

USE AND VALUE OF LIBRARY'S ELECTRONIC RESOURCES BY ACADEMICS
AND POSTGRADUATE STUDENTS AT CAPE PENINSULA UNIVERSITY OF
TECHNOLOGY (CPUT).

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Date:

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ABSTRACT

As libraries are in the transition of moving from print to electronic resources, the purpose of the study was to investigate the use and value of library's e-resources by academics and postgraduates at Cape Peninsula University of Technology (CPUT). There is evidence from previous studies that today's users have their information needs met via a number of options. They need not physically come to the library; they can stay at home or at their offices to access e-resources.

The study focused on the use and value of the library's e-resources in two departments (Electrical, Electronic and Computer Engineering and Mechanical Engineering) in the Faculty of Engineering. The main aim was to determine whether academics and postgraduates use e-resources, the purpose for which they used e-resources in the process of teaching, learning and research, the extent to which they were aware of the e-resources, the value they regarded as the benefit from using e-resources and the problems they encountered in their use of e-resources.

The study population consisted of 251 academics and postgraduates. A questionnaire was used as data collection instrument. The questionnaire was distributed to 82 academics, 135 MTech and 34 DTech students. The results of the study are based on the data from 60 returned questionnaires from academics and postgraduates. The study found that the majority of the respondents used e-resources, but a few respondents did not use e-resources because they were not aware of them. Respondents who used e-resources used them for a variety of purposes, including gathering information for a specific topic; doing literature reviews, getting answers to specific questions, and gaining general information. The study also encountered respondents who had problems when using e-resources. These problems included internet connections, slow downloading of articles; time constraints and the need for training in the use of e-resources. The majority of respondents from the study thought that they benefited from using the library's e-resources. Recommendations for action and further study were made.

KEYWORDS: Electronic Resources, Information and Communication Technologies (ICT's) ICT infrastructure, E-resources, Academic libraries, Engineering academics, Postgraduate students, Cape Peninsula University of Technology, CPUT Libraries, Electronic Information Resources, User Awareness,

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 Introduction

This study investigated the use of the library's electronic resources (e-resources) and the extent to which they are valued by academics and postgraduate students in the Faculty of Engineering at Cape Peninsula University of Technology (CPUT). The purpose of this study was to understand whether the various e-resources were used to meet study related information needs, and how they were used. The main aims were to determine whether academics and postgraduates used e-resources; how they used e-resources in the process of teaching, learning and research; and the extent to which respondents were aware of e-resources. In addition, the study aimed to highlight the problems faced by the academics and postgraduate students in accessing e-resources, as well as their view of the usefulness of e-resources. This study will make recommendations on ways of improving the use made of these e-resources. During the study, the aim was to understand the differences in user demands, in order to improve the value and utilization of e-resources.

To set the framework of the study, this chapter starts with a general overview of e-resources and presents the background of CPUT Libraries. It also briefly presents the e-resources that were available at CPUT Libraries, and an introduction to the information resources. It further states the research problem, the aims, objectives and research questions of the study. The research design and methodology are discussed, and terms are defined. The significance and limitations of the study are considered. This chapter concludes with a consideration of ethical implications and the outline of the chapters that follow.

According to Madhusudhan (2010:493), academic libraries have now become digital resources, which are less expensive and more helpful for easy access and use. E-resources become less expensive when more users use databases and download articles, so that cost per user decreases. Electronic collections are helpful especially

to distant learners who have limited time to spend in the library. These days users can access the library via off campus access. Libraries are no longer operating in a purely physical environment, but more often in a mixed environment that consists of both print and e-resources. With the development of the internet and the wealth of e-resources now available, large portions of library collections are no longer available on shelves in the library, but electronically on CD-ROM (Compact Disc, Read Only Memory), DVD (Digital Video Disc) or the internet. In order to report on the activities in academic libraries, one needs to know the extent of use of e-resources.

1.2 General overview of e-resources

Advancements in technology have changed the way information is presented and circulated. Therefore, the collection of the library is not limited to print collections that require users to visit the library. Electronic access in libraries, according to Hawthorne (2008: 1) dates back to the mid-1960s with the introduction of the machine readable catalogue, which was followed by Online Public Access Catalogues (OPACs). In the late 1960s bibliographic databases were developed, followed by CD-ROM databases in the late 1980s, then online databases, and by web-based (internet) databases towards the turn of the 21st century, which also saw the introduction of electronic serials and electronic books. In 1990; e-resources such as e-journals, e-books and full-text databases have emerged as important sources of information (Nisonger 2003: 231). He also noted that these e-resources allow users who have internet access to search and retrieve information from anywhere and anytime. This is in agreement with Pantry (1997:14) who noted that it is now possible for users to have cheap and effective access to information which was previously not accessible or even known.

1.2.1 Library Collections

Traditionally, library collections consisted of books, manuscripts, journals and other forms of recorded information. These usually included reference works such as encyclopedias that provided ready reference, indexes that helped users to find information in other sources, fiction such as novels and short stories, music and photographs, non-fiction such as biographies, history and important reports, periodical publications such as magazines scientific and scholarly journals and books. Today, many libraries continue to purchase and catalogue books and to provide services to users who personally visit the library. The combination of both

the traditional and the e-resource services is known as the hybrid library (ARL Bimonthly Report 2002: 225).

In our days, access to e-resources is 24/7. The most popular form of ICT that is available today is the internet and it has made the maximum effect on access for library users worldwide (Ingutia-Oyieke & Dick, 2010:65). This study will explore the use of e-resources in the CPUT libraries.

1.2.2 Introduction to information resources

According to Shuling (2007: 72) “electronic information has gradually become a major resource in every university library”. The emergence of e-resources transformed information handling and management in the academic environment and in University libraries. Through the use of e-resources, academics and students now have access to global electronic information resources for their scholarly communication.

With the rapid development of information communication technologies (ICT), e-resources have increasingly become readily available and easily accessible, giving access to the variety of e-resources as well as providing information about available library services. E-resources usually consist of databases, electronic books (e-books), e-journals, electronic newspapers and electronic magazines, archives, theses, conference papers, government papers, research reports, scripts and monographs in an electronic form (Deng, 2010: 88).

According to Graham (2003: 18-23) the term “electronic resources” does not appear to be used consistently. There may be reference to electronic information services (EIS), electronic information resources or electronic library resources, to mention just some of the available terminology. Therefore, “electronic resources has broadly been defined as, information accessed by a computer that may be useful as bibliographic guides to potential sources but which may also appear as cited references in their own right” (Graham, 2003: 18-23) He also noted that e-resources are mines of information that are discovered through modern ICT devices.

In recent years, electronic journals have become widely popular among library users (Swain & Panda, 2009:75). One can access electronic journals round the clock across geographical barriers which make electronic journals omnipresent. Electronic

journals are published and reach subscribers well before their print counterparts. Another important advantage of electronic journals is that more than one user can access them at the same time. Articles can be downloaded and printed simultaneously by more than one reader, depending upon access rights and permission. E-resources also carry the potential power to increase the learning opportunities offered to students. For example, by providing teaching information in electronic form, teaching possibilities are enhanced by giving students access to a greater variety of exercises and making courses much more lively and interactive. As the role of libraries continues to change, librarians are making more and more e-resources available for use.

1.3 Background to CPUT Libraries

According to its mission statement, CPUT Libraries aim to develop an efficient and sustainable library service to enable libraries to pro-actively respond to the teaching, learning, research and scholarship needs of the institution, through innovative services, cutting-edge systems as well as excellent facilities and resources (Chiware, 2011: 2). The vision of CPUT Libraries is to be an innovative, leading information partner, enabling the institution to be at the heart of technology education in Africa (Chiware, 2011: 2).

The CPUT Library system was established in January 2005 as the product of the merging of two Technikon libraries in the Western Cape (the Cape Technikon and the Peninsula Technikon Libraries). Access to the library system is available at five campuses and five sites run in conjunction with Western Cape College of Nursing (WCCN). Campuses are as follows: Bellville, Cape Town, Granger Bay, Mowbray and Wellington. Sites are as follows: Athlone, Groote Schuur, Thomas Patullo, Tygerberg and Worcester. CPUT libraries provide resources, information and information literacy programmes to support teaching, learning and research at different campuses. The strengths of each library collection reflect the academic programmes offered at that campus. Staff and students at CPUT may make use of the library at any campus and may consult materials held in all the libraries. The library has developed links with both local and international libraries.

