites. Therefore, the library website interface and interactive design plays a role in its use. This implies that the easier the interface and interactive design, the more the use. Users are normally convinced by simplicity, logical information layouts, customization, and easy browsing of a library website. Ramayah (2006, p. 125) argues that "an application perceived to be easier to use is more likely to be accepted by the users" in Malaysia. However, even though learners perceived the website and database not easy to use, they still used the electronic resources and the internet (see results Table 5.16). These findings are in line with those of Venkatesh (2000), who, in concurrence with the works of previous authors noted that perceived ease of use is an important factor that influences users" acceptance and usage behavior of information technologies. The findings from this current study are in line with Ndubisi *et al.* (2001 cited in Ramayah, 2006, p. 125) assertion that "perceived ease of use has no effect on usage of technology". Some learners still used electronic resources even though there were obstacles which made it difficult for them to effectively use them. Similarly, a study conducted by Aramide and Bolarinwa (2010, p. 9) at the Ibadan Study Centre in Nigeria, revealed that "perceived ease of use has a positive relationship with use of audiovisual and electronic resources".

Ease of use was a concern to the distance learners because the website design inhibited them from successfully using electronic resources especially from their mobile devices. Marchewka, Liu and Kostiwa (2007, p. 94) noted that "concerns for ease of use may become non-significant over extended and sustained usage. Therefore, perceived ease of use can be expected to be more salient only in the early stages". The general beliefs regarding computer use should be

considered an important factor driving perceived ease of use of electronic resources. As long as the systems are easy to use, and are user friendly and free of efforts, learners will use them. According to Zacharis (2012) perceived ease of use is a strong predictor of perceived usefulness. This supports the view that perceived ease of use of the website at UNAM was a driver with regard to willingness to adopt electronic resources as a learning tool.

6.2.3 Subjective Norms and use of electronic resources

Subjective norms in the context of this study refer to learners‟ perceptions regarding the use of electronic resources by opinions of referent groups (such as friends, lecturers, or colleagues). These referent groups are also referred to as normative beliefs (Shih and Fang, 2004). The behaviours of the few distance learners who used electronic resources were influenced by their peers, lecturers, and adequate marketing and promotion of these resources to the students by the librarians. The learners‟ behaviours to use electronic resources were influenced by external factors suggesting that there was a degree of social influence. Influence that comes from other peers or external groups may easily influence learners‟ decision to use electronic resources‟ technologies. Findings in this study also conformed to Danner and Pessu‟s (2013) observation that learners learn computer usage from friends.

Findings from Bassi and Camble‟s (2011) study at the University libraries of Adamawa State, Nigeria showed that most of the students acquired their skills to use electronic resources from friends, colleagues and library instructions. This was also supported by Callinan (2005, p. 96) who indicated in her study on undergraduate biology students at University College Dublin that “students were more likely to ask their peers for assistance in using the library and its resources rather than ask library staff”. A study by Lee *et al.* (2003) on technology acceptance and social networking in distance learning uncovered that individual perceptions of information technologies were likely to be influenced by their interaction with other users. Library users‟ perception of a system was influenced by the way people around them evaluated and used it (Trevino, Lengel and Daft, 1987). Information seeking behaviour theorist, Wilson (2004, para.49) confirmed that the reason for this behaviour or attitude “seems generally to have been

recognition on the part of clients that their own attempts at searching (and occasionally attempts by others) had been less than completely effective".

Learners were therefore asked to indicate how they learned to use information sources relevant to their studies. Social factors were found to positively influence intention to use electronic resources. Results in Table 5.9 revealed that 83 (34%) of the respondents found out how to use information resources from their friends; and 71 (29%) found out from lecturers‟ notes. The study found that these referent groups had a greater influence on the students‟ opinions on whether to use electronic resources or not. Results in section 5.5.2 revealed that lecturers guided students to search library resources using databases and Google Scholar as a way of marketing the resources to them. In the present, internet search engines, especially Google and Google scholar, are now amongst the most important sources of information for researchers and students. Many scholars value these tools highly due to their speed and relevance ranking (Olle and Borrego, 2010).

6.2.4 Facilitating Conditions and use of electronic resources

Facilitating conditions are those "factors that are present in the environment that exert an influence over a person‟s desire to perform a task … and shape a person‟s perception of ease or difficulty of performing a task" (Teo, 2010, p. 69; Teo, 2012, p. 75). Facilitating conditions is a core construct of TPB and DTPB. While this was not part of the main theory of this study, the researcher felt however this variable was very influential in predicting users‟ behaviours. This variable was therefore borrowed from TPB and DTPB to help examine certain facilitating conditions for using electronic resources by learners. Results of this study revealed that there were various environmental factors that impacted learners‟ intentions to use electronic resources. Teo (2010, p. 67) believed that environmental factors such as facilitating conditions

> are selected because acceptance of a specific information technology is affected by how users perceive their environment in terms of how computers are received and used. The technical factor is selected for its role in affecting how users perceived the use of computers to be free of effort.

Learners consulted in this study rated skills training in the use of computers and technology assistance from the library staff, information literacy training, internet connection, administrative staff, and ICT infrastructure as important factors that influenced their positive use of electronic resources. Specifically, facilitating conditions (website design) were found by the learners to have a significant influence on perceive ease of use. This construct was significant in predicting learners‟ attitude to computer use and electronic resources. It was revealed that learners used the website despite them finding it to be less user friendly. If facilitating conditions are not adequate or sufficient they can negatively influence learners‟ attitudes and behavioural intention to use electronic resources. ICT infrastructures as facilitating condition in this study therefore had influence on the learners‟ behavioural intention and attitude towards the use of electronic resources. Salim (2012) asserts that facilitating conditions with behavioural intention have significant impact on users‟ behaviuors.

Furthermore, some learners strongly agreed that they did not need assistance with electronic resources for the mere fact that they did not use them. However some agreed that they needed the assistance of a librarian and training in the use of electronic resources. They perceived their knowledge level on issues relating to library resources very low and also did not have the necessary facilities to use electronic resources off campus.

6.2.5 Distance learners' frequency of using electronic resources and preferred formats

The study also sought to establish the frequency of use of electronic resources by learners; preferred formats and their general perception of electronic resources. Extant literature has shown that libraries are seeing a decrease in traditional use patterns by students. This declining usage of resources according to Tyagi (2011) is attributed to desktop access to online catalogues, bibliographic databases, and full-text journals. Kelley and Orr (2003) noted in their study at Indian Institutes of Technology (IIT) Roorkee, that part-time students‟ usage patterns had changed, with students now increasingly favouring the use of electronic resources, particularly the internet, which has become the primary source for information acquisition (Tang and Tseng, 2013). A study carried out by Nina (2008) to determine the students‟ use of the library resources

and self-efficacy at the Thapathali College, NCCS (National College of Computer Science) and Kathmandu University also found that:

> Library books, e-journals and Internet were the most popular source of information for the course work and research. The place of Google in the student‟s information behavior was prominent and positively correlated to use of traditional library resources.

The rapid development of technology has changed online learners' preferences for accessing information resources. This is more so for distance learners who do not have physical access to a library (Tang and Tseng, 2013). In order to analyse and gauge learners‟ views regarding the frequency of using electronic resources particularly those provided by the UNAM library, this study asked how often they used electronic resources. The results reflected in Table 5.7 show that less than half 75 (31%) used electronic resources „most of the time‟ and „sometimes‟ respectively. These findings were also consistent with those reported by the CES lecturers indicating that distance learners at UNAM did not use electronic resources.

The respondents were also asked to indicate whether they preferred electronic resources to print resources for conducting research and completing assignments. It was found that the use of print resources was the most preferred format, though a few students preferred to use electronic resources. More than half 128 (53%) of the distance learners as presented in Table 5.8 preferred using both print and electronic resources. This finding conforms to that of Mawindo (2005), whose study at the University Of Malawi College Of Medicine also revealed that students used both print and electronic resources, with a majority using more of print resources in comparison to electronic resources. Ray and Day (1998) in a related study also found that while many respondents agreed using some electronic resources, a majority still preferred using printed material for complementary purposes.

The results in Table 5.8 also came to the same conclusion, showing that74 (31%) preferred print only resources as against 37 (15%) who preferred electronic only. By and large, drawing from the findings, it can be said that though a significant number of 37 (15%) distance learners at UNAM used electronic resources and another 84 (35%)- (in Table 5.6) desired to use electronic resources, majority favoured the use of print resources. The preference by learners to use print

resources are highlighted in the literature studies by Mawindo (2005); Dhanavandan, Mohammed and Nagarajan (2012); and Ji, Michaels and Waterman (2014), who identify various reasons including portability, flexibility, less eyestrain, easiness to use multiple resources at the same time and convenience of use. Findings from Mawindo (2005) showed that students preferred print resources to electronic because of the lack of sufficient computers and the lack/inadequate mastery and knowledge of the use of computer and information technologies. Students also found it difficult reading from computer screens for reason that not only was it more fatiguing, but it also decreased comprehension (Dillon, McKnight and Richardson, 1988). The results from the open-ended questions in this current study support the view that cost, access and electricity were the major setbacks to why learners opted for print resources.

The results of the current study suggest that given the opportunity, many students 126 (52%) would use electronic resources for various reasons indicated in Table 5.5. Tao (2009) asserts that most people preferred to use electronic resources to traditional print information. A study by Connolly (1999) conducted in the UK on interblending and document supply found that information seekers were increasingly using electronic resources to access and retrieve information. Liu and Luo (2011) in a related study found that over 13% of undergraduate as well as graduate students used digital libraries to find electronic resources in addition to print resources. Swain and Panda (2009) argued that library users‟ attitude towards information is gradually shifting from printed documents to electronic resources. Leong (2007) agrees and observes that students have a strong preference to use database which contains a high percentage of full-text materials.

6.3 Electronic Resources, Services and ICT facilities Available to Distance Learners at UNAM

This study built on the assumption that the UNAM library is well resourced to adequately cater for the information needs of distance learners by providing the needed electronic resources. Leong (2007, p. 78) is of the opinion that the best product mix in a library‟s collection “includes not only subscription database but also free web resources, electronic course reserves and electronic examination papers”. UNAM library website provides access to a number of

electronic resources such as online databases, e-journals, e-books, CDROM databases, OPAC etc. In 2014 a total amount of N$ 319 000 about six percent of the budget was reserved for electronic resources. These resources are available for use by all students whether full time or distance. However, the practical use of electronic resources is not commensurate to investments made in acquiring these resources (Sharma, 2009). A study by Olle and Borrego (2010) noted that a number of learners seem unaware that most of the electronic resources they consulted were accessible at no cost to users. One student remarked that "most relevant documents online are available at a cost making it hard to access". This suggests that learners are unaware as to whether or not electronic resources are freely available to them at UNAM library. Most learners neither knew if their library offered electronic resources, nor did they know how to access them.

Centre coordinators were asked to indicate what electronic resources and digital services their centres provided. They were also asked what ICT facilities were available for use by distance learners at their learning centres. Results from the centre coordinators‟ showed that electronic resources such as DVD and CD-ROM databases were available at the centres for use by the learners. The results in Table 5.6 indicated that 77 (32%) of learners strongly agreed that the CD-ROM were becoming unpopular amongst students. Crawford and Daye (2000) at Glasgow Caledonian University Library found that students felt more at ease using online (Web-based) resources than CD-ROM databases. Moreover students found CD-ROMs less user-friendly with a less intuitive interface. However, Tella, Tella, Ayeni, and Omoba (2007) observed that students get their electronic information resources from the internet; email; electronic journals; bulletin boards; telephone; telex; electronic journals, electronic books and also from CD-ROM databases.

To ensure excellent library services for distance learners Feldheim, King, and Sherman (2004) highlighted some requirement by the Association of College and Research Libraries (ACRL). The Association of College and Research Libraries (ACRL) provides guidelines for distance learning library services. These guidelines stipulate that "library resources and services must meet the needs of all faculty and students regardless of the location, and that library materials and services provided to distance education participants should be equivalent to services provided in traditional settings" (Feldheim, King, and Sherman, 2004, p. 237). The results of the current study revealed that most of the students reported inadequate resources and facilities

available to them. The results showed that UNAM library clearly did not meet the standards of ACRL. A large number of learners were not satisfied with the infrastructures available both at the main campus library and the learning centres. Most of the students and lecturers indicated their dissatisfaction with IT infrastructure.

The findings further revealed that UNAM lacked the necessary ICT required by distance learners to effectively use the electronic resources. Egberongbe (2011) notes that inadequate provision of infrastructure is often attributed to the lack of adequate financial support for hardware and software infrastructure. This could also be the reason why most lecturers still attached importance to print materials. It was observed that all the learning centres excluding the main campus of UNAM library did not have adequate facilities, that is, computers connected to the internet and wireless technologies. It was also observed that there were insufficient computers for learners‟ use. Some learning centres had one or two computers which in many instances were not working. Similarly, Liu and Luo (2011) in their study noted that graduate students commonly reported the lack of enough resources relevant to their interest.

This study as earlier indicated aimed to investigate the level of respondents‟ awareness of electronic resources and the extent utilisation of the resources by distance learners. The research findings uncovered that respondents are using electronic resources and are aware of their existence, but remain confronted with the challenge of lack of or inadequate infrastructural provisions to use these resources. Given this, the study also identified the issue of low and or limited usage of electronic resources.