CPUT Libraries provide computer access to facilities for research purposes at all ten campuses. The library also has off-campus access to resources which allow users

to access electronic materials outside CPUT campuses. Computers or information resources can be accessed in the Learning Commons (computer laboratory) at the Cape Town and Bellville libraries and in library computer rooms at other branches. The Learning Commons in Bellville and Cape Town consist of computers that can assist users of the library to type their projects, scan documents, to search the internet and many databases. The library has Research Information Support Centre's (RISC) both in Bellville and in Cape Town, which offer specialized services to post-graduate students.

1.4 Brief overview of e-resources available at CPUT Libraries

For the purpose of this study, e-resources refer to all information resources available in electronic format either via subscription databases, or single titles of journals, and e-books collections. Subscriptions to e-resources are available through CPUT Libraries.

Users of the library will find a list of e-resources on the library homepage (<http://library.cput.ac.za/>) which enables access to various information entry points. Links are arranged so that one can go to the main search page of each platform, or to individual databases. Databases are categorized according to faculty colour coding and are in alphabetical in order.

The following online databases are available:

ACM Digital Library, Books 24X7 (EngineeringPro), Cambridge Journals Online, Credo Reference, Ebsco Databases, EbscoHost Package, Emerald, Engineering Village, Gale Package A, ICE Virtual Library, IEEE Explore, Proquest Databases, Sabinet Databases, SA e-Publications, Scopus and Wiley-Online.

1.5 Statement of the problem

The CPUT Libraries have made significant investments in e-resources and accompanying computer-based technology to ensure access to e-resources. The e-resources budget allocated for Engineering in 2011 was R754,700.24 and R951, 217.02 in 2012. The Budget increased for the past two years, as there was a new subscription for two expensive databases, IEEE Explorer and ACM Digital Library. Most of the CPUT Libraries databases are multidisciplinary. Although CPUT

Libraries pay for subscriptions or access to e-resources, this cost is hidden from users. CPUT Libraries spend this money on subscribing and purchasing different types of e-resources that can be accessed on campus or off-campus around the clock.

As CPUT Libraries spend a lot of money to make the above e-resources available for use, it is important to find out about their usage. It is crucial to determine the extent of use and understand which available databases are currently being used, as the cost of information resources should be justified by usage. If some databases are not being used very much, it may be important to know this in order to make suggestions regarding possibilities of improving usage of the resources, or cancelling subscriptions. However, the Libraries have been concerned that many of these databases were underutilized by the faculties. See the table below

Table 1: Evidence of e-resources usage

DATABASE TITLE	Cost in 2011	No. of searches	No. of Sessions	Full-text articles retrieved	Cost per search	Cost per full-text
Science Direct	ZAR 584,849.16	57911	48020	120896	ZAR 10.10	ZAR 4.84
SA e-PUBLICATIONS	ZAR 237,515.55	52656	46020	1655	ZAR 4.51	ZAR 143.51
ICEI Virtual Library	ZAR 58,544.20	na	na	123	na	ZAR 475.97
ELECTRONIC BOOKS						
AccessScience	ZAR 24,292.00	204	292	212	ZAR 119.08	ZAR 114.58
Books24x7	ZAR 296,880.00	5461	7445	18204	ZAR 54.36	ZAR 16.31

Table 1: E-resources usage analysis (2011)

The table above illustrates the usage of e-resources at CPUT Libraries. The usage analysis shows how much these e-resources are being accessed and utilized by Library users. If the cost per full text article is high as displayed on the last column of the table above, it means the e-resources is not heavily used and therefore accessing an article becomes expensive. ICE Virtual Library is one of the Engineering databases that have not been accessed heavily, and a full text article costs R475.97 which is very expensive for a single article.

The reason for ICE Virtual Library to be so costly is because only 123 full text articles were retrieved, and ICE virtual is only subject specific to Civil Engineering and Surveying. In the case of the most highly used database, Science Direct could be because of its being multidisciplinary databases.

In the library these e-resources are marketed through training sessions that are offered to all staff and students by Faculty Librarians. These sessions are offered using group training sessions as well as one-on-one sessions when requested. The principle is the same for electronic books e.g. Access Science costs R114.58 per download with 212 retrievals, whereas Books 24x7 costs R16.31 with 18204 retrievals. This demonstrates that not all e-resources are used to the same extent. The Faculty of Engineering also had the largest e-resources' budget in 2012 compared to the 2011 e-resources budget.

This study will investigate the reported use and value of library's e-resources by academics and postgraduates in the faculty of Engineering.

Supporting the teaching, learning and research activities is a major mission for academic libraries. This researcher's experience as engineering faculty librarian for four years has convinced her of the need for this study. As academic libraries are in transition, moving from the traditional to the virtual library environment, librarians have to be aware of trends, such as those librarians also need to broaden their portfolio of skills to provide services to users. Academic librarians also need ongoing formal training to continue in the profession. Budget reductions, user preferences for electronic access to materials, limited physical space, and the inability to financially sustain comprehensive collections have led many academic libraries to shift from a "just-in-case" to a "just-in-time" approach to collection development (ACRL, 2010: 286). At CPUT Libraries, users can access e-resources 24/7 on campus and off-

campus. Access from outside the University Network requires the use of a CPUT password. These are available to registered staff and students of CPUT.

1.5.1 Key research questions

The key research questions of this study are:

To what extent do academics and postgraduate students use e-resources in the teaching, learning and research process at CPUT? Which e-resources do they use and what problems do they encounter when using e-resources?

1.5.2 Aims and objectives of the study

This study therefore aims to investigate the faculty's access to computers and use and value of e-resources by academics and postgraduates of two departments (Electrical, Electronic and Computer and Mechanical) in the Faculty of Engineering at CPUT. A further aim was to consider issues related to e-resources such as use, value, awareness, purpose, problems; and to make recommendations to guide CPUT Libraries to improve e-resources use and value. Also the areas of training needed by faculty to utilize e-resources efficiently and effectively,

1.5.3 Research questions

The purpose of this study is to address the key questions noted above as well as to find answers to the following questions about the use and value of e-resources from faculty of engineering academics and postgraduates, the extent to which they meet their information needs and to find ways of improving the use and value of the e-resources. These research questions were asked to guide this study:

- Do engineering academics and postgraduate students use e-resources?
- For what purposes do academics, researchers and postgraduates use electronic resources?
- What is the value of using e-resources to the process of teaching, learning and research?
- What problems do academics, researchers and postgraduates encounter when using e-resources?

1.6 Research design and methodology

The process of data gathering to answer the questions for this research is described in detail in chapter three. A questionnaire survey to academics and postgraduates at the Faculty of Engineering, CPUT, was undertaken in May 2012. A questionnaire based on one designed by Soyizwapi (2005) was used. It was regarded as an efficient way of collecting data from the two departments in the Faculty of Engineering. Soyizwapi's study was about the use of electronic databases by postgraduates in the Faculty of Science and Agriculture at the University of KwaZulu-Natal, Pietermaritzburg. This study was adapted as questions were added appropriate to the CPUT context.

In order to learn what other libraries are doing with regards to the use and value of e-resources, a literature review was conducted to find out how the research questions have been addressed in the literature. Based on the findings from the literature review a questionnaire was constructed. In 2012 there were 82 academics and 169 postgraduates in the two departments at CPUT. A total of 251 questionnaires were distributed in the two departments (Electrical, Electronic and Computer Engineering and Mechanical Engineering) in the Faculty of Engineering.

1.7 Definition of terms

The following terms are frequently used in dissertation.

Databases are used to refer to indexing and abstracting databases or the so-called aggregated databases which are essentially collections of full-text electronic journals in libraries.

Electronic Journals are journals that exist in digital form on the internet, or on CD-ROM or DVD. They can be either an electronic version of a print journal, or exist only in electronic format.