6.4 The Level of Awareness about Electronic Resources Available in the UNAM Library

Libraries are beginning to place more emphasis on remotely accessible electronic resources, including journals, newspapers, magazines, and reference books (Gandhi, 2003). Most academic libraries provide access to scholarly literature that is not freely available on the World Wide Web. According to Tyagi (2011, p. 6) “users often become aware of library resources when they are in college while having to write research papers, projects and assignments”. Understanding how distance learners navigate this maze of resources is important to librarians‟ in order to help them develop strategies which would help instruct distance learners how to effectively use

electronic resources in the library. This study therefore sought to find out whether learners were aware about the availability of electronic resources in the UNAM library.

The findings further revealed that though access to electronic resources was readily available very few of the learners knew about them and used them. About 75 (31%) of learners were found to be using electronic resources „most of the time and sometimes" (see Table 5.7). This implies that learners are not aware of the various electronic resources subscribed to by the UNAM library. Okiki (2012) found that awareness among respondents was low for most of the library"s electronic resources. About 58 percent of all respondents in this study were not sure if their library offered access to online databases. Similarly, Callinan (2005) found that apart from websites and web-based lecture notes, students at University College Dublin, experienced a lack of awareness. This according to her was the primary reason why undergraduate biology students did not use the library"s electronic databases. Ramsy and ur Rehman (2004), also found that many health students professionals at Kuwait University reported that time constraints, lack of awareness, and low skill levels were among the primary constraints they experienced in an attempt to access and use electronic resources. According to Adeniran (2013) even though respondents were aware of the different types of electronic information resources available in the university library, their use rate of these resources was very low. According to Kelley and Orr (2003, p. 180) a large percentage of under graduates were not aware of the availability of the library"s online resources and this lack of awareness was attributed to the fact that:

1. Students were widely dispersed across the State of Maryland and the United States so their knowledge of the library was less.
2. There had not previously been a required course about the library and its resources for under graduates.
3. There was much wider student knowledge of the free Web, and students tended to prefer to use it.

Similarly, Kelley and Orr (2003); Asemi and Riyahiniya (2007) surveyed students of Isfahan University of Medical Science to ascertain their awareness of digital resources and found that the majority of students were more aware of offline and online databases. Learners of this study were asked to indicate methods used to find relevant information on the internet. Results in

section 5.7.3 show that 61% used search engines and only eight percent used the library OPAC. This implies that the awareness level of learners about library electronic resources are lower, and those who are not aware of the existence of electronic resources instead opted to use search engines to meet their information needs. This also implied that they would first go for web based resources rather than library electronic resources. This perhaps could be attributed to the fact that some lecturers encouraged learners to use the internet and Google, given that one lecturer remarked by saying "I also explain to them how to access the electronic journals and how to search on the sites". Another lecturer said: "I always give list of credible websites and I refer them to the internet". It was not very clear which electronic journals and the internet sites the lecturers referred learners to consult and explore.

Tyagi‟s (2011) findings revealed that users were mostly aware about the availability of online journals through the library, and made maximum use of them for various purposes. Learners‟ in this study were however not aware of the electronic resources subscribed to by the UNAM library except perhaps for those which they were referred to by their lecturers. One learner in this study remarked that "distance learners should be given enough information to be able to access electronic resources". These results implied that there was low level of awareness on the availability of electronic resources. This lack of awareness could have negative effect on the level of utilisation of the electronic resources by the learners.

The study also sought to find out whether there were any marketing or promotion strategies for electronic resources at UNAM library. This question was vital because one of the possible reasons for the "slow uptake and acceptance of electronic resources in academic institutions is due to a lack of promotion and instruction on the part of libraries" (Berg, Hoffmann and Dawson, 2010, p. 519). Results of this study indicated that besides having a website, there was very little marketing done to promote electronic resources to distance learners. The Librarians felt that learners‟ lacked awareness of the many electronic resources provided or subscribed to by the library. However, a surprising finding contradicting the librarians‟ statement and those by the learners was that, five (63%) centre coordinators stated that they promoted and marketed electronic resources to learners through the following activities:

- Orientation at the beginning of the academic year and also during student support sessions.
- Putting up posters near the computers.

Clearly, the library and the centre coordinators seemed to be doing some sort of marketing. However, even though there was some marketing done by both centre coordinators and the library, very little marketing was done to create awareness of the electronic resources available to learners. Marketing electronic resources is important because it makes learners aware of the wealth of resources available, helps them to achieve proficiency in their use and results in increased usage (Leong, 2007).

Many libraries around the world are using the Web as the primary means of marketing their services (Latham and Smith, 2003) though the UNAM library is not taking advantage of this platform to reach out to its distance learners. Promoting use of electronic resources should be multipronged and should include a well-designed website from where learners can access electronic information. Kelley and Orr (2003, p. 187) findings indicate that the library must "continue to enhance its program to educate students about using the free Web effectively and encourage greater use of the library"s databases". However, in order for distance students to effectively utilise the growing range of electronic resources, they must acquire skills necessary to exploit the resources. The skills include knowledge of the structure of the database and instructions for searching (Ozoemelem, 2009).

The study confirmed that the level of awareness of the subscribed electronic information resources by the learners was rather low. Likewise it revealed that distance learners at UNAM were not using electronic resources to a large extent because of lack of awareness. Ibrahim (2004, p. 18) reported findings from his study where he measured the use and perception of the United Arab Emirates University (UAEU) faculty members about electronic resources. Analysis confirmed frequency of use of electronic resources was low. Reasons cited were "lack of time because of the time needed to focus on teaching; lack of awareness about electronic resources provided by the library; ineffective communication channels, and language barrier". Although, Ibrahim studied faculty members, his findings are relevant for this study as it gives an insight into some of the challenges faced by academic staff. This current study also sought opinions of

academic staff members responsible for teaching/ tutoring distance learners at UNAM on the use of electronic resources and its importance. This was significant to this study because it was believed that if lecturers themselves did not use electronic resources, their behavior could influence learners to either use electronic resources or not. They too indicated similar challenges as those highlighted by Ibrahim (2004). This could imply that in as much as they want to provide the best ways to teach distance learners, they too were faced with many challenges.

6.5 ICT Competencies required by Distance Learners to Effectively Use Electronic Resources

In the information economy, students are demanding to be equipped with the technological skills to survive in a highly changeable society (Johnson, 2010). UNAM has realised the importance of incorporating computers and electronic information sources in their collection as a way to keep all learners (full time and distance) informed with knowledge to succeed in a knowledge base society in the 21st century. However, incorporating resources alone will not provide learners with the necessary skills to succeed in the 21st century. Tang and Tseng (2013, p. 517) posit that "understanding distance learners' online information seeking capabilities and experience will help librarians to develop instructional courses that can enhance students' information literacy skills". In this vein, learners‟ must have skills in order to effectively retrieve and use electronic information resources. These competencies are defined as "high levels of knowledge, values, skills, personal dispositions, sensitivities and capabilities, and the ability to put those skills into practice in an appropriate way" (Commonwealth Department of Education, Science and Training, 2002 cited in Danner and Pessu, 2013, p. 36). This study therefore, aimed to find out distance learners‟ perceived skills and ICT competencies in the use of electronic resources and how they have acquired such skills.

Hee (1998, p. 5) observed that "students are left to fend for themselves" when searching for relevant information from the library. The question: "How have you learned to use electronic resources?" was asked. The results in section 5.6.1 showed that, 127 (52%) of the learners taught themselves on how use electronic resources. Findings in section 5.6.1 further revealed that 45 (19%) learned through the guidance of a lecturer while 32 (13%) learned through the guidance of a library staff. According to Ramsy and ur Rehman (2004, p. 155) at Kuwait University "users

perceived that formal training programs and active involvement of librarians in providing the training are the crucial steps that can facilitate effective use of these resources". Adeniran (2013) observed that when college students seek help at the library, librarians are the clear choice. Respondents who have used a librarian for assistance agree that librarians add value to their search processes. Asemi and Riyahiniya (2007) noted that half of users preferred to make online/CD-ROM database searches by themselves to avoid garbage and overload, though one third preferred to get it done with a librarian's help because they felt that medical librarians were more conversant with such services.

Gibbs (2000) suggests that a dedicated librarian should be employed to be responsible for working with distance students to ensure that they obtain services such as user education, reference and referral assistance and document delivery. It was observed that the UNAM library had a dedicated subject librarian; however the interview with the librarians revealed that students were not aware who their subject librarian was. Thachill (2008 cited in Okello-Obura and Ikoja-Odongo, 2010) argues that learners need the expertise of a librarian to apply search techniques and in finding the information they needed. Some contrary findings from Nor‟s (2011) study at University Sains Malaysia revealed that only about 40% of the respondents needed help from friends to do the assignments and 50% would contact their lecturer if they had any problems. Adeniran (2013) found in a study on „Usage of electronic resources by undergraduates at the Redeemer‟s University, Nigeria‟ that 54% of college students did not seek assistance when using library electronic resources. With the proper training and exposure learners would be able to use electronic resources themselves.

The study also sought to establish the level of schooling at which learners learned to use a computer and the results are given in Table 5.10. It was observed that less than half 96 (40%) of the respondents learned to use a computer at Diploma level and 75 (31%) were introduced to computers at secondary school. Most of the learners acquired limited skills in the use of ICTs particularly computers in Secondary School. Nash (2009) posits that school leavers may not possess the necessary computer skills for their university education. Effective usage of electronic resources was more common amongst learners who had prior experience with electronic resources and at the same time had been introduced to ICT earlier in their lives. Clearly, not

many of the learners surveyed were exposed to computer use before. As a result, such learners did not use the electronic resources because they did not know how to use systems required in retrieving electronic information resources. Maurer (1994 cited in Eyadat, 2006, p. 46) argues that "experience level with computers plays a greater role than do exposure (access) and training, in determining the student‟s attitudes and levels of anxiety". According to Kuh and Vesper (2001 cited in Johnson, 2010) students who had increased familiarity in using computers during college significantly contributed to their developmental skills and competencies after college. Similarly, Eyadat (2006) found that students who take computer classes become experienced and tend to display a more favourable attitude towards computer than those who do not take such classes. Indeed experience levels with computers play a significant role in determining students‟ attitudes and perceptions towards electronic resources.

Results in Table 5.12 show that 116 (48%) of learners had experience of more than four years with computer usage and about 35 (14%) had less than one year experience in computer use. Not many learners had sufficient number of years of computer experience. These results imply that learners with high number of years of computer experience were more likely to use the electronic resources more than those with inadequate number of years of computer experience. Along the same line, Eyadat (2006) confirmed that the longer one uses computers, the more experience they will accumulate, and the more positive their attitude towards computer technology. In other words, people who use digital libraries more frequently tend to have a more positive experience than those who used digital libraries less frequently (Liu and Luo, 2011). This indeed confirms that prior experience with computers is the best predictor of students‟ attitude towards them. Computers use is a significant predictor of electronic resources use. Kripanont, (2007, p. 90) argues that "behavioral intention is more predictive of usage behaviour when individuals have had prior experience with technology".

It was important for this study to find out what computer skills learners required to access electronic information resources in the libraries. Learners complained about the need to be taught how to use computers, how to search information on the internet, how to find information in electronic journals and search engines. Here are some of the comments raised by learners: "We need skills on how to search for more information like e-journals from computers", "We need

classes on how to search information using UNAM website". Students found the use of ICT troublesome or beyond their capabilities. One respondent remarked "I don"t know how to open the e-mail, portal, downloading materials from internet…just don"t know how do it". Even though training was provided to learners by the centre coordinators, six of them indicated that learners were not ICT competent. According to Kripanont (2007) there are variables such as computer experience, computer self-efficacy, computer skills as predictors of computer use.

Previous studies by Hee (1998) that looked at ICT competencies concurred with Agboola (2010) that library and information centres are encouraged to impart basic IT knowledge and skills to their staff and users. Gaba and Sethy (2010, p. 154) found in their study on learners perception towards information and communication technologies at Indira Gandhi National Open University that ICTs help students in the following ways:

- It helps them to use their present ideas and understand audiences;
- It helps them to communicate with known and unknown peer groups;
- It supports the knowledge building among peer groups;
- It helps them to locate information from a wide range of on-line and multi-media resources to support their learning; and
- It supports knowledge building among teams and enables team members to collaborate, enquire, interact and integrate prior knowledge with new understanding.

Experience was clearly theorized as a moderator in TAM, in that experience significantly moderated the influence of subjective norms toward behavioral intention (Kripanont, 2007). Students need to have computer skills as well as information skills on how to use OPAC.

Brinkley *et al.* (1999) assert that owning, or having access to technology is usually only a first step. Even more important is learning how to use it. This is one of the biggest challenges facing anyone who wishes to use electronic tools, because the knowledge is not always easy to acquire. Knowing how to access electronic resources through the UNAM website was crucial because according to Haddow (2013) most of the electronic resources available to users are available on

the library website. In his study on users‟ perceptions of university websites, Kim (2011) highlighted the need for library users to have technical skills to use university website resources.

Students were also asked to state what their information and communication technology skills were. A few of the students had skills in the use of computers, than skills in formulating search queries. Only eight percent of the distance learners highlighted that they had skills in the use of CD-ROM, OPAC, subject gateways etc. (see results in Figure 5.1). One of the learners remarked that: “Distance students should be given classes on how to access OPAC, twitter, Facebook, CD-ROM, electronic book, journal, and group Google for them to access useful information”. These findings are in accord with the views expressed by Gibbs (2000), who noted that distance learners frequently possess inadequate knowledge and experience in library research, electronic informational resources, and technology in general. Okello-Obura and Ikoja-Odongo (2010) advise that an adequate knowledge of computers and retrieval techniques is desirable to search these resources effectively. Aqili, and Moghaddam (2008) argued that people who are multi-skillful, or information literate, can deal with digital resources effectively and have little technophobia.

Results in Table 5.11 however indicate that 231 (95%) performed word processing on computers and 201 (83%) performed internet mail. The results of the study also illustrate that the skills to navigate or perform tasks on the internet as well as successfully use electronic resources at university level were a necessity. These findings contradict remarks by lecturers, who noted that learners were computer illiterate and had problems writing their assignments. It is evident from the results that, students knew how to use computers especially when it comes to typing their assignments. The challenges perhaps were that they lacked searching skills for electronic information relevant to their assignments. One can conclude that learners did not receive adequate training in the use of electronic resources from both the centre coordinators and the main campus library staff.

Elsewhere, Mawindo (2005, p. 3) explains that:

> issues of training are important if students do not have sufficient skills to access electronic resources. Lack of computer and

> information retrieval skills lead to their underutilization of the electronic resources.

Furthermore, she stressed that "users" have the notion that information seeking in the electronic age is a simple process" (Mawindo, 2005, p. 3). This is however not the case, considering that this study"s findings showed that students struggled to access resources and lack searching skills. Although five centre coordinators provided ICT skills training to users- (see results in 5.6.4), the evidence suggests that it was not adequate because many learners still complained of lack of skills. Learners indicated that they needed training in the use of computers and electronic resources. This was clear from the remarks by one of the learners who said: "some of us never got training on the usage of computer (internet)". These findings from the learners regarding inadequate skills in the use of ICT are supported by Okello-Obura and Ikoja-Odongo (2010) who argue that library users cannot access electronic resources without adequate computer skills. They posed the questions: How do you access electronic resources when you are not comfortable with computer usage? How can you when you do not know how to navigate through the internet? Centre coordinators also noted that distance learners were not ICT competent. It would therefore seem appropriate to ensure that students received basic bibliographic instructions on the use of electronic resources earlier in their academic year or even yearly until up to their final year of study. This particular training for distance students should be tailored to meet the specific needs of students in all years of their studies and should be different from that of full time students (Callinan, 2005). This is because distance learners have a different set of information needs to those of full time students and require a different kind of treatment i.e. advanced and involving training skills. Their usage patterns and preferred formats of information resources have changed (Kelley and Orr, 2003; Tang and Tseng, 2013).

Learners were also asked if they had received library orientation, training in information literacy and internet searching skills. The study results indicated in section 5.6.4 that a high number of distance learners 114 (47%) received training in internet searching skills while 52 (21%) received library orientation and 50 (21%) received training in information literacy. Callinan"s (2005) findings on undergraduate students at University College Dublin revealed that participation in orientation tours by students was very low. She also cited Cloughert *et al.* (1998)

who also indicated a low uptake of library instruction by students. This low participation was attributed to the fact that students were not aware such orientation existed. In the current study training offered to learners was inadequate or learners were not aware of the existence of the resources. Some of the comments raised by learners were that they needed "training on how to search information in the library through internet, because some of us never got training on the usage of computer (internet)"; "Training on how to use the internet kneed to be offered at university level"; "More practical training on how to use computers for students please". The UNAM library must therefore provide library orientation to distance learners so that they can not only be skilled but also become information literate for lifelong learning. Tang and Tseng (2013, p. 517) indicated that such programmes should "cover research strategies, scholarly information identification, website evaluation, plagiarism prevention, etc". They further noted the importance for "educators to ensure that students have the ability and confidence to retrieve valuable information, that they possess the skills to use and manipulate the library's electronic resources".

Agboola (2010, p. 65) suggests that universities should introduce a yearly orientation and library program into the general undergraduate curriculum to help students" better use library resources. Internet training is also needed to ensure that students acquire the essential skills for internet use. Similarly, Berg, Hoffmann, and Dawson (2010) also suggest that user education about electronic books is key and should not be overlooked. User education should also promote the existence of electronic books in library collection. The UNAM library need to develop and implement general ICT training programs on computer skills as they will have a strong influence on the acceptance and sustained usage of electronic resources.

When asked how they perceived their level of information skills, more than half 132 (54%) of the students indicated that it was „good" while 18 (seven percent) said it was „poor". The present study has thus demonstrated that though distance learners generally had good perception about their information skills, they found it difficult to use electronic resources because of the lack of ICT skills and experience in the use of CD-ROM, OPAC etc.; knowledge of databases and formulating search queries in the use of electronic resources (see results in Figure 5.1). These findings are consistent with earlier studies, by Kajee and Balfour (2011) who found that one of the greatest challenge noted by students about technology was their lack of technological skills.

In order to make proper use of electronic resources by distance learners at University of Namibia, there is a need to understand the attitudes of learners towards the use of such resources. It was important to know the level or extent of use of electronic resources by distance learners at UNAM.

6.6 The level of use of electronic resources by distance learners

This study intended to investigate both usage behavior and behavioral intention because this helped in predicting current usage of electronic resources by distance learners. It was expected that usage behavior influenced behavioral intention to use electronic resources. The study therefore, sought to establish whether distance learners used electronic resources or not and which resources were mostly used, the purpose and reasons they choose to use them. Tyagi, (2011, p.17) puts forward an interesting point of departure on reasons why users seek and use information. He noted that:

> In terms of information seeking, today‟s user seems to be comfortable with using a wide variety of sources for information. Internet search engines, e-print servers, author Web sites, full-text databases, electronic journals, and print resources are all used to some degree by most users. Both browsing and searching remain important information-seeking behaviours, but there is some evidence that the amount of searching is going up when users have access to multi-title, full-text databases…Convenience remains the single most important factor for information use–all types of users prefer electronic journals only if they make their work easier and give them the information they need.

In order to establish the level of usage, one of the questions asked was for learners to indicate the tools used to get access to information sources. A review of the data analysed under the sixth research theme, which looked at the level of use of electronic resources by distance learners revealed that, there were learners who used both print and electronic resources but there was a higher preference for print resources than electronic resources (See results in Table 5.8). It was

however, evident in the results that very few learners, approximately 75 (31%) used electronic resources „most of the time" and „sometimes" respectively (see Table 5.7) though, they had a positive attitude towards electronic resources. Based on these findings, it can be deduced that learners had low levels of electronic resource use and that they also did not make use of electronic resources subscribed to by the UNAM library. This view is depicted in the results in Table 5.16 which show that learners rarely used electronic journals, electronic books, scientific databases and library electronic resources. One problem faced by users, when using electronic resources is that such resources are not seen as being straightforward (Ozoemelem, 2009). This could perhaps be one of the many reasons why distance students shied away from using electronic resources subscribed to by the University of Namibia library. Many studies have reported low usage of electronic resources (Okiki, 2012; Adeniran, 2013). The results of Damilola"s (2013) study on the use of electronic resources by distance students in Nigeria, showed very low usage of electronic resources, coupled with the low level of awareness among the students.

Respondents were asked whether they had a personal computer or a laptop. A majority 177 (73%) of distance learners had access to a computer while a minority 64 (26%) did not have access to a computer or owned a laptop (see results in section 5.6.2). To access electronic resources, a user needs to have a computer or a laptop connected to the internet. Therefore, respondents were asked to state where they accessed electronic resources from. The results in section 5.6.2 further indicated that less than 96 (40%) of the learners had access to networked computers at the learning centres, about 33 (14%) had access to networked computers or laptop from internet café while 19 (eight percent) accessed a networked computer or laptop from home. It was observed that very few students opted to gain access to internet facilities from the learning centres because of the fact that they did not have networked computers or laptop at home. Gaining access to the facilities at the learning centres was their only way of doing research, projects and assignments. This was an advantage for the students surveyed because the Internet services enabled them to search for relevant information in research topics, latest discoveries and information on all disciplines/subjects.

In their study, Turkish university students‟ technology use profiles and their thoughts about distance education, Baran, Kilic, Corez and Cagiltay (2010) found that the students preferred to access the internet from either the internet cafes or their homes. Similar findings were found in this study. Students were asked to state where they accessed electronic resources from. Most of them preferred to access electronic resources from the internet either at home or at the learning centres. One of the reasons for this preference was attributed to the fact that, majority of learners indicated that they did not have personal home computers nor laptops with an internet access at home. Others also lived far away from the learning centres. Geographic dispersion was a major factor in this study as explained in the results in Table 5.4, which indicate that the majority of the learners 142 (58%) lived very far from their learning centres.

Damilola‟s (2013) study at the National Open University and Ibadan Nigeria also discovered that a large proportion of students made use of the cybercafé within and outside the campus in order to gain access to the electronic information resources especially Internet facility. One reason to this According to Damilola (2013) was due to the fact that electronic information resources were not readily available in the surveyed study centers. Elsewhere, Kelley and Orr (2003, p. 187) found that students were not coming as often to the library to use resources and preferred to use them at a location that is convenient for them. Students use resources remotely as the preferred method of using library resources and services. Similarly, according to Alkhanak and Azmi (2011) students at the public University in Malaysia indicated a strong dependence on university facilities to access internet. About 57% accessed the internet from home while 76% accessed the internet from other places such as cybercafés. This study found contrary results, very few learners used the CES learning centres and internet café to access electronic resources. There were also many learners 94 (39%) who did not indicate where they accessed electronic resources from (see results in section 5.6.2), which might justify the high number of learners using print resources.

The electronic resources at UNAM were available via the website, though it was not known whether learners knew about them and whether they used them. Learners 129 (53%) used the UNAM library website and 94 leaners used UNAM website very often (see Table 5.13 and Table 5.16) for other reasons such as accessing the online catalogue OPAC and other unknown

activities but it is evident from the findings that they did use the UNAM website but did not use electronic resources subscribed to by the UNAM library. The findings also revealed very low usage of electronic resources in general. Learners are inclined to use a website if it is useful and effective. The Technology Acceptance Model states that the ease of interface design and attractiveness of the library websites makes it to be used often, compared to unattractive and complex library websites (Nielsen, 2012). Kim (2011) asserts that there is a positive relationship between users and a library website.

The usefulness of electronic resources to users depends entirely on the approach they take to use electronic resources. Findings of this study showed that learners indicated that they believed using electronic resources would enhance their academic performances. In order to find out reasons for using electronic resources, respondents were asked to indicate their major purpose of using electronic resources. Results in Figure 5.2 indicate that about 100 (41%) of learners used electronic resources for writing assignments and 59 (25%) for writing research projects. Boadi and Letsolo (2004) found that lecturers identified test, research projects, examination and take home assignments as the most important activities in which distance students were engaged. Similarly, Bassi and Camble (2011) study found that research, assignments and writing research projects were among the reasons why students used electronic resources. It was also discovered that a large proportion of the respondents made use of the electronic resources mostly for research, assignment, current awareness, information acquisition, e-mail and news acquisition (Adeniran, 2013). In their study at the National Open University of Nigeria (NOUN), Ibadan Study Centre, Aramide and Bolarinwa (2010) observed that distance students made regular use of audiovisual and electronic resources for carrying out assignments. Equally they noted that most of the respondents in this study made use of the electronic resources for learning purposes. Strangely, Damilola (2013, p. 8) observed that students rarely used the electronic information resources for "project write-ups, assignment and group discussions but used it for knowledge acquisition and learning purposes". This is contrary to the findings of this study which revealed that learners would use electronic resources for assignments, projects and current information.

The results contradict the findings from the literature with regards to the trends in the usage of electronic resources by part time/ distance learners. For example, Kelley and Orr‟s (2003, p. 176)

findings in a survey of the trends in distant student use of electronic resources demonstrated that "part-time students" usage patterns had changed and now favoured the use of electronic resources (the Internet, in particular). Student reliance on the Web and online resources continues to rise at a rapid pace". Learners in this study have shown a positive attitude towards the use of electronic resources, though many of them still preferred to use print resources. They also were inclined to use web based resources over those subscribed to by UNAM library.

Centre coordinators were asked to indicate the reasons for which learners visited the learning centres. The results in Table 5.14 revealed that about five (63%) centre coordinators felt learners used learning centres to access the internet, four (50%) used the learning centres to borrow books; three (38%) used the centres for study purposes, while one (13%) used centres for other unspecified resources" perhaps indicating lack of awareness about specific resources available. Access to the internet was identified as the most important reason for learners to use the learning centres. According to Rehman, Hunjra, Safwan and Ahmad (2010) the internet plays a vital role in meeting information and communication needs of students. They also noted that Internet is a useful tool for all in a technologically advanced world. Students find the internet more informative and much easier to use than the library and are important for educational projects. Information is easily disseminated through the Internet and it offers students convenience. Respondents in a study by Adekunmisi, Ajala and Iyoro (2013) at the Olabisi Onabanjo University, Nigeria revealed that students used the internet to communicate with their loved ones, parents, well-wishers, friends, colleagues and lecturers as well as for doing class work, assignments, forming lecture notes, research work and preparation of examination. Students mostly used the internet for academic activities which impacted their academic performances. Rehman, Hunjra, Safwan and Ahmad (2010) noted that most Pakistani population existed in rural areas where internet facilities were not available and therefore they were not aware of the internet.