Electronic resources have been used to encompass all information sources (books, journals, databases and other formats) that exist in an electronic/ digital format, e.g. computer discs, CD-ROM, DVD or accessed on the internet.

Postgraduate Students are students who already have an undergraduate degree, and who are studying a postgraduate qualification which may be a diploma or a degree such as Honors, Masters or Doctor of Philosophy.

1.8 Significance and limitations

The value of the study relates to the understanding of the usage of electronic resources by postgraduates and academics of the faculty of Engineering at CPUT. This study will attempt to identify which of the variables presented play a significant role in the use and value of e-resources. It will demonstrate problems associated with the use and value of e-resources. It will also be beneficial to academics, students and professionals who are interested in this area of study. This study will be a guide for CPUT libraries to improve its services. As CPUT is the result of the merger of the Cape Technikon and the Peninsula Technikon in 2005, there is still some duplication of faculties and departments between two campuses; therefore the Cape Town campus did not form part of this study. The investigation was carried out in two departments in the Faculty of Engineering. There was no comparison with other faculties in CPUT. Undergraduate students were not part of the participants in this study. These students are still new to the university environment and many come from disadvantaged communities; therefore they need more time to learn the physical format of material before they can use e-resources. This study will only focus on the main campus which is Bellville.

1.9 Ethical considerations

“Researchers need to protect their research participants, they must develop a trust with them; promote the integrity of research, guard against misconduct and impropriety that might reflect on their institutions or organizations” (Creswell, 2009: 87). There are ethical implications with any research conducted with humans, but as far as possible students and academics were guaranteed that no person’s right would be violated in any manner. Permission and ethical clearance were granted by the Director of CPUT libraries and the Dean of Engineering Faculty to conduct the study. It was undertaken that raw data would not be shared with anyone. Findings only would be presented to both management and participants. Participants participated voluntarily, and they were free to withdraw at any stage of the research process. An undertaking was given that participants’ responses will be anonymous and confidential.

1.10 Outline of chapters

Chapter one has provided an introduction to the research project. Chapter Two reviews the literature relevant to this study. Chapter three describes the research site

and the research methods used in this study. Chapter Four presents and summarizes the data collected by questionnaires. Chapter Five analyses and interprets the research findings in order to answer the research questions. It concludes by making some recommendations for the library management and for further research.

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CHAPTER 2:

LITERATURE REVIEW

2.1 Introduction

Gash (2000:1) defined the literature search as a “systematic and thorough search of all types of published literature in order to identify as many items as possible that are relevant to a particular topic”. A number of relevant studies have been carried out on the use of e-resources by academics, postgraduates and research scholars of universities, especially from developed but also from developing countries. This chapter will focus on the literature related to the study of the use and value of e-resources in academic libraries. These types of published materials include books, journal articles, reports, conference papers and theses. The aim of this chapter is to give a clear indication of what research has been done, which could guide this study.

The literature has shown that the use of electronic resources in many countries world wide is regarded as vital in this new technological era, for example; Tenopir and Read (2000) explained that the use of e-resources may be traced in patterns. The greatest number of users of e-sources online is early in the week, at midday and in the month when term papers are due. They also noted that there are clear valleys and peaks for use following the rhythms of academic life.

2.1.1 Review of related studies

Previous studies were reviewed in relation to the use and value of library e-resources in the higher education sector. The review focused mainly on academic and postgraduate students. It is organized and discussed under the following headings: use of e-resources in academic libraries; use of e-resources by academics; use of e-resources by postgraduate students; purpose of e-resources in academic libraries; purpose of e-resources to academics; purpose of e-resources to postgraduate students; value of e-resources; Information skills of academics and postgraduates in use of e-resources, e-resources supporting teaching, learning and research, awareness of e-resources, information seeking behavior theory and barriers in the use and value of e-resources.

The studies that have investigated the use and value of e-resources within the higher education sector can be generally grouped into three main categories as follows:

- Category one includes studies that have focused on the entire academic community; that is academic staff and students belonging to one or more institutions of higher learning. These include; for example studies conducted by Ali (2005); Appleton (2006); Dadzie (2005); Shuling (2007); Swain and Panda (2009); Kaur and Verma (2009); Deng (2010); Madhusudhan (2010); Tyagi (2011); Mulla (2011); Zhang, Ye and Liu (2011). Egberongbe (2011) Dhanavandan, Esmail & Nagarajan (2012).
- Category two includes studies that have concentrated only on academic staff members in a single disciplinary area and they have explored the use of e-resources among academics in the identified areas. These studies include Majid and Abazova (1999); Agaba, Kigongo-Bukenya and Nyumba (2004); Rehman and Ramzy (2004), Renwick (2005); Ozoemelem (2009); Omotayo (2010); Ansari and Zuberi (2010); Shukla and Mishra (2011); Bhatt and Rana (2011); Bashorun, Tunji and Adisa (2011); Sethi and Panda (2011); Salaam, Ajiboye and Bankole (2013)
- Category three includes those studies that have targeted only students as their objects of analysis; these include studies conducted by, for example. Asemi and Riyahiniya (2007); Ingutia-Oyieke and Dick (2010).

2.1.2 Use of e-resources in academic libraries

A number of studies have explored the use of e-resources in the academic environment. The purpose of academic libraries is to provide information resources which meet their users' needs. Electronic resources have therefore become a major part of the academic library's collection in the fulfillment of its role of teaching, learning, research, and services to the community. Academic libraries have focused their attention on acquiring electronic resources, organizing them and presenting them to their community.

A study conducted by Dadzie (2005) in Ghana investigated e-resources access and usage at Asheshi University College. The study found that general computer usage

for information access was high because of the university's state of the art IT infrastructure. Usage of some internet resources was also very high whilst the use of scholarly databases was quite low. The low investment was attributed to inadequate information about the existence of these library resources. The study also recommended the introduction of information competency across the curriculum and introduction of a one unit course to be taught at all levels, and the provision of personal computers on campus.

Shuling (2007) analyzed the use of e-resources in Shaanxi University of Science and Technology in China. The study found that nearly 80% of respondents knew little about e-resources. Nearly half of the respondents use both printed and e-resources. The study also found that the reason for using printed periodicals are that academics were teaching and preparing for their lessons and improving their teaching skills; they have little time to do scientific research; and networks were not available at home because they could not afford them. Zhang, Ye and Liu (2011) conducted a survey of the use of e-resources at seven universities in Wuhan, China. The purpose of this survey was to report on users' information behaviour in China. The aim was to help producers and providers collect and develop more e-resources. The results showed that most National Science and Technology library users were graduates and young staff members; male users performed better than female ones. Findings suggested that e-resource producers should offer more foreign literature and providers should improve the quality of services.

In India, Kaur and Verma (2009) attempted to study issues like the use of electronic information resources. Their impact on the collection of print and e-journals, awareness among the users, and places where the users can access these resources. The study revealed that a large number of users had started using e-journals. It also found that the impact of e-resources was visible in such a way that there was a decrease in the use of the print journal collection and the printed material was being replaced by e-resources.

Also in India, Ali (2005), Swain and Panda (2009) and Madhusudhan (2010) explored undergraduates, postgraduates and professional librarians. Swain and Panda (2007) and Madhusudhan (2010) found that e-sources were being used and could be good substitutes for conventional resources if the access was fast and

more computers were installed to provide better services. Both studies found that Google was the most widely used search engine for locating information electronically. On the contrary Ali's study found that Boolean operators and truncation were the most frequency used search facilities. Furthermore, the lack of printing facilities, terminals and trained staff were the major reasons that would discourage users from accessing the electronic information services. The survey also revealed that some sixty percent of users faced difficulties while browsing e-resources. Ali (2005: 698) provided a number of recommendations in order to improve the information facilities, services and user training programs in IITD Library. These recommendations were that:

- User training is essential for the better use of electronic resources in the library since the majority of the scientists are searching electronic literature on their own.
- Users should be taught about the advanced search strategies to make the electronic search process much easier.
- The Library should start a bulletin board service for posting messages and announcements to inform electronic reference library users about new electronic scientific resources.
- The library should provide subscriptions to more electronic primary and secondary sources.