6.7 Factors inhibiting the use of electronic resources by distance learners

One of the research question sought to determine factors that inhibited learners from successfully utilizing electronic resources. The results showed among other factors lack of computer skills as the main obstacle. The results further revealed that lack of ICT facilities as another factor.

Thanuskodi (2013) found in his study that a lack of support from IT staff, lack of computer lab, lack of campus computer network, inadequate number of PCs and poor Internet connectivity were factors militating against use of electronic resources. Okello-Obura and Odongo (2010) in their study on electronic information seeking among LIS postgraduate students at Makerere University in Uganda, found that students‟ positive attitude towards electronic resources was affected by inadequate computing facilities or poor internet connection. According to Agboola (2010, p. 62) information technology facilities are needed in order to "manage acquisition, storage and dissemination of relevant information at the right time and in the most efficient manner, irrespective of a user‟s location". This argument is supported by Alasa and Kalechukwu (1999 cited in Okiy, 2005, p. 314) who identified the following obstacles working against the full utilisation of ICT facilities in university libraries in Nigeria:

- Poor and inadequate telecommunication facilities;
- Poor level of computer literacy;
- Poor level of computer facilities; and
- Poor level of awareness of internet facilities among policy makers, government officials and the ruling class in general.

Although these obstacles were experienced by learners in Nigeria, most of them were similar to those faced by distance learners at UNAM, specifically those relating to inadequate telecommunication facilities and poor level of computer literacy. Aramide and Bolarinwa (2010) also found major constraints hindering the use of audiovisual and electronic resources to include poor power supply, poor infrastructure, lack of adequate skill and high cost. Taie and Mohamed (2009) in their study on the role of digital libraries in Egyptian Higher education identified five major barriers faced by distance learners when using and accessing distance learning. These barriers included poor Internet access, lack of labs, limited computer skills, high cost of access, and difficult of off campus access.

Findings from this study further revealed that accessibility and availability to the internet and electronic resources was a challenge. Some 107 (44%) of the learners surveyed as indicated in Table 5.17 complained about the internet access speed which they felt was very slow. These findings were similar to those highlighted by the lecturers, centre coordinators and the librarians

at UNAM. They all complained of bandwidth problems. In addition Wright (2000, p. 30) noted that:

> site licenses from publishers are commonly protected by restricting access based upon the university's IP domain address. Users attempting to connect through commercial Internet providers are automatically denied access under this arrangement. Distant users can connect to databases, but only by means of a long distance phone call to first connect to the university backbone.

Some distance learners operated from places where there was no internet connection or electricity and could also be affected by the digital divide phenomenon (Fuchs and Horak, 2008). Findings from a study undertaken by the Manufacturing Consultancy Services (2006, p. 3), on information technology in Namibia revealed that:

> the major challenge facing the telecommunication sector is to make information communication technologies cheaper and more accessible to the public. While most Namibians can afford to have cellular phones in both rural and urban areas, the majority of people cannot afford to have access to the Internet.

Although, the findings from the Manufacturing Consultancy Services were arrived at eight years ago, they still remain a concern as most people are still not touched by the ICT revolution, especially those living in rural areas. In some areas, network services is so poor that one is unable to load or upload documents or even make a phone call. This is a serious concern for this study, seeing as it has a direct negative influence on learners‟ attitudes and behavioral intentions to use electronic resources.

Ray and Day (1998); Egberongbe (2011) found electronic resources to be useful to users. However, many face a lot of challenges while using or trying to use them. Learners did not find it easy to use the website, electronic resources and the internet availed to them by the UNAM library because of several factors. Findings from this study revealed that the majority of learners lived far away from the learning centres. Hence, they did not really visit the centres. Boadi and

Letsolo (2004) found that long distance could have a serious impact on the information seeking behavior of learners, which in turn could affect their use of the resources provided by the learning centres. Most of these impediments faced by distance learners have been shown to influence users‟ behavioral intention to either use electronic resources or not. The challenges have an impact on the perceived ease of use of electronic resources. Attitude towards electronic resources access is also affected by problems faced when accessing electronic resources. Amongst some of the challenges highlighted by Damilola (2013) are the issues of poor electricity supply, poor Internet connectivity, insufficient skills, financial problem and poor training programme.

Findings from Ofulue‟s (2011) survey of barriers affecting the use of information communication technologies (ICTs) among distance learners in Nigeria shows that access to ICTs is largely determined by the ability to afford them. It can be assumed that the availability of resources has an impact on whether learners will use the electronic resources or not. It is evident from the findings that, most learners came from under-resourced backgrounds with lack of infrastructure to access electronic resources. Ariffin and Bakar (2013, p. 975) are of the opinion that in this modern age of technology, it can be presumed that all students have access to electronic resources “due to the simple fact that the internet in its truest nature is basically free. They only need to have access to the internet, or ICT facilities such as computers, personal digital assistant (PDA) or a smart phone”. This was however not the case in this study. Mathieson, Peacock and Chin (2001) also disagree saying there might be situations in which an individual wants to use an information system, but is prevented by lack of time, money and expertise. Some learners in this study commented that most relevant documents online are available at a cost, making it hard to access electronic resources.

Students also noted several challenges faced in accessing electronic resources such as lack of student support and difficulties accessing notes on the UNAM portal. According to Hee (1998) libraries have a long history of providing support to extension education. However, there is a noticeable lack of library and information services support especially to distance students. Students faced challenges, but about 81 (33%) in Table 5.17 indicated that they felt overloaded with information and equally felt that they did not have enough time to search for information.

They were clearly faced with problems regarding quantity and quality of information gotten from the Internet or the databases. Students faced an abundance of information which they were unable to deal with. In consonance with these findings is a study by Adeniran (2013) who also found that factors that affected effective utilisation of electronic resources by undergraduate students included large mass of irrelevant information, the need to filter the results from search, failure to find information, difficulties in navigating through electronic resource etc. In spite of all the challenges faced by distance learners, all is not lost. Sahin and Shelley (2008, p. 220) suggested the following positive pointers on how to address skills shortage and efficient use of electronic resources by distance learners, by noting that:

> To fulfill students‟ expectations from online learning environments, they need to be supported both technically and technologically. Institutions and educators should create opportunities and devote resources to assist students in developing their computer skills and expertise needed for online learning. Before offering a distance education course, the instructor should make sure that the students have basic computer skills so they will not be frustrated and discouraged using the tools and environments of the online class. If necessary, at the beginning of the semester, the students who have a low level of computer proficiency should be provided with a training program to assure that they gain the computer skills required for the distance education course.

The importance of ICT skill training cannot be over emphasised as this is the only way learners can optimally use the resources availed to them by their institutions.

6.8 Summary

This chapter discussed the research findings as analysed and presented in chapter five. The results discussed reveal that learners live far from the learning centres and have to travel longer distances in pursuit of information. In spite of distance, it was established that most of the learners use electronic resources because of the various benefits derived from them, such as

having remote access and because of the educational benefits. Learners were not very skilled in the use of these resources nor were they well exposed to them by librarians. From the perspective of user acceptance, this study significantly expands the understanding of factors that influenced distance learners‟ acceptance of technology. The study established that most of the learners preferred to use both electronic and print resources however there was a significant number of learners who indicated that they preferred print resources. The findings suggested that electronic resources were perceived to be useful and that learners in general were confident about the benefits of electronic resources and intended to use them when the opportunity arises. Perceived usefulness was the primary reasons for the acceptance of electronic resources by distance learners. Results indicated that most learners very often used the internet to search for information.

Adequate knowledge about the information seeking behavior of users is vital for developing library collections, services and facilities to effectively meet the information needs of distance learners (Thanuskodi, 2010). According to the data collected in the study, it was evident that, resources, facilities and services were not adequate. While there are benefits to be derived from the use of electronic resources, the findings of the results showed that there was still a lot to be done to increase the usage of electronic resources by learners especially by the UNAM library, centre coordinators and the CES lecturers.

The use of electronic resources did not go without problems. Despite the training offered by the centre coordinators, students still faced major problems when accessing electronic resources off campus. It was also shown that there is a need to increase training, awareness of electronic resources, and network services. Many learners attributed negative attitude towards electronic resources to computer illiteracy, insufficient access to networked computers or laptop at home, at the learning centre and at the main campus library. These findings parallel those in the literature regarding problems faced by students‟ when accessing electronic resources (Mawindo, 2005; Kripanont, 2007; Liu and Luo, 2011).

The findings revealed that those learners who had no access and faced problems in accessing electronic resources had the most negative attitudes towards electronic resources and vice versa. Based on the findings, it was suggested that computer literacy was needed by distance learners.

The factors of computer skills and experience had a significantly negative effect on behavioral intentions toward electronic resources use. General ability to access information through adequate network facilities as well as creating awareness and providing adequate student support were equally important as they impacted students‟ attitude to either use or not use electronic resources.

In order to develop a stronger electronic resources collection at UNAM, the library firstly has to understand students‟ perception regarding electronic resources. The primary contribution of this research is furthering our understanding of variables that affected learners‟ satisfaction in the use of electronic resources. The results of the findings were interpreted within the context of certain limitations of this study, one being external validity, seeing that the study only focused on one university (the University of Namibia). Another limitation to validity was the fact that data was only collected from distance learners. This sampled group showed some unique characteristics that may not be generalised, especially to students studying on full time basis.

The next chapter discusses the study summary, conclusion and recommendations.

CHAPTER SEVEN

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The purpose of a concluding chapter in a doctoral research is to reaffirm the thesis statement and reach a final judgement (Assan, n.d). It helps the reader to understand the study better (Hess, 2004) by sharing the conclusions reached and the way forward. It also sums up the contents of the entire research, from the initial research questions, to the theoretical framework, literature review, the methodology, the results and discussion chapters. Assan (n.d, p.1) asserts that the purpose of the conclusion chapter in doctoral research is to:

- tie together, integrate and synthesize the various issues raised in the discussion sections, whilst reflecting the introductory thesis statement(s) or objectives;
- provide answers to the thesis research questions;
- identify the theoretical and policy implications of the study with respect to the overall study area;
- highlight the study limitations; and
- provide direction and area for further research.

This study sought to investigate the use of electronic resources by distance learners at University of Namibia, and addressed the following research questions:

1. What are the attitudes and perceptions of distance learners towards electronic resources?
2. What electronic resources are available to distance learners at UNAM?
3. What is the level of awareness of the learners about electronic resources available in the UNAM Library?
4. What ICT competencies do distance learners have to effectively use electronic resources?
5. What is the level of use of electronic resources by distance learners?

6. What factors hinder the use of electronic resources by distance learners?
7. What recommendations are needed to improve the use of electronic resources by distance learners?

This concluding chapter contains four main focus areas: overview of the study, summary of findings, conclusion, and recommendation. In addition, the originality of the study and areas of further study are suggested.

7.2 Overview of the study

This thesis was made up of seven chapters as illustrated in Figure 7.1 below.