Madhusudhan (2010) also noted that electronic publishing in India had led to a new era of information communication. E-resources were becoming an effective and popular medium of communication among researchers. Madhusudhan found that:

- Providing faster access to improve and maximize the optimum utilization of e-resources among the research scholars would save much of the user's time.
- Organizing orientation classes and training programmes in accessing, searching and downloading e-resources effectively at regular intervals, and fostering awareness among the research scholars should be created to use e-resources to obtain current information, were required.

Swain and Panda (2007) and Madhusudhan (2010) noted that the reason for many search engines not being used could be due to lack of awareness among the users. Swain and Panda also noted that while e-resources enabled users to access the content on their desktops, users have to know the nature, content and characteristics of e-resources for deriving optimum satisfaction in accessing the contents of these resources. Therefore, it was important for the information professionals to identify, understand, acquire, process and teach the user community how to utilize e-resources in different formats through various subscribed databases. In the light of findings from the above studies, it is highly recommended that library practitioners should meet these challenging situations. Firstly, they should encourage the user to engage with e-resources and their importance in research and academic work. Secondly, librarians should establish fora to discuss their problems, and develop scenarios relating to enhancement of e-resources and services.

Another study was conducted by Tyagi (2011) at IIT Roorkee, India. The study used a questionnaire-based survey method along with observations and informal interviews.

The results offered significant insight into the level of use of electronic journals. This study showed that most users were aware of the availability of e-resources through the library home page and they made maximum use of it for various purposes. Based on the findings, their recommendations were as follows:

- Subscriptions to e-resources should keep in mind the priorities and preferences of users.
- Announcements should be made about the availability of new e-resources and additions of new databases for users of the library.
- Special training programmes should be organized for students and faculty members for use of e-resources so that users could learn to trace relevant information.
- More computers with the latest specifications should be installed, so that the users could use the internet.
- Problems related to slow connectivity should be overcome by upgrading the bandwidth. Another suggestion was that the important role of academic libraries was to promote and provide instructions in the use of e-resources, as RSS feeds are available from a variety of databases, e-journals and e-books

which were still not well exploited by many academic libraries (Tyagi, 2011: 4586-17-18).

Deng (2010) conducted a study to investigate the extent to which e-resources were utilized in higher education in Australia. The study intended to explore the patterns and trends of accessing and using e-resources in a university library in order to help university libraries to manage their resources better. It also aimed to identify the critical factors for the effective and efficient use of e-resources. An online survey was conducted. The study revealed that the usage of e-resources is now common in a university environment. It showed that the use of e-resources was very much dependent on the user and the purposes of using e-resources. Awareness and the quality of the available e-resources were the two important factors for the effective and efficient use of e-resources. Those findings shed light on the use of e-resources and helped university libraries understand the perception and experience of users in using e-resources, leading to more effective and efficient use of e-resources.

A study conducted in Nigeria by Egberongbe (2011) found that e-resources such as bibliographic databases, e-newspapers and e-magazines were not used very much. Furthermore, the study showed that lecturers and research scholars were aware of e-resources. Awareness of e-resources indicated user knowledge of the availability of the e-resources, and that they made use of them. The study showed that the majority of scholars did not get training in the use of e-resources. The study revealed that the level of IT skills among lecturers, scholars and library staff was variable and low. Most users used informal methods for training themselves; for example one on one consultations. It was also observed that groups of users were not getting proper encouragement by university management to participate in training programmes. The results of this study revealed that e-resources were preferred by some respondents because they were more useful, time saving, easy to use, more informative and less expensive.

Gakibayo, Ikoja-Odongo and Okello-Obura (2013: 5) in Uganda, emphasized that academic libraries were an integral part of universities and had a critical role to play in supporting the core mission of the university that is teaching, learning and research. For example, e-resources made available by university libraries to university communities; faculty, staff, students and other authorized users are for activities that support the university mission. One may therefore conclude that these

studies have shown that e-resources are widely used in universities, but there is a relationship between computer literacy and use of e-resources. Where IT resources were lacking and computer skills were low, less use was made of e-resources. Most academics and students surveyed were computer literate to some extent, but they needed to develop their searching skills.

Good internet connectivity encouraged users to use the e-resources to which university libraries subscribed. University libraries invest in these e-resources, as they want to get a good return on investment through the resulting research.

2.1.3 Use of e-resources by academics

Agaba, Kigongo-Bukenya and Nyumba (2004) investigated the utilization of electronic information resources by the academic staff of Makerere University in Uganda. They explored the academic staff awareness of the e-resources available in the university. The questionnaire was both qualitative and quantitative, using interviews and content analysis methods. Findings revealed that a limited number of academic staff utilized e-resources. Most staff members were aware of the availability of these e-resources, though they had not used them. The frequency of use of these resources indicated that a lot had to be done to attract more users. The study recommended the enhancement of ICT's decentralization of service provision and increased marketing strategies. Omotayo's study (2010). A few years later found that academics at Obafemi Awolowo University, Ile-Ife, in Nigeria used e-resources mostly for literature searching in research and for professional growth.

Kumar and Kumar (2008) in India noted reasons for using electronic information sources. Users in their study used electronic sources in support of their study and teaching. One third of respondents used the sources for project work in both medical and engineering and management studies. Ansari and Zuberi (2010) in India report that about one third of respondents use electronic resources for research. About one quarter use them to prepare lectures and for gaining subject knowledge.

Ansari and Zuberi, investigated the use of e-resources among academics at University of Karachi. The study showed that an internet connection was available to the departments. A majority of the academics had computer skills that facilitated the use of e-resources, although many had little knowledge of e-resources, not a positive

aspect of the findings. Lack of knowledge and facilities were found to be the main reasons for not using e-resources.

On the other hand, Shukla and Mishra (2011) studied use of e-resources by research scholars at Banaras Hindu University in India. The purpose was to determine the extent to which research scholars were aware and made use of e-resources, also to find the problems facing them in accessing e-resources. The study found that research scholars prefer e-resources to print resources. It showed that the majority of respondents frequently use e-resources, daily or weekly. Respondents were looking forward to having more e-resource access on the university campus with better internet connectivity.

Bhatt and Rana (2011) conducted a study in India with the purpose of analyzing and evaluating the use of e-resources by the engineering academics of Rajasthan state. The aim of this study was to consider the various factors of e-resources usage such as purposes, impact, importance, problems, acceptance, and satisfaction with e-resources. The survey was conducted with the help of a structured questionnaire followed by selected interviews. The study revealed that academics were using many types of e-resources. The frequency of using e-resources was quite high, most users were either using them daily or several times a week. By using e-resources their academic professional competency also improved. The internet and intranet facilities were excellent; users were accessing e-resources in their own respective departments. Their teaching methodologies involved e-resources use and the students' ability to use e-resources was also affected in a positive way. They were using the latest sources of information like e-groups, and virtual conferences. The majority of users were quite satisfied with using e-resources.

Bashorun, Tunji and Adisa (2011) conducted a study to examine the user perceptions of e-resources by academics of the University of Ilorin, Nigeria. Responses were received from 225 academics staff of eight faculties. Analysis revealed that the frequency of use of e-resources was low. Reasons mentioned were lack of time because of the time required to focus on teaching, lack of awareness of e-resources provided by the library; power outages, ineffective communication channels; slow network and inadequate information communication technology

(ICT); lack of training for all categories of academic staff and lack of adequate power supply. Smith (2007) from South Africa found that a lack of bandwidth was a major problem and the ranges of electronic journals in the respondents' field of interest were fairly limited at the time.

Therefore, it can be concluded that academics and students in these African and also Indian countries use computer and internet technologies to search for information because of university library lack of funds to subscribe to print scholarly and research journals. This was confirmed by studies done in Nigeria by Ehikhamenor, (2003) Azubogu & Madu, (2007) & Gbaje, (2007).

2.1.4 Use of e-resources by postgraduates students

Soyizwapi (2005) conducted a research study among number of postgraduate students in the Faculty of Science and Agriculture at the University of KwaZulu-Natal, Pietermaritzburg. The study focused on the use students made of electronic databases which provided information needed for their studies. A questionnaire survey was used in the data collection. The findings of the study indicated that postgraduate students used electronic databases, but that a few of the databases were not used. She also found that a number of problems were experienced by postgraduates when using the databases. Postgraduates became aware of the availability of electronic databases from a variety of sources such as friends, library orientation programmes and academic staff. It was also found that search engines were identified as resources that were very popular with almost all the students. There was a need for training in the use of databases and a need for improving access for all campus and off-campus users. As the research instrument of the present study was based on Soyizwapi's work, this was a particularly important investigation.

2.2 Purpose of e-resources in academic libraries

Tenopir and King (2007) found that the principal reason for using e-resources in seven US and Australian universities was that more than 50% use e-resources for research. Another study conducted in Australia by Deng, (2010) found that there were various purposes for a user to use e-resources including: gathering information on a specific topic, gaining general information, obtaining answers to specific

questions, completing assignments, reviewing literature, writing essays and helping decision making. It also found that respondents use e-resources for each of the above purposes. Such an observation reflects the fact that currently users are dependent on the availability of e-resources for meeting many of their academic needs.

2.2.1 Purpose of e-resources for academics

Several studies examined the purpose for which academics, researchers and students use various e-resources. For example, Ali (2005) and Madhusudhan (2010) in India have analyzed purposes for which academics used e-resources. It is crucial to understand the purpose for which the above users use e-resources because academic librarians are under pressure to demonstrate the value of their collection (Tenopir & King, 2010:1). Thus, the library provides a return on investment (ROI) to its institution. This ROI varies according to the purpose of the institution (research and teaching) and how the return is measured.

A study conducted by Obaje and Camble (2008) in the University of Jos Library reported that e-resources were mostly used for literature searches during project, dissertation and thesis writing as well as for personal research by staff. At the time the focus was the use of CD-ROM databases. Findings revealed that many staff and students were not properly informed of the existence of CD-ROM databases in the library. Therefore, they used inappropriate search terms thereby retrieving irrelevant information.

Saka and Abdulrahman (2008) found that library staff in four universities of technology in Northern Nigeria did Internet browsing, word processing, information and record storage, while other use computers for information retrieval for services. In Catalan Universities, electronic journals were consulted for both research and teaching by the respondents to a survey. According to the study conducted by Borrego et. al. (2007), e-resources were consulted only for research and teaching by respondents. When the results were disaggregated by age, respondents under the age 30 mainly used them for research, respondents in the 41-50 age groups used them for both teaching and research, and respondents over 51 used them for teaching and research or only for teaching. Disaggregated by academic position, only the associate professors showed a high proportion of use for teaching.

The literature has shown that academics used e-resources for many purposes. Ali (2005) and Madhusudhan (2010) showed that 94% of the respondents use e-resources for research work. Other respondents used e-resources for keeping themselves up to date in their subject field and getting current information. Research scholars also used e-resources for teaching and publishing articles and books. A study conducted at HKBK College of Engineering in India reported that academics used e-resources for finding relevant information in their specialization and teaching purpose, using e-resources for research whereas others gained current and general information. A small percentage found that e-resources were used for communication purposes. They also use e-resources to keep up to date their knowledge and for finding relevant information in their area of specialization. Shukla and Mishra (2011) confirmed that a majority of research scholars use e-resources for publishing articles to keep up to date and for finding relevant information in their area of specialization.

2.3 Value of e-resources

Academic libraries are under increasing pressure to demonstrate the value of their collections and focus on services that support e-resources. Measures of value and return on investment can help demonstrate the value of the library and help librarians set priorities for the future. Use of e-resources by academics and postgraduates implies that these e-resources are valued by them. Increased use shows increased value. When academic librarians learn about the impact of their resources and services on users, they increase their value by proactively delivering improved services and resources to students completing their academic work; to faculty preparing publications and proposals; and to administrators needing evidence to make decisions. For example Kolowich (2010: 1) wrote. "Indeed, the demonstration of value is not about looking valuable; it's about being valuable".

A study by Scotti (2010) of Springer in New York on the value and return on investment on the acquiring of e-resources, found that the use of e-resource made end users abreast of developments, saved time and money. Information was easily accessible and duplication of research was avoided. This is in agreement with the study done by Tenopir (2009) of the University of Tennessee who examined the concept of ROI in the context of academic libraries. She found that e-resources help academics and students to open or discard lines of research at the very beginning by

knowing what other researchers have published or were soon going to publish. She also mentioned that e-resources saved time, a search that used to take the whole afternoon now could take 15-30 minutes and there was no need to go to the library; resources may be accessed remotely

Scotti (2010: 22) envisaged that, “identifying and communicating value is a challenge for many professions, one that is becoming more complex for librarians as sweeping technological changes continue to reshape the information industry”. It was found that ROI and how to measure ROI were frequently discussed. The study aimed to establish library value and return on investment. It investigated the science, technological and medical e-journals and e-books and focused on how the introduction and increase of e-resources was actually making it harder, not easier, to identify appropriate metrics for measuring value.

Scotti’s study found that “among end users of information, three value considerations stood out: staying current, saving time and saving money”. In all three areas, e-books and e-journals could change the value equation. Scotti also found that e-resources reached the market more quickly and were easier to access. The study confirmed that “the biggest impact of e-resources was time savings, mostly because the information was easily accessible”. Almost half of respondents agreed that each time they used e-resources they saved time, thus demonstrating the value of e-resources use.

Tenopir and King (2007) conducted a study on perceptions of academic library value in the United States of America. They found that several studies examined academic libraries and their value to faculty and students. Both quantitative and qualitative data can demonstrate outcomes. They described both implicit measures of value based on usage statistics and time spent reading library-provided collections, and explicit measures such as direct statements from faculty of the importance of the library to their work.

In addition to measuring the value of e-resources, the library has new roles to play in e-science now and into the future. According to Tenopir and King (2007) “One example is the archiving and distribution of data that is collected by university scientists for their research.” These data are now difficult to access and are at risk

of loss". Major international initiatives funded by U.S. and U.K. national agencies are recognizing that librarians and scientists working together can provide new value in the area of data and improving the future of e-science. The future of the library's role in e-collections is one of an expanded vision of what libraries can add to the research endeavor (Tenopir & King, 2010:2).

As academic libraries develop from traditional institutions into virtual organizations, it is important that the value of their services is recognized (Frumkin & Reese, 2011: 1). Many university administrators want librarians to provide capacity to demonstrate the return on investment made in the library. In this process they must prioritize their services and products to focus on those that are the most useful in serving the university's mission in a changed environment (Tenopir & King, 2010:1). Assessing the value of e-resources includes calculating the cost-per-use. This data can be used to verify the cost of information, by performing calculations based on usage data and subscription cost. For example, knowing the subscription cost of e-resource and the number of downloaded full-text articles or number of searches conducted enables the librarian to calculate the cost per full-text article downloaded and per search. This information could be used to compare resources based on cost-per-use. Libraries therefore, have an important role to play in demonstrating library value, as the use of e-resources is particularly valued by both academic staff and postgraduates students

2. 4 Information skills of academics and students in use of e-resources

A study conducted by Majid and Abazova (1999) in Malaysia aimed to investigate the relationship between computing skills of academic staff and their use of e-resources. The study revealed that a majority of International Islamic University of Malaysia academics had been using computers, although about half of the respondents considered their computing skills as "fair" or "poor". The study also found that use of e-resources was influenced by the computing skills of academics, their age and gender. The majority of academics with "very good" and "excellent" computing skills had been frequently using e-resources. It was also observed that academics more than 50 years of age had been using e-resources less frequently.

Another study was conducted in Zimbabwe by Bhukuvhani, Chiparausha and Zuvalinyenga in 2012. The aim was to investigate thirty lecturers' use of e-resources in an effort to uncover correlations between library information literacy training and

increased use of web based resources; for example databases and electronic books and open access journals. Results indicated that lecturers attended the e-resources information skills training and they used one or more e-resources to find information for their teaching and research. Few lecturers indicated non-usage of e-resources. Most of the lecturers indicated that they learnt about e-resources through workshops and seminars. The results also showed that the use of e-resources by lecturers positively affected their work. However there was a need to mount more and frequent e-resources training workshops. As stated above, information retrieval skills have a major impact on the users' ability to use e-resources. The skills required to effectively find information in e-resources are very important, because without such skills, users of the library are not able to use e-resources effectively.