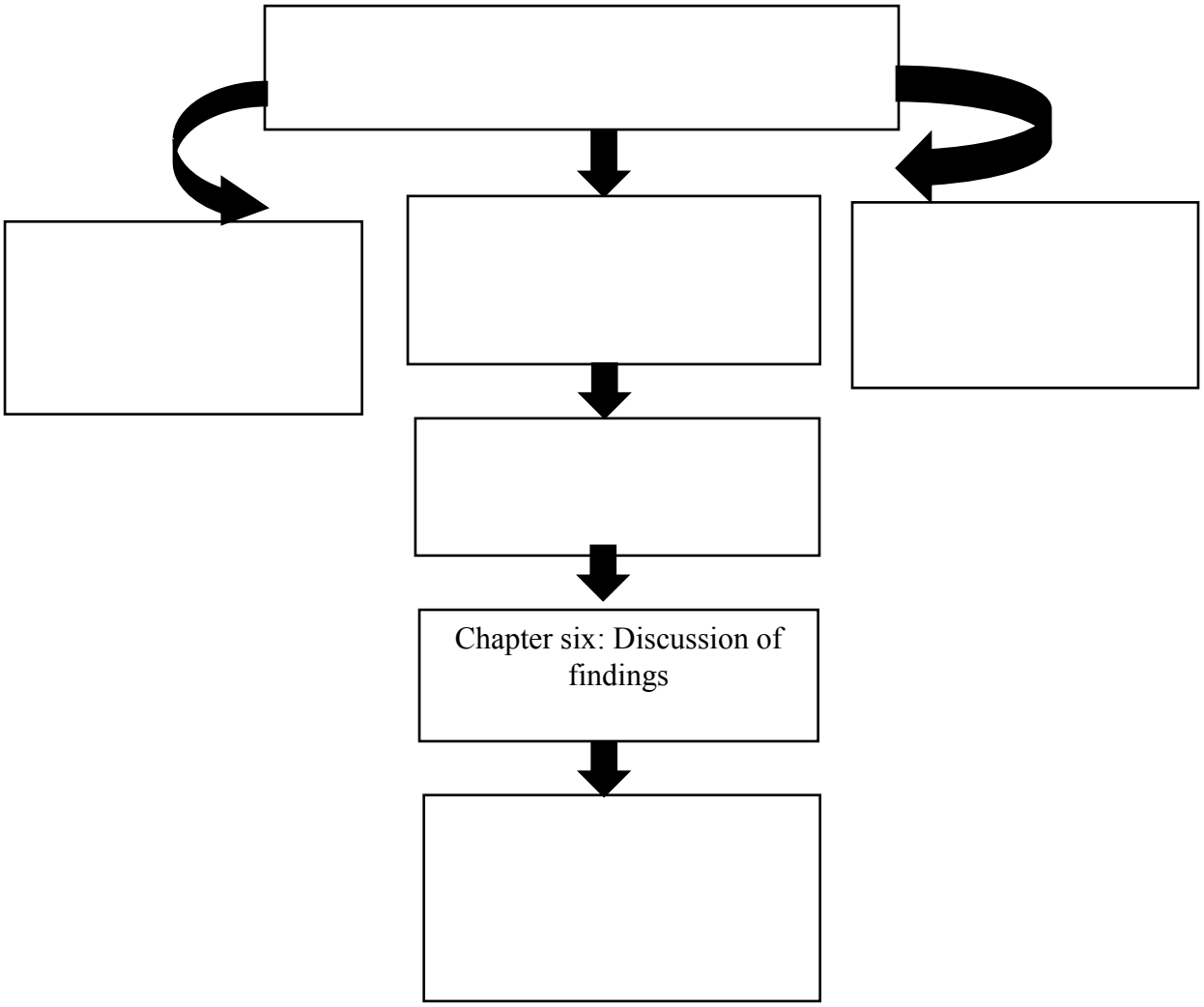

Figure 7.1 Overview of entire research

The introductory chapter to this study (Chapter one: Introduction) set the scene by introducing the background to the statement of the problem and the purpose of the study. The research questions which guided the study were outlined and the significance of the study adduced. Various technology adoption and acceptance theories (TAM, TRA, TPB and DTPB) which underpinned this study were introduced. The Technology Acceptance Model was however the main theoretical model that underpinned the study (see section 1.7). This chapter also introduced preliminary literature and the methodology & methods that were subsequently discussed in detail in chapters three and four respectively. The definitions of key terms were provided and the chapter concluded with a brief outline of the structure of the thesis.

Chapter two (Theoretical framework) provided an analytical presentation of the prominent technology adoption and acceptance theories such as TRA, TPB, DTPB and TAM. These theories were discussed in relation to the research questions posed in the study. The TAM as the main theoretical framework underpinning this study was discussed in detail with regard to distance learners‟ intentional behaviours towards the use of electronic resources. Determinants such as PEOU, PU, social influences, facilitating conditions, perceived behavioural control, efficacy and beliefs were described in depth.

Chapter three (Review of literature) presented an analytical exposition of the literature in the field of technology adoption and use of electronic resources. Most reviewed literature consisted of relevant primary and secondary sources. The chapter further presented factors that influenced use electronic resources by distance learners, which included attitudes and perceptions, ICT skills and training, digital divide, copyright and intellectual property issues.

Chapter four presented and discussed the methodology; research paradigms; research design; population of study; sampling procedures; data collection procedures; data analysis; reliability and validity and ethical considerations.

Chapter five (Data analysis and presentation of findings) presented the research data from survey questionnaires, interviews, and observations. Data were evaluated, summarized, communicated and presented in descriptive narrative and inferential formats.

Chapter six (Discussion of findings) provided a detailed discussion and interpretation of the research findings to give meaning to the study. This discussion of the findings offered deeper understandings of the research outcomes, thus revealing that learners‟ low usage of electronic resources could be attributed to the fact that they lived far from the learning centres and possessed limited ICT skills to enable their exploration and use of the electronic resources.

7.3 Summary of findings of the study

The first research question of this study sought to determine the attitude and perceptions of distance learners towards the use of electronic resources. The findings revealed that learners at UNAM had a positive attitude towards the use of electronic resources. They felt using electronic resources was academically beneficial to them. The findings suggest that those learners who had positive attitude and perception towards electronic resources had prior experience with technology and high self-efficacy towards electronic resources. Experience was found to be a good predictor of electronic resources usage behaviour. Learners‟ decision to use or not to use electronic resources according to TAM is determined by the extent to which learners believe it would help them perform better academically. From the findings, self-efficacy was rated highly with regard to the decision to make use of electronic resources. The attitudes and perception of the learners towards electronic resources was influenced by peers and other external factors around them. With regards to social influences, DTPB was found to have better explanatory power than the pure TPB, TRA and TAM. However, TAM and DTPB both predicted learners‟ intentions to use electronic resources more soundly with TAM being the easiest to apply.

PU had, as expected, a positive effect on learners‟ behavioural intention to use electronic resources, and this effect was found to be stronger than those of PEOU. Having easy access to electronic resources, anytime and anywhere, through a familiar, easy to use medium seemed to fascinate and intrigue students (Zacharis, 2014). Usage was theorized by TAM to be influenced by perceived ease of use (Davis, 1989). Learners used or adopted technology because they found it easy and useful. Findings of the study confirmed that electronic resources, especially the library website was not perceived easy to use and consequently learners did not make effective use electronic resources since such resources were accessed through the website.

The second research question sought to establish the electronic resources, services and ICT facilities that were available to distance learners at UNAM. The findings revealed that UNAM subscribed to a number of international and local journals and made them accessible through its website. These resources included among others Online Databases, Web-Based Resources, Digital Library Collections, e-Books and e-Journals. However, these resources were hardly used because there were inadequate information technology facilities especially at the learning centres for accessing these resources. Additionally, findings demonstrated that there were insufficient networked computers with fast internet connectivity. As a result, learners had negative perceptions about the inadequacy of facilities to access electronic resources. The respondents felt strongly that the UNAM main campus Library and CES leaning centres needed to provide more Internet access points as well as create a wireless environment for seamless access to the resources.

The third research question was aimed at determining whether learners were aware of the electronic resources available in the UNAM Library. This research question was meant to find out strategies that were used to market or promote electronic resources to distance learners. Awareness is perceived as a very influential factor in determining learners‟ behavioural attitude towards the use of electronic resources (Kelley and Orr, 2003; Asemi and Riyahiniya, 2007; Okiki, 2012). One of the challenges facing librarians at the University of Namibia library is how to encourage distance learners to use electronic resources. The findings in this regard confirmed a very low level of awareness about the electronic resources subscribed to by the UNAM Library. The low level of awareness had negative impact on the usage of electronic resources by distance learners. Results further suggested that the library orientation and information literacy were not enforced or made compulsory among distance learners to increase knowledge level about the electronic resources in the library. The findings further revealed that while the library, lecturers and centre coordinators marketed and promoted electronic resources, these seemed to have limited impact in creating awareness in the use of electronic resources.

The fourth research question sought to establish whether learners had the necessary skills to use electronic resources. The findings confirmed that a great number of learners were familiar with computers, especially with typing and writing their assignments but not for information

searching. Many of the learners lacked skills to search online databases, OPAC, subject gateways, and computers. Information searching skills are according to Romaniv and Aarnio (2006) correlated with the use of electronic resources. Therefore, the lack of skills on the part of the learners was a major contributing factor in the non-use of electronic resources. Though training on internet searching was offered to learners, a common thread that emerged in the findings was that many learners had difficulties in retrieving information from e-resources.The findings from the librarians, lecturers, centre coordinators and students suggested the need to enhance skills among distance learners for them to make effective use of electronic resources. Many authors support the need for training of learners to enable them make effective use of electronic resources (Mawindo, 2005; Agboola, 2010; Okello-Obura and Ikoja-Odongo, 2010). Amongst the skills needed by learners in an information society are computer and communication skills (Danner and Pessu, 2013). The findings of the study indicated that though there was a dedicated librarian for distance learners, she was not known to the learners. As a result many learners were self-taught or got assistance by their peers in the use of electronic resources.

The fifth research question was to establish the level of use of electronic resources by distance learners. The empirical study asked the learners which resources were mostly used, and the purpose and reasons they choose to use them. The findings revealed a low level of electronic resources use due to lack of previous experience amongst distance learners. Learners‟ behavioural intention is more predictive of usage behaviour when learners have prior experience with computing technologies (Kripanont, 2007; Nash, 2009). Prior experience with technology is associated with ease of use and usefulness (Agarwal and Prasad, 1999). The findings further revealed various academic purposes for which electronic sources were used such as writing assignments, research papers or research projects. The findings suggested that very few of the students used electronic resources. The findings also revealed that print resources were more preferred by learners than electronic resources. The reliance on print resources rather than electronic resources was attributed to the fact that though the learners owned laptops they did not have internet connectivity. Those who preferred to use print resources to electronic cited high cost of accessing electronic resources, poor internet connectivity, electricity outages, lack of sufficient computers especially at the learning centres and low levels of computer skills.

The sixth research question investigated the factors militating against effective use of electronic information resources by distance learners. The Technology Acceptance Model asserts that, "there are no barriers that would prevent an individual from using an information system if he or she chose to do so" (Mathieson, Peacock and Chin, 2001, p. 87). This assertion did not seem to apply in this study as findings revealed that learners were demotivated to use electronic resources because of a number of challenges already highlighted. Fuchs and Horak (2008); Aramide and Bolarinwa (2010); and Ofulue (2011), in different studies outlined factors that impede use of electronic to include bandwidth, long distance from learning centres, lack of training in computer use, lack of finances, lack of awareness about electronic resources, and erratic power supply. Boadi and Letsolo (2004) identified high costs in accessing electronic resources lack of facilities at the various centres and low level of computer literacy as responsible for low usage of electronic resources among distance learners.

7.4 Conclusion

This study investigated the use of electronic resources by distance learners at University of Namibia by exploring the extent to which factors such as intention, perceived usefulness; perceived ease of use; self-efficacy and subjective norms influenced learners ICT adoption and use. On the basis of the summary of findings, several conclusions are drawn. Like many related studies in literature, respondents (learners) in this study appreciated the unique features and benefits electronic resources proffered such as having 24 hour access, remote and faster access to electronic resources. However, they preferred print resources because of a number of hindrances to accessing electronic resources which the study already outlined. Several studies cited earlier have shown that a positive attitude is an important factor that significantly contributes towards technology adoption and use by users of technology. It is therefore concluded that with all other factors being equal i.e adequate ICT facilities and skills, the use of electronic resources among distance learners would be enhanced.

The effective use of electronic resources depends largely on a number of factors such as level of awareness, training, skills and ICT competencies of the learners. In this study, clearly learners‟ attitudes played a significant role in influencing their intentional behaviour towards the use of

electronic resources. Other variables found to also influence learners behaviours to use electronic resources were perceived usefulness, self-efficacy, subjective norms and facilitating conditions. The findings therefore, illustrate that distance learners who perceived electronic resources as useful had stronger intentions to use them. Their intention to use electronic resources was also affected by external factors such as peers and lecturers.

Findings on the inquiry into the types of resources and facilities available at UNAM, confirmed that UNAM library subscribed to a vast number of adequate electronic information resources. However, there were inadequate ICT infrastructures and facilities which hindered learners from accessing the e-resources especially at the learning centres.

Awareness is a powerful determinant of users‟ behavioural intention towards the use of electronic resources. There was lack of awareness about the e-resources that were available in UNAM library and this created negative attitudes that impacted on the usage of the electronic resources. Although librarians, lecturers and the centre coordinators indicated that they promoted and marketed electronic resources to the learners, it can be concluded that the awareness and promotional activities done were ineffective.

With regards to the perception of learners about their ICT competencies to use electronic resources, concluded conclusion is drawn to the effect that the learners lacked such competencies to effectively use electronic resources. Many were self-taught and expressed the need for training to enhance their skills in using e-resources. Such training, as stated by Appleton (2006), could include how to use electronic resources as well as how to search and retrieve information resources from the internet. This idea is supported by Quadri (2012) who also emphasise that distance learners‟ should go through training to be able to use electronic resources.

The study found perceived usefulness to have a significant impact on both intention to use and actual use of electronic resources. The majority of learners preferred to use print instead of the electronic resources subscribed to by UNAM Library. Where there was an attempt to use e-resources they resorted to search engines such as google. The preference for Google could suggest the failure of the library to provide users with skills and awareness to make use of UNAM electronic resources.

Some of the impediments to the use of electronic resources as reported by learners were distance; bandwidth; lack of training in computer use and lack of awareness about e-resources and power supply. The study in this regards concluded that skills and poor infrastructures were the major impediments to the use of e-resources.

This study also found the overall use of the TAM and DTPB in studying distance learners use of e-resources especially with regards to behavioural attitude and behavioural intention to use the resources useful. The outcome of this study is expected to make an important contribution in the area of policy formulation, theory, practical interventions, capacity building, skills development and infrastructure development to enhance distance learners use of electronic resources at the University of Namibia.

7.5 Recommendations

This section provides several valuable recommendations for policy, theory, practice, skills and ICT infrastructure development to improve access to, and use of electronic information resources at UNAM Library and distance learning centres.

7.5.1 Recommendations on implication of study for theory

The study has empirically identified factors influencing distance learners‟ adoption and acceptance of ICT technologies from a developing country context, Namibia being a case in point, through investigating variables such as PU, PEOU, subjective norms, and self-efficacy, perceived behavioural intention, and facilitating conditions, among others. The findings showed that, compared to the original TAM, DTPB provides more explanatory power with regards to learners‟ behavioural intention to use electronic resources. Using TAM as the basic theoretical foundation, and the DTPB model in complementary position to study factors influencing distance learners‟ use of electronic resources has added to current knowledge on the existing literature on distance learners‟ behaviour. Moreover the two models have helped provide a robust insight into the factors driving technology adoption and acceptance.

7.5.2 Recommendation of study on policy

Given the significance of electronic information resources in academic libraries and their current usage statistics at UNAM, the following implications for policy have been identified:

a) Human resources policy

The empirical evidence from the study indicates that learning centres did not have professionally qualified trained librarians. The staffing structure at the centres did not make provision for a librarian. Most of the centre coordinators were from the field of Education rather than professional librarians. This posed a great challenge to the delivery of quality library services in the learning centres. The study thus recommends that the staffing structure should include a position of librarian to oversee the library operations at the learning centres.

b) Electronic resources collection development policy

The study has revealed that the electronic resources at UNAM library were not sufficient and the library had very limited funds for acquisitions of these resources. UNAM Library has a draft collection development policy where electronic resources are briefly discussed. The sections in the policy on electronic resources touches on the following issues: *Criteria to consider when subscribing to and purchasing of electronic resources; Electronic journals; Electronic books; Electronic databases; Institutional repository; Open access; Platforms; License agreements; Criteria for cancelling e-resources subscription*. The absence of a full-fledged electronic resources collection development policy has a negative impact on the library‟s collection development practices. Most of the collections developments practices concerning electronic resources as mentioned above, are currently haphazardly done as there are no clearly documented guidelines to guide the collection development tasks. An electronic resources collection development policy is needed to guide collection acquisitions decisions and address faculty and student needs (White and Crawford, 1997). Chaputula and Kanyundo (2014, p. 1) advise that collection development policies are helpful in the long run as they "provide solutions to collection development challenges faced" by the library.

The researcher recommends that the library develops a standalone policy for electronic resources which should clearly specify type of format, access and training needs on the use of electronic resources. Such a policy should be periodically evaluated and revised as necessary to provide guidance for electronic resources collection development.

7.5.3 Implication of the study to practice

Electronic information sources are becoming a daily basic need for distance scholars. The following actions are therefore needed:

The UNAM library should list in print the electronic resources that are available at UNAM as part of the first year students‟ orientation package. Gandhi (2003, p. 151) in this regard recommends that:

> Academic librarians can publicize their services by including a mailer/brochure about library services in the orientation packets or course materials that each student receives before beginning an online course. The mailer can include information about the URL of the virtual library; and the purpose of the virtual library; another alternative is to link this information directly to each online course or to Web pages dedicated to student orientation and marketing.

Moreover, the UNAM library should work with the IT/computer centre to have alerts on the student portal that pops up when they log onto their portals. This pop ups should provide information about electronic resources available on the library website. In addition, the UNAM library web page should provide an online guide to e-resources and various search-options to e-resources as proposed by (Anaraki and Babalhavaeji, 2013).

7.5.4 Implications on capacity building

The effective use of electronic resources lies solely on skills training of learners and capacity building of library staff and centre coordinators. This study found that most of those competency requirements were lacking in the learners, hence the problem of very low usage of electronic

resources. Library personnel were not adequately trained to handle the magnitude and psychological emotion and information needs of distance learners.

With ICTs continuously being updated and traditional formats replaced or supplemented by digital formats, distance learners should go through training to be able to use such e-resources effectively (Quadri, 2012). In the absence of skills development many learners at UNAM were unable to effectively use electronic resources. Consequently, learners assumed a passive role in using electronic resources and relied on peers, library staff, and lecturers for help.

The study recommends the following activities to be undertaken for learners‟ skills development:

- A multipronged approach should be used to impart ICT skills and digital literacy through workshops, orientation programmes, and user education at UNAM main library and at the centres.
- UNAM should make provisions for the training and retraining of librarians, as well as distance learners in computer literacy.
- The UNAM Library should continuously train and orient students throughout their academic years at university.

With regards to capacity building of staff members, the study identified three aspects which would provide adequate training needs for staff. These are:

- Developing knowledge and skills for existing library staff and centre coordinators;
- Building capacity through provision of educational courses for library staff and centre coordinators; and
- Providing information and tools to support library staff and centre coordinators develop skills.

Moreover, the librarian in charge of distance learners should be trained on the issues of marketing, advertisement and promotion to better market e-resources successfully. The marketing and promotion of electronic resources should be done jointly between librarians and the lecturers. It is also important that the library organises regular workshops to enhance the

usage of e-journals, electronic databases and e-books and OPAC to distance learners. Thansuskodi (2010) suggests that orientation programmes should be organised by the librarian and centre coordinators at regular intervals so that learners can improve their excellence or proficiency in the use of the electronic resources for their academic purposes.

7.5.5 Implication for ICT infrastructure development

Despite the efforts made by the government of Namibia to develop ICT infrastructure in the country, there is still a lot to be desired from the available ICT infrastructure at the University of Namibia. A wide range of electronic resources were found available at UNAM, but these were hardly used by learners partly because of poor ICT infrastructure. ICT services in the learning centres and at UNAM library should be enhanced because as ECDL Foundation (2009, p.2) points out.

> High-speed Internet access is necessary to maximize effective use of ICT, which in turn is an explicit driver of productivity, innovation, and social inclusion. Such investment in physical infrastructure must be complemented by initiatives to develop the skills that will be needed to extract value from this investment.

It is therefore recommended that:

- University of Namibia should invest in ICT Infrastructure and power supply for the effective use of electronic resources. This would enable distance learners in rural areas to benefit from modern technology (Aramide and Bolarinwa, 2010).

- More high-speed computer terminals should be installed in the various departments, departmental libraries and computer laboratories (Anaraki and Babalhavaeji, 2013).
- Moreover, additional computers are needed in the main campus library and at the learning centres for the benefit of the learners.
- High speed Wi-Fi is also needed in the learning centres country wide, in order to ensure and facilitate the effective access and usage of e-resources and internet within the campus and at the learning centres by learners.

7.6 Contribution and Originality of the Study

Evidently, apart from this current study which sought to evaluate the use of electronic resources by distance learners‟ at the University of Namibia, there has been no other. This study therefore, being the first of its kind to be conducted, aimed to predict the use of electronic resources as a valuable tool for learning by distance learners. Overall, this study has provided insight and deeper understanding of the level of use of electronic resources at the University of Namibia by distance learners.

This study contributes towards an understanding of the critical factors that promote the use of electronic resources by distance learners in a developing country context such as Namibia. This study adds to the significant body of work that considers the relationship between PEOU and PU and behavioural intentions. Moreover, the study contributes to current knowledge pertaining to distance education (distance learners) from the perspectives of such variables as self-efficacy, subjective norms, perceived usefulness, facilitating conditions, and perceived ease of use as antecedents of learners‟ acceptance of electronic resources. The findings of the study have meaningful implications for policymakers as well as librarians who have the responsibility to ensure library users make use of electronic resources to get value for money invested in e-resources and to enhance their academic performances. This study on the UNAM Library is of great importance to the University of Namibia as it will give the Library an insight on the use of electronic resources by learners and help shape investment and policy decisions in this area. The findings will also help the Library to re-focus and re-engineer its services to better suit the needs of the distance learners. These findings would help the main campus as well as the centres to build systems that are user friendly, and would make the distance learners meet their information needs.

In an attempt to better understand the underlying drivers of student adoption of electronic resources, this study incorporated additional constructs (self-efficacy, computer training and computer experience & skills; System designs and subjective norms) to improve TAM‟s predictive capabilities. The new additional variables are not present in TAM, but were shown to be important determinants of learners‟ behavioural intention towards the use of electronic resources in this study. Moreover, perceived ease of use (PEOU) and perceived usefulness (PU)

were found to be key factors which affected learners‟ behavioural intentions to use electronic resources.

7.7 Recommendations for future research

The results report only distance learners‟ use of electronic resources at UNAM. It is possible that contextual factors in other institutions of higher learning in Namibia may reveal new patterns of electronic information resources use. It is therefore recommended that a similar study in other education institutions in Namibia should be conducted.

A similar study is also recommended for full time students at UNAM. Future studies should extend to cover the relationship that exists between adult learners‟ performance levels and access to electronic resources. Some studies believe that gender is a predictor of internet use and attitudes, and for this reason, future research could investigate impact of gender on the use of electronic resources. Library user expectations and information needs are changing. It is therefore important for similar studies to be carried out frequently to track changes in user behavior with regard to use of e-resources. This study recommends further study that would include determining whether learners who had positive perception were the same who had prior experience. Another area of further research is to use qualitative approaches to gain much deeper understanding on use of electronic resources by distance students. Until recently, distance learners were only able to access electronic information resources through computers and laptops however other ICT such as ipad, iphone, smart phones etc has allowed distance learners to access and use electronic resources at their convenience. These issues (ipad, iphone, smart phones, software and operating systems installed in computers etc) were however not reflected in the scope of the current study however this is recommended as future areas of study.

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Appendices

Appendix 1: Questionnaire for distance learners

I, Nampa Hamutumwa, of UNAM Library, kindly invite you to participate in the research project entitled **Electronic resources use by distance learners at University of Namibia**. This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Programme. The aim of this study is to investigate the use of electronic resources by distance learners at University of Namibia. Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself Ms N. Hamutumwa (Lecturer in the Department of Information and Communications Studies, UNAM) at nhamutumwa@unam.na, or cell, 0811492037

Section 1: Respondents Background Information

Question 1.1: Gender

Male	
Female	

Question 1.2: Age group

21-30 years	
31-40 year	
41-50 years	
51-60 years	

Question 1.3: What is your study programme?

_____

Question 1.4: what is your year of study?

2nd year Diploma	
2nd Year Degree	
3rd year Diploma/Advance Diploma	
3rd Year Degree	
4th Year Degree	
Postgraduate Diploma	

Question 1.5: Through Which UNAM Centre are you registered?

Gobabis	
Katima Mulilo	
Keetmanshoop	
Khorixas	
Oshakati	
Otjiwarongo	
Rundu	
Swakopmund	
Tsumeb	
Windhoek	

Question 1.6: How far from your home/office is the UNAM Library that you use most often

Within the same premises as the UNAM Centre	
Within 2-km radius	
Very far away	
Don‟t know	
Don‟t use the library	

Section 2: Attitudes and Perceptions Towards E-Resources

Question 2.1: Do you have regular access to the Internet and electronic resources at your centre?

Yes	
No	
Don‟t know	

Question 2.2: What are the advantages of electronic resources to you?

Access (remote access; 24-hour access; quick access; wider access)	
Availability (no limit on what you can access	
Multiple uses for single sources	
Links to additional information	
All of the above	

Question 2.3: How often do you use electronic sources?

All the time	
Most of the time	
Sometimes	
Rarely	
Never	

Question 2.4: What is your level of electronic resources experience for the following items?

Items	High	Low	Satisfactory
I have Experience with the Internet.			
I have Experience with search engines e.g. Google, Altavista, yahoo etc			
I have Experience with CD-ROM			
I have Experience with website inbuilt search engines			
I have Experience with online databases			
I have Experience with navigating web links			
I have Experience with weblog			

Question 2.5: Please indicate the extent to which you agree with the following:

To what extent do you agree with the following statements below?	Strongly agree	Agree	I don‟t agree	I don‟t know	I don‟t use it
I feel that the standard of my academic work will suffer without electronic resources					
I can avoid electronic resources and still perform well in my academic work					
Given a choice, I will choose printed materials over electronic resources					
Open access journals should be promoted because they help to fight plagiarism of people‟s intellectual work since they are open to everybody					
With the advent of electronic journals and e-books, CD-ROMs are becoming unpopular among students					
A university is not worth its name without electronic resources					
There is no need to subscribe to paid journals since open access journals relevant to my field do exist					

Section 3: Information and Communications Technology (ICT) Competencies Required by Distance Learners

Question 3.1: Do you have a personal computer/laptop?

Yes	
No	

Question 3.2: At which level did you learn to use a computer?

Nursery	
Primary school	
Secondary school	
At diploma level	
At Bachelor level	

Question 3.3: What is your experience with computer use?

(Please tick one answer only)

< 1 year	
1-2 years	
3-4 years	
Above 4 years	

Question 3.4: Select the number of computer skills/packages that you have. *? (Select more than one answer.)*

Word processing	
Spreadsheet	
Internet use	
Web page design	
PowerPoint presentation	
Computer repair and maintenance	
Others	

Question 3.5: Have you ever received any training in the programmes listed below?

Programs	Yes	No
Library user education		
How to use electronic databases		
Internet searching skills		

Question 3.6: How have you learned to use electronic resources?

(Please tick the applicable)

I have learned by/through:	
Trial and error	
Guidance from other students	
Guidance from library staff	
Self-taught	
Course offered by university	
Guidance from lecturers	
Guidance from computing staff	
External courses	
Guidance from IT technician	

Question 3.7: How do you perceive your level of information skills?

(Please tick one answer only)

Poor	
Fair	
Good	
Excellent	

Question 3.8: What is your level of Information and communications technology (ICT) skills?