2.4.1 Information Literacy

For the purpose of this study, information literacy is to know where to look for information, how to search, and being able to evaluate the information. According to the American Library Association, information literacy is the "ability to recognize when information is needed and to have the ability to locate, evaluate and use effectively the needed information" (ACRL, 2000:1). Information literacy skills are helpful to everybody, especially in academics and students, in order for them to make personal, professional and academic choices in using information.

Information literacy also helps us in our day-to-day life such as buying a house, choosing a school, making an investment, voting for the election, and in many more activities requiring the use of information. Information literacy skills are of prime importance in order to achieve academic goals. There is a relationship between computer literacy and use of e- resources. Mostly in university libraries, users are computer literate; however, they need to develop their searching skills. Today's users have their information needs met via a number of options. The use of ICTs in academic libraries also focuses more strongly on the users, the infrastructure, and the skills that users should possess in order to benefit from access to unlimited information resources. They need not come physically to the library to use print formats, but can stay in the office or at home and access online library resources and services via networks from anywhere.

Users require search strategy skills in order to find relevant information that will help them to prepare for their projects, reports, seminar papers and other coursework. Some users find it difficult to search library catalogues. Training and advice in literature searching skills are important for all library users, although the focus of this study is on postgraduates, academics and researchers. Users are increasingly not relying on material available from the library only, but have to find relevant material available from a large pool of resources. This larger pool may include materials from other libraries in the country or even available internationally.

In order to utilize the growing range of e-resources, academics and postgraduate students have to acquire and practice the skills necessary to exploit them. As Dutton (1990) recommended the skills that are vital to increase the ability of e-resources are much greater than those required for searching printed sources. These skills include a searching strategy of the structure of databases and the instructions which must be used into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another (Ozoemelem, 2009: 3). Brophy (1993) stated that users do not often appreciate the skills required to search these sources, believing that they are easy to use.

The capacity to find and retrieve information effectively is a transferable skill useful for future life as well as for enabling the use of the e-resources whilst at university. As Brophy (1993) argued, libraries reach a position where the acquisition of information skills is acknowledged as one of the key learning objectives for every student entering a university, so that no student should leave without being able to cope with the information intensive world – the information society – as an end-user (Brophy, 1993:55).

The library plays a leading role in faculty-library relationships and in instructional services such as orientation and training in use of library resources. If efficient and effective use is to be made of library's electronic resources, then user training will have to increase in both intensity and coverage. It is important to remember that the ability of library staff to keep up to date is necessary, and, therefore, training for them is crucial as well. The ability to use electronic resources effectively depends on basic computer skills, knowledge of what is available, how to use e-resources, be able to define a research problem and to search effectively.

Computer literate faculty may feel more comfortable using electronic information resources (Renwick, 2005: 22). These skills and knowledge depend on many factors, such as disciplines, status and rank, age, access to e-resources and training. Factors that can motivate use can be; for example what level of importance they allocate to electronic resources, how useful they have found them and for which purposes they use e-resources.

Pantry (1997:14) noted that while a wealth of IT equipment is found in many organizations, what appeared to be lacking were information skills of staff that were expected to be able to control the systems and to search information effectively. It appeared that equipment was installed in many organizations, but very little training was given as part of the installation. Pantry (1997: 14) emphasized that individuals lacking these skills needed to be shown how to use the equipment effectively and to understand what they are doing; how to operate the systems that are available; where they could find information relevant to their job either internally or externally to the organization; to know at what point to ask for further help; and how information was indexed and where the authoritative and validated information could be found.

Tenopir (2003) found that students had more confidence in their searching skills than their teachers. Although lower division undergraduate students used the Web and Web search engines frequently, students were mostly unaware of the distinctions between material on the Web and peer-reviewed journals. Information literacy was very important, it was the skill which was relevant to the university community, therefore it was crucial for academics and students to be information literate in order to use information effectively, and to organize, evaluate, and apply information.

2.5 Electronic resources supporting teaching, learning and research

The academic library has a major role to play in support of learning and teaching policy, research strategy, digital scholarship, and e-learning. In this regard the library could be seen as an integral partner in formulation of policies that directly affect learning, teaching, and research. The demand for electronic services in libraries is challenged by the presence of similar electronic services elsewhere. In the electronic environment, a library researcher may browse for information in whatever e-resources they choose. The 24/7 availability of the Web provides users with the opportunity to conduct library searching at any time. This has resulted in library users

expecting 24/7 access to not only the library electronic collections, but also to online help or other forms of library mediation when needed.

Moyo (2004:221) conducted a study of typical user expectations in the electronic library environment. Users were asked what they expected from their academic libraries and their responses were that they wanted everything in full-text and downloadable or printable; faster service; 24/7 service availability; easy access; virtual reference service assistance available online 24/7; easy-to-use Web resources permitting self-service; a librarian who knows all subjects and all databases; everything should be in electronic format; several options or alternatives to choose from; a Web site that works; ability to conduct all library transactions online (for example, library registration, request document delivery and interlibrary loan, renew library items); and a Web site search engine where they could find what they wanted. Users learn about using library's information resources in variety of ways, they use different tools to find information and were mostly helped by library staff.

2.6 Awareness of electronic resources

Rehman and Ramzy (2004) investigated the awareness of e-resources among health academics in Kuwait University. Their assumption was that low awareness and poor skills were among the primary reasons for the under-utilization of e-resources. A questionnaire-based survey was conducted. The focus was to find out the nature and extent of use and the reasons for low use of these resources. Respondents reported that time constraints, lack of awareness, and low skills levels were among the primary constraints they experienced. A number of them proposed a variety of measures including formal orientation and training to become more effective users.

Another study was conducted by Tyagi (2011) at IIT Roorkee, India. The study was conducted using questionnaire-based survey methods along with observations and informal interviews. The results of the study provided information on the level of awareness and use of electronic journals. The study found that users had knowledge about the availability of electronic journals, but many used e-resources as an additional ways to use information. This study found that most users were aware of

the availability of online journals through the library, and they could use them for various purposes.

Kaur and Verma (2009) conducted a study in the academic year 2006-7 at Thapar University, Patiala. The research focused on use of electronic information resources. Five hundred and four users from undergraduates, postgraduates, research scholars and faculty members responded. Findings show that users from all these categories were using e-resources. The awareness about e-resources encouraged users to use such resources as much as possible. The impact of e-resources was visible from the decrease in number of printed journals in comparison to the increase in number of e-journals.

Renwick (2005) investigated knowledge and use of electronic information resources by the Medical Sciences Faculty at the University of the West Indies. It was found that the faculty had high awareness of the e-resources that were made available, but low use of specific resources, supporting the suggested problem of under-utilization. Many respondents were of the opinion that e-resources were important, although many still expressed a need for training. Over 60% felt that a workshop with a hands-on component was the preferred format for training. It was recommended that there should be greater promotion of the library's e-resources.

Another study conducted by Ahmad and Panda (2013: 8) was carried out to find whether the faculty members of universities were aware of and fully utilize the library databases and other e-resources within and outside the libraries. Results revealed that majority of the faculty members were aware of and used e-resources. The study confirmed some lack of knowledge and use of library specific resources such as e-theses, patents and CD-ROM databases. It was also found that all faculty members agreed that e-resources were very useful and important to their work.

Many studies have shown an inverse relationship between electronic journal usage and age, more recently the results of Zhang, Ye and Liu (2011:70) indicated that by now, users of all ages have switched to the electronic format not only in terms of usage but also by preference. According to Deng (2010: 87) the awareness and the quality of the available e-resources were the two important factors for the effective and efficient use of e-resources.