To what extent do you agree with the following statements below?	Agree	Disagree
I am skilled in the use of computer		
I am skilled in the knowledge of database structures		
I am skilled in formulating search queries		
I am skilled in online navigation techniques		
I am skilled in the use of electronic library tools e.g. CDR-ROM, OPAC, Subject gateways, etc		
I am conversant with electronic formats e.g PDF, JPEG, MPEG, etc		

Section 4: The Level Of Use Of Electronic Resources

Question 4.1: Do you have access to a networked computer?

Yes	
No	
Don‟t know	

If yes, please specify where you have access.

At the Centre	
At home	
Others *(please specify)*	

Question 4.2: Which of the following sources do you use most for your research and assignments? *(Please tick the applicable)*

CD-ROMs	
The Internet	
Electronic journals	
Library E-resources	
Electronic books	
UNAM website	
Scientific databases	
All of the above	

Question 4.3: Which of the following format do you mostly prefer using for searching for information for research and assignment? *(Please tick one answer only)*

Print information	
Electronic information	
Audiovisual	
All of the above	

Question 4.4: For what purpose do you use electronic resources? *(Please tick the applicable)*

Writing projects	
Assignment	
Current and general information	
Writing thesis/dissertation	
Leisure	
All of the above	

Question 4.5: What are your reasons for using choosing either to use or not to use electronic resources? *(Please tick the applicable)*

Time Saving	
Time Consuming	
Easy to Use	
Difficult to Use	
More Informative	
Less Informative	
More Expensive	
Less Expensive	
More Useful	
Less Useful	

Question 4.6: How do you look for relevant information resources on the Internet? *(Please tick one answer only)*

Via online library catalogues	
Via portals	
Via web search-engine	

Question 4.7: Which of the following are your most preferred sources of information? *(Please tick the applicable)*

Sources	
Lecturer notes	
Colleagues	
Reference textbooks	
Library resources	
Lecture notes	
Internet	
Others (*please specify)*	

Question 4.8: How often do you use electronic resources?

(Please tick one answer only)

More than once	
About once a day	
3 or 4 times a week	
About once a week	
About once in 2 weeks	
About once a month	
Less than a month	

Question 4.9: How often do you use the following information sources for research and assignment?

	Quite often	Often	Sometimes	Rarely	Never
Electronic journals					
E-books					
Search engines					
Social Media, e.g. Facebook, Twitter, LinkedIn					
UNAM Website					
Scientific Databases					
The Internet					
Library E-resources					

Question 4.10: How often do you use the following types of electronic resources?

	Very often	Often	Rarely	Never
Educational/Academic				
Library/informational				
Full-text article databases				
Entertainment				
CD-ROM				
Google.com				
Yahoo.com				
Alta Vista.com				
Msn.com				
Lycos.com				

Section 5: Factors Hindering Use Of Electronic Resources

Question 5.1: What problems do you encounter when using electronic resources? *(Please tick the applicable)*

Speed access	
High internet cost	
Don't know how to search	
I lack trust	
Not enough time	
Limited search skills	
No access to PC	
Information overload	
Limited knowledge	
No access to Internet	
Unaffordable PC	

Information is scattered	
Inadequate library knowledge	
Internet benefits	
All the above	

Section 6: Awareness Of Electronic Resources

Question 6.1: How to do you find out about electronic resources relevant to your course?

Not sure	
Reference another report, book or journal	
Database or search engine	
Librarian	
Friend	
Lecture	
Lecture notes	
Reading list	
Supervisor	

Section 7: General Comments

Question 7.1: Is there anything else you would like to comment on?

Thank you very much for your time and responses, they are greatly appreciated

Appendix 2: Questionnaire for CES Lecturers

I, Nampa Hamutumwa, of UNAM Library, kindly invite you to participate in the research project entitled **Electronic resources use by distance learners at University of Namibia**.

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Programme

The aim of this study is to investigate the use of electronic resources by distance learners at University of Namibia.

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself Ms N. Hamutumwa (Centre for External Studies Librarian) at nhamutumwa@unam.na, or cell, 0811492037

Section 1: Respondents Background Information

Question 1.1: Gender

Male	
Female	

Question 1.2: Age group

20-30 years	
31-40 years	
41-50 years	
51-60 years	
Over 50 years	

Question 1.3: What is your highest qualification (award) in your field of study?

Certificate	
Postgraduate Diploma	
Bachelors Degree	
Master Degree	
PhD	
Other *(please specify)*	

Question 1.4: For how long have you been teaching distance learners?

1-10 years	
11-20 years	
21-30 years	
31-40 years	
Over 40 years	

Question 1.5: Which courses do you teach at distance mode?

Section 2: Attitude and Perception Towards E-Resources

Question 2.1: Which of the information sources do you encourage students to reference in their assignments? *(Please tick one answer only)*

Current journals	
Electronic databases	
Textbooks	
All of the above	

Question 2.2: To what extent do you agree with the following statements?

Statements	Strongly disagree	Strongly agree
When teaching an off-campus course, I expect that my distance learners will have less access to electronic resources than if they were taking the same course on campus		
Electronic resources should be as accessible to off-campus distance learners as they are to on-campus learners		
Using a computer to access electronic resources, distance learners can conduct library research from home or work instead of going to a library to do research		
I am fully aware of the electronic databases offered by the UNAM Library to my learners taking off-campus courses		
Learners in my off-campus course(s) generally have no problem acquiring the library and electronic information resources they need to complete their course work		
Increasing computerised access to library materials and services will help my off-campus students succeed in their course work.		

Question 2.3: What is your philosophy of electronic resources?

Question 2.4: Do you feel electronic resources are well used by UNAM distance learners?

Section 3: Level Of Use Of Electronic Resources

Question 3.1: Which of the following database (s) do you refer your students to?

(Please tick more than one answer where applicable)

Emerald MCB	
EBSCO HOST	
SPRINGER Link	
JSTOR	
SA E-Publications	
Google Scholar	
Oxford University Press (OUP)	
HINARI	
Other	

Question 3.2: Which of the following resources are mostly referenced by your learners?

(Please tick one answer only)

Journals	
Textbooks	
Scientific Databases	

Question 3.3: For your taught course (s), what percentage of the assignments require students to seek library or electronic information resources beyond what is contained in the required textbooks, study guides, etc.?

Question 3.4: What types of assignments in your taught course (s) require students to seek library or electronic information resources beyond the required textbooks, study guides, etc.?

Question 3.5: To complete an assignment(s), what type of electronic information resources do you generally expect your students to use?

Section 4: Factors Inhibiting Use Of Electronic Resources

QUESTION4.1: What do you think are the challenges faced by distance learners in accessing electronic resources?

Section 5: Awareness of Electronic Resources

Question 5.1: How much information do you provide in this course about library resources and services?

Question 5.2: How is information about the library and information resources conveyed to learners in this course?

Question 5.3: How often during the development and/or delivery of this course do you work with a librarian?

Question 5.4: If you work with a librarian, at what point does the librarian become involved?

Question 5.5: In your opinion, who should be primarily responsible for informing learners who take off-campus courses about library resources and services?

Section 6: Final Comments

Question 6.1: In reflecting on your overall experience in teaching off-campus courses, have you ever had to forego class assignments because of a perceived lack of easily accessible library resources? Please explain.

Question 6.2: If you have ever taught the same course both on and off-campus, have you had to modify the off-campus course in any way due to your perception of a lack of library and information resources? Please explain.

Question 6.3: Is there anything else you would like to comment on?

Thank you very much for your time and responses, they are greatly appreciated

Appendix 3: Questionnaire for centre coordinators

I, Nampa Hamutumwa, of UNAM Library, kindly invite you to participate in the research project **entitled Electronic resources use by distance learners at University of Namibia**. This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Programme. The aim of this study is to investigate **Electronic resources use by distance learners at University of Namibia**. Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself Ms N. Hamutumwa (Lecturer in the Department of Information and Communications Studies at UNAM) at nhamutumwa@unam.na, or cell, 0811492037

Section 1: Respondents Background Information

Question 1.1: Gender

Male	
Female	

Question 1.2: Age group

20-30 years	
31-40 years	
41-50 years	
51-60 years	
Over 50 years	

Question 1.3: What is your highest qualification (award) in your field of study?

Certificate	
Postgraduate Diploma	
Bachelors Degree	
Master Degree	
PhD	
Other *(please specify)*	

Question 1.4: For how long have you been working as a distance coordinator?

1-10 years	
11-20 years	
21-30 years	
31-40 years	
Over 40 years	

Question 1.5: At which UNAM centre are you affiliated?

Gobabis	
Katima Mulilo	
Keetmanshoop	
Khorixas	
Oshakati	
Otjiwarongo	
Rundu	
Swakopmund	
Tsumeb	
Windhoek	

Section 2: Attitude and Perception Towards E-Resources

Question 2.1: Which features of electronic resources do you think distance learners consider to be the most important for their assignments? (*Please tick more than one answer)*

Quick retrieve ability	
Up-to-datedness research results	
Availability free of charge	
Full-text searching	
Links to other resources	
Other *(please specify)*	

Question 2.2: Please rate the following statements according to the extent to which you agree or disagree. Distance learners motivations for using electronic resources are:

Statements	Strongly Disagree	Disagree	Agree	Strongly Agree
Time saving				
Time consuming				
Easy to use				
Difficult to use				
More informative				
Less informative				
More expensive				
Less expensive				
More useful				
Less useful				

Question 2.3: Please rate the speed of internet connectivity at your centre.

(*Please tick next to answer)*

Very fast [1] Fast [2] Very slow [3] Don't know [4]

Question 2.4: Please indicate the electronic resources provided by the main campus library which you are aware of?

Question 2.5: Have you ever referred distance learners to online resources provided by the main campus?

Section 3: Information and Communications Technology (ICT) Competencies

Question 3.1: Do you offer ICT skills training at your centre?

Yes	
No	

If Yes/No please explain in more details:

Question 3.2: When last did you provide training on electronic resources to distance learners?

A month ago	
Six months ago	
A year ago	
Never	

Question 3.3: Do you feel distance learners who use the centre are ICT competent?

Yes	
No	

If Yes/No please explain in more details:

Section 4: Level Of Use Of Electronic Resources

Question 4.1: For what purpose do you think distance learners use electronic resources?
(Please tick the applicable)

Writing projects	
For assignment	
To gain current and general information	
Writing thesis/dissertation	
Leisure	
All of the above	

Question 4.2: For what purpose do distance learners use the centre?

(Please tick the applicable)

To read the newspapers	
Research	
Study	
Access Internet	
Borrow books	
Other *(please indicate)*	

Question 4.3: What ICT facilities are available for use by distance learners at the centre?

Radio		
Television		
Telephone		
Video conferencing		
Internet		
Online learning		
Other (please specify)		

Question 4.4: How often do the distance learners use electronic resources at the centre? *(Please tick one answer only)*

More than once	
About once a day	
3 or 4 times a week	
About once a week	
About once in 2 weeks	
About once a month	
Less than a month	
Never	

Question 4.5: Please indicate the different electronic bibliographic databases provided by your centre, if any?

Question 4.6: In your opinion, what services are mostly used by distance learners?

(*Please tick one answer only)*

Print	
Electronic	
Both	

Question 4.7: Please list the types of electronic resources provided by your centre, if any.

_____

_____

Question 4.8: Which of the following electronic resources does your centre provide to distance learners?

CD-ROM	
DVDs	
Videotapes	
Cassettes	
Other media (Please specify)	

Question 4.9: Does your centre provide any of the following *digital* services and user access?

(Please tick the applicable)

Type of digital service	Remote access	In the centre only
Digital enquiry, reference services		
Digital reservations, renewals, etc.		
Digital Inter-Library Loan		
Access to electronic resources		
Online Public Access catalogue (OPAC)		
Audiovisual media		
Other (please give details)		

Section 5: Factors Inhibiting Use Of Electronic Resources

Question 5.1: What challenges do you face when providing electronic resources such as online database and print journals? *(Please tick the applicable)*

Power supply	
Knowledge and skills in handling electronic resources	
Inadequate funding	
No internet connectivity	
Bandwidth problems	
Others *(please specify)*	

Question 5.2: In your opinion, what are some of the challenges faced by distance learners when accessing electronic resources?

SECTION 6: AWARENESS OF ELECTRONIC RESOURCES

Question 6.1: How do you promote and market electronic resources services offered by the main campus library?

Question 6.2: In your opinion, how can the main campus library market electronic resources to the distance learners?

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7. GENERAL COMMENTS

Is there anything else you would like to comment on?

Thank you very much for your time and responses, they are greatly appreciated

Appendix 4: Interview schedule of librarians

I, Nampa Hamutumwa, of UNAM Library, kindly invite you to participate in the research project entitled **Electronic resources use by distance learners at University of Namibia**. This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies programme. Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself Ms N. Hamutumwa ((Lecturer in the Department of Information and Communications) at nhamutumwa@unam.na, or cell, 0811492037

A) Attitude and Perception

1. What in your view is the place of electronic resources in distance learning?
2. Do you think electronic resources diminish the importance of traditional resources?
3. What do you see as the major trends in library services to distance learners in the next 5 years?
4. What is your philosophy of electronic resources?
5. Do you feel electronic resources are well used by distance learners?
6. What proportion of library book budget is spent on electronic resources?

B) ICT skills

1. What are your views on integrating technology and information literacy skills into librarians work with distance learners and lecturers?

2. What support system is in place to adequately train distance learners on how to use the electronic resources subscribed to by the UNAM Library?
3. What competencies do library staff have to effective provide electronic resources?
4. Do you think distance learners are well equipped with skills to adequately utilise electronic resources? If not what skills do you think they need?

C) Training

1. Is there a budget allocated for training librarian, and how much is the budget for this year (2012)?

D) Budget and policy

1. Is there a regular budget to provide library and information services for the development of the Distance Education programs?
2. How important is it to you to budget for electronic resources?
3. How much do you have in your budget for electronic resources this year?
4. What do you see as the budget implications of increasing use of electronic resources in the library?
5. Does the library have an electronic resources policy? If yes, how well does it address off-campus access by distance learners?

E) Usage

1. Explain how increasing computerised access to library materials and services could help off-campus students succeed in their coursework.
2. What are your views on the future of the Internet and electronic resources as reference tools?
3. What is the level of usage of electronic resources by distance learners?

F) Challenges

1. What challenges do you think distance learners are facing in the usage of electronic resources?
2. What can be done to alleviate these challenges?

G) Resources

1. What type of electronic resources is available to distance learners?
2. What selection criteria are used to select electronic resources?
3. Please explain how the library prioritises in the selections process of electronic resources?
4. How does the library ensure the accessibility of electronic resources to a sufficient number of users?

H) Awareness

1. How best can the library create awareness of the electronic resources to its distance learners?
2. What are your suggestions for improving access to electronic resources for off-campus learners?

I) Final comments

1. Do you have anything else that you would want to say regarding the usage of electronic resources by distance learners?

Thank you very much for your time and responses, they are greatly appreciated

Appendix 5: Observation checklist used at the selected CES learning centres

1. Observation record

- Observer‟s name ……..……
- Observed centre.....……..…….
- Date/Month/Year …….

2. Distance students

- Number of students …….

3. Library facilities

- Information resources for distance students……..…….
- ICT equipment (computers) ……..……
- ICT facilities …...……..…….
- Internet connection ……..…….
- Electronic resources (CD-ROM, DVDs, Video tapes, cassettes and databases)…….
- ICT Training schedules for distance learner……
- Digital services and user access available……

4. Access to information by distance learners

- Library staff assisting distance students with literature searchers……..
- Number of computers connected to the Internet …….
- Distance students interaction with information resource…….
- Number of students‟ interaction with computers/Laptops/Ipad/Notepad…….

Appendix 6: Letter for seeking authority to conduct research

30 March 2012

TO WHOM IT MAY CONCERN

The Research Coordinator: Research and Publications Office
Prof. Isaac Mapaure
Office of the PVC (Academic Affairs and Research)
University of Namibia
P/Bag 13301, Windhoek, Namibia
Phone: +264612063133
Fax: +264612063791

RE: Introducing Ms Nampa Hamutumwa – PhD Student at University of KwaZulu-Natal

This letter serves to introduce and confirm that Ms Hamutumwa is a duly registered PhD (Information Studies) candidate at the University of KwaZulu-Natal. The title of her PhD research is *„Electronic resources use by distance learners at University of Namibia'*. The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree she is expected to undertake original research in an environment and place of her choice. The UKZN ethical compliance regulations require her to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Ms Nampa Hamutumwa permission to carry out research in your organisation(s). Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof. Stephen Mutula (Information Studies Programme)
Supervisor and Academic Leader, Development Cluster
University of KwaZulu-Natal
Private Bag X01 Scottsville 3209
Pietermaritzburg
Email: mutulas@ukzn.ac.za, Tel: +27 33 260 5571; +27 712 750 109

Appendix 7: Informed consent letter

P.O. Box 6203
Ausspannplatz
Windhoek, Namibia
Telephone: +264 2063255
Fax: +264 206 3876
Email: uhamutumwa@gmail.com

30 March 2012

Dear Respondent

Informed Consent Letter

Researcher: Nampa Hamutumwa
Institution; University of KwaZulu-Natal
Telephone number: 031 260 4373
Email address: uhamutumwa@gmail.com

Supervisor: Prof. Stephen Mutula
Institution: University of KwaZulu-Natal
Telephone number: 033-260 5093
Email address: Mutulas@ukzn.ac.za

I, Nampa Hamutumwa, of UNAM Library, kindly invite you to participate in the research project entitled Electronic resources use by distance learners at University of Namibia.

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Department.

The aim of this study is to investigate the use of electronic resources by distance learners at University of Namibia.

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal. If you have any questions or concerns about participating in this study, please feel free to contact myself or my supervisors at the numbers indicated below.

It should take you about 15 minutes to complete the questionnaire.

Thank you for participating in this research project.

	30 March 2012
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Signature	Date

I ..... hereby consent to participate in the above study.

Name: ..... Date: ..... Signature: .....

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Appendix 8: Ethical clearance letter from UKZN

Appendix 9: Studies on technology acceptance models adopted from Lu *et al*., 2003, p. 209-211

Table I Studies on technology acceptance model

Studies	Research purposes	Sample[a]	Factors/constructs developed/ tested[b]	Results
Davis (1989)	Develops and validates perceived usefulness and perceived ease of use	152 industrial users of four application programs	1. *Perceived usefulness* 2. *Perceived ease of use* 3. *Self reported system usage*	Both usefulness and ease of use were significantly correlated with usage. Perceived usefulness had a significantly greater correlation with usage behavior than did ease of use
Davis *et al.* (1989)	Predicts people's computer acceptance from a measure of their intentions, and explains intentions	107 full-time MBA students	1. *Intention to use* 2. *Attitudes* 3. *Subjective norms* 4. Perceived usefulness 5. Perceived ease of use	Perceived usefulness strongly influenced intentions; perceived ease of use had a small but significant effect on intentions; attitudes only partially mediated the effects of these beliefs on intentions
Mathieson (1991)	Comparing TAM with TPB	163 senior and junior students	1. Ease of use 2. Usefulness 3. Attitude 4. Subjective norms 5. *Behavioral control* 6. Intention to use	Both TAM and TPB predicted intention to use an IS quite well. TAM is easier to apply, but only supplies very general information. TPB provides more specific information that can better guide development
Adams *et al.* (1992)	To replicate Davis' study on the relationship between ease of use, usefulness, and system usage	118 respondents from 10 organizations	1. Usefulness 2. Ease of use 3. *Usage*	The results in Davis' study (1989) were confirmed. The relationship between usefulness, ease of use and usage is influenced by whether the use is mandatory or voluntary
Davis (1993)	System characteristics, user perceptions and behavioral impacts	112 professionals and managerial employees	1. *System design features* 2. Perceived usefulness 3. Perceived ease of use 4. Attitude toward using 5. Actual system use	Perceived usefulness was 50 per cent more influential than ease of use in determining usage. Design choices influence user acceptance
Taylor and Todd (1995)	A test of TAM, TPB, and decomposed TPB models	786 business school students	1. *Compatibility* 2. *Peer influence* 3. *Superior's influence* 4. *Self efficacy* 5. *Resource facilitating conditions* 6. *Technology facilitating conditions* 7. Perceived usefulness 8. Ease of use 9. Attitudes 10. Subjective norms 11. Perceived behavioral control	All TAM, TPB, and the decomposed TPB performed well in terms of fit and roughly equivalent in their ability to explain behavior. The decomposed TPB provides a fuller understanding of behavioral intention by focusing on the factors likely to influence systems use through use of both design and implementation strategies

			12. Behavioral intention 13. Usage behaviors	
Igbaria *et al.* (1995)	Develop and test an integrated conceptual model of computer usage	214 part-time MBA students	1. *User training* 2. *Computer experience* 3. *Organizational support* 4. End user support 5. System quality 6. Perceived ease of use 7. Perceived usefulness 8. Perceived usage 9. *Variety of use*	The tested model confirms the effects of individual, organizational, and system characteristics on perceived ease of use and perceived usefulness, confirms the influence of perceived ease of use on perceived usefulness, and the effects of perceived usefulness on perceived usage and variety of use

Table I

Studies	Research purposes	Sample[a]	Factors/constructs developed/ tested[b]	Results
Chau (1996)	Empirical assessment of a modified TAM model	285 clerical/ administrative staff	1. *Near-term usefulness* 2. *Long-term usefulness* 3. Ease of use 4. Behavioral intention to use	Perceived near-term usefulness had the most significant influence on the behavioral intention. Perceived long-term usefulness also exerted a positive, but lesser impact. No significant, direct relationship between ease of use and behavioral intention
Agarwal and Prasad (1997)	Examines relationship between innovation characteristics and perceived voluntariness, and acceptance behavior	73 MBA students with access to World Wide Web	1. *Innovation characteristics* (including relative advantage and ease of use) 2. *Perceived voluntariness* 3. Current use 4. *Future use* 5. Intentions	Innovation characteristics are related to adoption behavior. User perceptions are instrumental to substantial proportion of variance in current use and future intentions to use. Ease of use did not appear to be an important determinant of current use
Agarwal and Prasad (1998)	Proposes a new construct, personal innovativeness in the domain of IT	175 business professionals in a part-time MBA program	1. *Relative advantage* 2. Ease of use 3. Compatibility 4. Personal innovativeness 5. *Computer playfulness*	The construct of personal innovativeness was validated to identify early adopters of IT/IS when resources are limited
Agarwal and Prasad (1998)	Proposes a new construct, personal innovativeness in the domain of IT	175 business professionals in a part-time MBA program	1. *Relative advantage* 2. Ease of use 3. Compatibility 4. Personal innovativeness 5. *Computer playfulness* 6. Intention to use	The construct of personal innovativeness was validated to identify early adopters of IT/IS when resources are limited
Agarwal and Prasad (1999)	Examines relationship between individual differences and IT acceptance	230 users of an IT innovation	1. *Individual differences* 2. Perceived usefulness 3. Ease of use 4. Attitude 5. Behavioral intentions	Individual level of education, prior similar experience, training, and role with technology have significant influences on TAM's beliefs
Al-gahtani and King (1999)	Tests and develops TAM model	329 final year university students in UK	1. *Course* 2. Computer experience 3. Training 4. Support 5. *Image* 6. Compatibility 7. System rating 8. *Relative advantage* 9. *Enjoyment* 10. Ease of use	TAM is a valuable tool for predicting attitudes, satisfaction, and usage from beliefs and external variables. Relative advantage of the system contributed most to attitudes and satisfaction

			11. Attitude 12. *Satisfaction* 13. Usage	
Hu *et al.* (1999)	The applicability of the TAM model in explaining physicians' decisions to accept telemedicine technology	421 physicians from Hong Kong hospitals	1. Perceived usefulness 2. Perceived ease of use 3. Attitude 4. Intention to use	Perceived usefulness as a significant determinant of attitude and intention. Perceived ease of use was not. Need for incorporating additional factors or integrating with other IT acceptance models to improve TAM's specificity and explanatory utility
Jiang *et al.* (2000)	A modification of a TAM model to describe usage behavior	335 students from USA, Hong Kong and France	1. *Utilization of the Internet* 2. Near-term consequences 3. Long-term consequences 4. Experience 5. Facilitating conditions	Utilization of the Internet positively related to perceived near and long-term usefulness, prior experience, and facilitating conditions. The external factors had more substantial impact on utilization of the Internet

Table I

Studies	Research purposes	Sample[a]	Factors/constructs developed/ tested[b]	Results
Venkatesh (2000)	Presents and tests an anchoring and adjustment-based theoretical model of the determinants of system-specific perceived ease of use	246 employees using three measurements taken over a three-month period	1. Computer self-efficacy 2. *Perceptions of external control* 3. *Computer anxiety* 4. Computer playfulness 5. Perceived enjoyment 6. *Objective usability* 7. Perceived usefulness 8. Perceived ease of use 9. Behavioral intention to use	The anchors (computer self-efficacy, perceptions of external control, computer anxiety, computer playfulness) and adjustments (perceived enjoyment, objective usability) are determinants of system-specific perceived ease of use
Venkatesh and Davis (2000)	Develops and tests TAM2 model to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes	156 employees in four longitudinal field studies	1. Voluntariness 2. Experience 3. Subjective norm 4. Image 5. *Job relevance* 6. *Output quality result* 7. *Demonstrability* 8. Perceived usefulness 9. Perceived ease of use 10. Intention to use 11. Usage behavior	Both social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job, relevance, output quality, result demonstrability, and perceived ease of use) significantly influenced user acceptance
Chau and Hu (2001)	Compare TAM, TPB, and a decomposed TPB models	400 physicians in public tertiary hospitals in Hong Kong	1. Behavioral intention 2. Attitude 3. Subjective norms 4. Perceived behavioral control 5. Perceived usefulness 6. Perceived ease of use 7. Compatibility	TAM and TPB have limitations in explaining technology acceptance by individual professionals. Instruments repeatedly tested in previous studies among end users in business settings may not be equally valid in a professional setting
Horton *et al.* (2001)	Application of TAM in explaining intranet usage	466 employees from two UK companies	1. Perceived usefulness 2. Perceived ease of use 3. Intention to use 4. Self-reported usage	Perceived usefulness, perceived ease of use, and intention to use were implicated as being predictive of intranet use. TAM more suitable for modeling intranets in organizations with constrained information requirements and a structured work organization

Notes: [a]Sample was from the United States in no country information was given; [b]Factor in italics was developed the first time