2.7. Information seeking behaviour theory

The Information Search Process (ISP) model was used as theoretical framework by Kuhlthau, based on years of research in the information seeking behaviour of school and university users (Kuhlthau, 1991: 368). This model is the most frequently cited in information science research (Pettigrew & Mckechnie, 2001:69). The ISP model has its roots in the earlier information seeking models of Kelly (1963), Taylor (1968) and Belkin (1980). Kelly's Personal Construct theory focuses on understanding how people develop in their personal life. It was argued by Kelly that all people are scientists (Kelly, 1963:47) looking for answers which may help them to predict and control circumstances that were influencing their everyday life. According to Adams (2009: 5) the user entered the library uncertain of where of where to find information on a specific topic and what tools to use to search for information. When a user approached a librarian, a reference interview started to form in which case the librarian would ask the user certain questions regarding the information the user needed.

Kuhlthau's (ISP) model was beneficial to those working in the information studies field since it drew attention to information users and how they looked for information, what they did with it and how they felt when searching for this information. This model also relied on cognitive learning theory as it saw information seeking as a constructive sense-making process that began with uncertainty and anxiety. It described what was going on in a searcher's mind from the beginning of search to where he or she built meaning and new knowledge from information they found. Therefore; Kuhlthau argued that the ISP model became actively involved with a researcher during his or her information seeking process.

2.7.1 Physical barriers to the use of electronic resources

Ingutia-Oyieke and Dick, (2010: 69) conducted a study in the private University of Eastern Africa, Baraton (UEAB). The physical barriers they identified, were mainly related to ICT infrastructure and the use of e-resource. An ICT infrastructure evolved and became more complex as the teaching and learning experience evolved. When implementing effective ICT infrastructure, decision makers should consider ICT progression and ensure that it will support the learning experience of the students, hence improving learning outcomes. Problems relating to ICT infrastructures in Africa; included frequent power outages on campus. This problem was not the fault

of the university, but had serious repercussions for the LAN, often causing it to break down. Instances of power outages resulting in damage to computers in the library had been reported and frequent periods of equipment downtime as a result of the power outages

2.7.2 Personal barriers to the use of electronic resources

Personal barriers to the use of electronic resources are related to the lack of technical skills, information retrieval skills, knowledge of existing resources and services and students' awareness of new e-resources in their academic libraries. Another personal barrier that was observed was age. The use of e-resources was examined by Madhusudhan, (2008); Mulla and Chandrashekhara, (2006) in specific academic communities in which the majority of respondents supported the transition from print to electronic only. These surveys reported that the major barrier to the use of electronic journals was the lack of subscriptions in their field of studies and a lack of user orientation or training.

Three studies, Dilek-Kayaoglu, (2008); Madhusudhan, (2008); Mulla and Chandrashekhara, (2006) found that the major problems in the use e-resources was a lack of subscriptions in particular fields of study; lack of user orientation or training; low bandwidth; a lack of printing facilities, terminals and trained staff. The study conducted by Shukla and Mishra (2011) found that the majority of research scholars treated the problem of low internet connectivity as the major infrastructural problem in accessing e-resources.

The study conducted by Madhusudhan (2010) in India, showed that for the majority of respondents, the most common problem was that of slow access speed. Respondents stated that it took too long to view or download pages and found it difficult to get relevant information. Some respondents were of the opinion that too much information was retrieved and that they could not make use of e-resources effectively due to the lack of proper IT knowledge. Another study conducted by Mulla (2011) in India revealed that the majority of academics faced a problem of lack of timing or that lack of training was the main problem while using e-resources. Others were troubled by hardware and software problems respectively.

Bhatt and Rana (2011) identified that the most common problems with e-resources were low speed connectivity, lack of awareness about statutory provision for accessing e-resources by the institutions, technical problems (software/hardware), unavailability of sufficient e-resources, doubts in permanency, high purchase price, lack of legal provision. Dhanavandan, Esmail and Nagarajan (2012) pointed out that although a majority of users were satisfied with e-resources available in the library, they encountered problems of downloading and that lack of knowledge was the major problems.

Bashorun, Tunji and Adisa (2011) showed that the use of e-resources by academic staff in the Unilorin, was not at the expected level that would effectively enhance the learning and research process as stated in the mission statement of the university. Low usage was reported for e-books, bibliographic databases and e-journals. These attitudes might be the result of lack of awareness about the e-resources provided by the library. Furthermore, the results of this survey clearly established that academics in the Unilorn seem to be equipped with fairly good computer skills that enabled them to search and utilize e-resources.

Ozoemelem (2009) conducted a study in Nigeria, where it was observed that there is a general endorsement by respondents of issues like a large mass of irrelevant information; therefore the need to filter the results from search were some of the basic problems encountered while using e-resources. Other problems were download delay, failure to find information, lack of search skills, high cost of access, power outages, unavailability of some websites, inaccessibility of some websites and difficulties in navigating through e-resources.

2.8 Conclusion

With regard to the use and value to e-resources, the literature review has clearly shown that academics, researchers and postgraduates are increasingly using various e-resources to meet their academic and personal information needs. The studies indicated that the extent of e-resources usage among academics and researchers and postgraduates were increasingly becoming important and popular sources of information worldwide. The literature further shown that academics, researchers and postgraduates used e-resources for a variety of purposes including: research and professional growth

The literature had shown high awareness of the e-resources that were made available by university libraries, but low usage of specific resources, supporting the suggested problem of under-utilization. Many respondents were of the opinion that e-resources were important, although many still expressed the need for training, with hands on practice. Other studies have recommended increased promotion of the library's e-resources to the faculties.

CHAPTER 3

RESEARCH DESIGN METHODOLOGY

3.1 Introduction

This chapter describes the research methodology and techniques that were used in the study. The survey research method was used in order to gather both quantitative and qualitative data. This chapter outlines different ways in which such surveys can be conducted. It also outlines the methods used in the selection of the survey population.

3.2 Research Design

This study sought to investigate the use and value of library's e-resources through the following research questions:

- Do engineering academics and postgraduate students use e-resources?
- For what purposes do academics, researchers and postgraduates use electronic resources?
- What is the value of using e-resources in the process of teaching, learning and research?
- What problems do academics, researchers and postgraduates encounter when using e-resources?

Based on responses received from a questionnaire which was distributed to two departments of Engineering, the researcher was able to find answers. This chapter explains the research design and methodology and also the reasons why the methodology was considered appropriate for gathering the data required to answer the research questions.

Leedy and Ormrod (2001: 91) defined research design as the strategy to approach a central research problem. The design provided the overall structure for the procedures that the researcher followed, the data the researcher collected and the analyses the researcher conducted.

The overall method of this study consisted of a quantitative survey, although it also had qualitative aspects as noted above. The quantitative research involved the distribution of questionnaires to academics and postgraduates to gain information about aspects of their use and value of library's e-resources. Punch (2005: 3) defined quantitative research as empirical research where the data is in the form of numbers and numerical data is used. Qualitative research is the method that investigates the *why* and *how* of decision making, not just what, where, when (Creswell, 2003: 52). During the course of the questionnaire, open-ended questions were used to allow the respondents to promote additional comments on issues, thus providing a qualitative element to the study.

The survey was conducted through a structured questionnaire. The questionnaire was pilot tested by administering it to ten academics and ten postgraduate students in the Built Environment department in Faculty of Engineering at CPUT who were not part of the study. The results verified that the respondents found most of the questions clear and after a few amendments the questionnaire was ready for distribution.

The Faculty of Engineering was selected because it has largest e-resources' budget at CPUT. In addition, the databases used by this Faculty, such as IEEE Explorer and Digital Library are very expensive.

3.3 Population

Cresswell (1994: 119) provided a full description of procedures to define a population. In this study, the total population of academics and postgraduates from two departments in the Faculty of Engineering (Electrical and Mechanical engineering, both based in Bellville) consisted of 251 potential respondents. As this population was small enough, it was decided to address the survey instrument to the whole population. This population consisted of permanent and temporary contract academics together with full time and part time registered students. For this study, the questionnaire was distributed to the entire population of 82 academics, 135 MTech and 34 DTech students.

The table below represents the breakdown of the population and the responses received in the study.

Table 2: Study Population

Electrical & Mechanical Eng.	No. of Academics & Postgraduates.	No. of Respondents	Percentage of Respondents
Academics	82	26	32%
MTechs	135	31	23%
Dtechs	34	3	9%
GRAND TOTAL	251	60	24%

A total number of 60 responses was received which is 24% of the total population.

3.4 Questionnaire design

The questionnaire is provided in Appendix 3 and it was drawn up after exploring the literature on the use and value of e-resources. The questionnaire was pre-tested in one department in the Faculty of Engineering as noted in above and also on seven faculty librarians. Some amendments were made as a result of the pilot.

The questionnaire was based on a similar one used by Soyizwapi in 2005 in Pietermaritzburg. Her purpose had been to investigate the use of electronic databases by postgraduate students in the Faculty of Science and Agriculture at the University of Kwa-Zulu Natal. Her study showed that from a list of 29 databases available for use, there were three categories of usage. The first category was those databases that were used often, for example the OPAC, Science Direct and EbscoHost. The next category was of those databases that were seldom used such as Sabinet Online, ISI Citation Indexes, Life Sciences, Web of Knowledge and Ecology Abstracts. The last category was of databases that were never used such as Water Resources Worldwide, which caters for Science and Agriculture disciplines. She found that postgraduates generally use electronic databases, but a few of the databases were not used. A number of problems were encountered by her respondents when using the databases. Postgraduates gradually became aware of

availability of electronic databases from variety of sources such as friends, library orientation programmes and academic staff. Search engines were identified as resources that were very popular with most postgraduates. She also found that there was a need for training in the use of databases and improving access for all on-campus and off-campus users. The only difference in the present questionnaire was the addition of questions on the use and value of e-resources. It is recognized that Soyizwapi's survey was conducted in 2004 and the situation could be have changed since then, but change has always been common in academic libraries and the present study was intended to explore those changes.

The developments experienced by academic librarians over the past decade remain exceptional. Many academic libraries shifted from a primarily physical to a substantially virtual library environment. For example, in these days academic libraries are spending a lot of money buying e-books, e-journals and databases. At the time Soyizwapi conducted her study, users of the library were less familiar with full-text electronic materials, which could be the reason why her study was focused on databases only. Soyizwapi's study focused on postgraduate students in the Faculty of Science and Agriculture in Kwa-Zulu Natal, while this study focused on academics and postgraduate students in the Faculty of Engineering at CPUT and looked at the use of actual e-resources rather than databases.

The questionnaire consisted of four sections with 22 questions. Section A of the questionnaire gathered data on the participant's personal information. It sought information about age, gender, qualification(s) and status in order to know more about the participants. Section B was concerned with the use of e-resources, which referred to all items available in an electronic format, either via library subscription databases, individual journal titles or the e-book collection. The respondents were asked to indicate how 'often' they use e-resources; if they responded 'never', they were asked to provide reasons for not using them. They were asked how they accessed these e-resources and whether they have attended any training sessions related to the use of e-resources. Section C asked questions about the perceived value of e-resources. The respondents were asked to indicate their use of e-resources as part of their study or work, whether e-resources were integrated into their teaching, learning or research, how useful they rated e-

resources in helping them to accomplish their tasks and in which situations they most valued e-resources. Section D included likert scale statements which explored respondents' experience of the usability of e-resources (See Appendix 3).

3.5 Advantages and disadvantages of questionnaires

According to Maree & Pietersen (2007a: 156) there were advantages and disadvantages to questionnaires. The advantages are that the respondents can answer the questions in a short space of time; the administrator can check for accuracy; they are cheaper and easier to administer than interviews. A survey is particularly useful in describing the characteristics of a large population. Surveys are flexible and many questions may be asked about a given topic. The advantage of emailing a survey to academics and postgraduates is that it is an efficient way of collecting data from a large population (Cresswell, 2009: 145). A disadvantage is that there might be a low response rate (Powell, 1997: 91); and that it is not possible to probe issues in detail.

The choice to use a questionnaire for this study was influenced by other studies such as those of Ozoemelem, (2009), Shuling, (2007), Swain and Panda (2009) Rehman and Ramzy (2004) and Tenopir (2003) and Soyizwapi (2005). Soyizwapi (2005) also confirmed that questionnaires are a quick and efficient way to obtain information, are less costly than interviews and they provide confidentiality. Self-administered questionnaires may be sent by post or electronic mail or by using software such as Survey Monkey. According to Leedy and Ormrod (2001: 197) questionnaires that are sent via electronic mail have drawbacks because of the risk that respondents may not believe that their responses have been kept confidential.

3.6 Data gathering methodology

Before conducting the study, permission was obtained from the CPUT Library Management and the Dean of the Faculty of Engineering. The CPUT Research Committee required that the researcher would treat responses confidentially, that she would consider ethical issues that were likely to arise and that the participants were protected from harm (Piper & Simons, 2005: 57). Attached to the questionnaire

was a covering letter stating the aims and objectives of the study (see Appendix 3). Participants participated voluntarily and they were free to withdraw at any stage of the research process. They were informed when and how the study would be conducted.

A questionnaire based on one designed by Soyizwapi (2005) was used as explained above in 3.4. It was regarded as an efficient way of collecting data from the two departments in the Faculty of Engineering. The questionnaire for this study focused on the use and value of e-resources by academics and postgraduates, while Soyizwapi's questionnaire focused on the use of databases by postgraduate students only. Questionnaires can be sent to a large number of people including those that live geographically far away (Mfazo, 2009: 30).

The investigation was conducted in CPUT on the 14 May 2012, involving the academics and postgraduate students during the second term of the year. It was a very busy period; academics were preparing examination papers and writing reports for the Engineering Council of South Africa. This study included permanent and contract staff and both full-time and part-time postgraduates. Printed questionnaires were distributed personally to the respondents which were available in their offices at the time of distribution and questionnaires were sent via e-mail to those who were not.

The researcher requested the service of a research assistant to administer questionnaires one-on-one to academics and postgraduates, and collected their responses immediately. As only 36 responses were received back from the printed questionnaires, it was decided to send the questionnaire by email to those who were not in their offices at the time when the assistant researcher distributed questionnaires.

A total number of 24 emailed questionnaires were returned. A total of sixty questionnaires were therefore received, thus yielding a response rate of 24%. It is acknowledged that the number of responses is small, but as the instrument was sent to the whole population, i.e. all academic staff and postgraduate students in both departments from the Faculty of Engineering as indicated in Table 1, it is regarded as adequate and responses from nearly a quarter of the population may be

regarded as representative. It was noted in chapter one that participation in this study was voluntary; participants could withdraw at any stage of research.

3.7 Data analysis and presentation

Chapter 3 discussed the research design for this study. The purpose of the data gathering methodologies described in this chapter was to throw light on the research problem and questions. The data were gathered by means of these methods, summarized and analyzed in the following chapter.

University of Cape Town

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

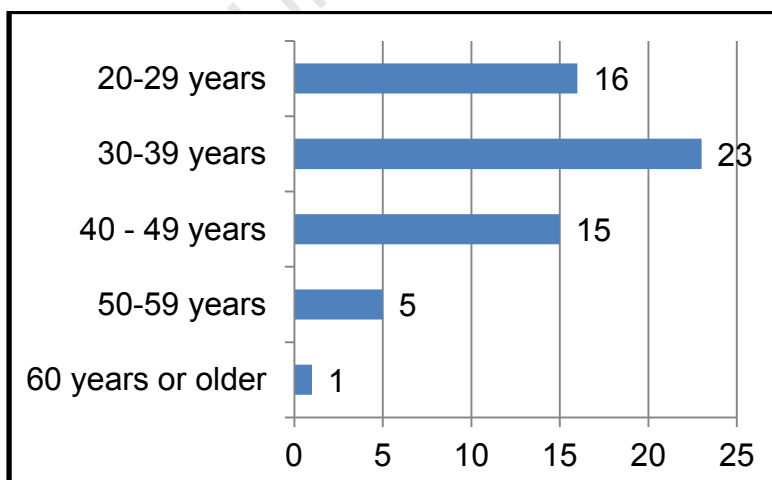
This chapter presents and analyses the data that were gathered by means of a questionnaire survey of the academics and postgraduates in the Faculty of Engineering. Two hundred and fifty one questionnaires were distributed and 60 were returned, yielding a response rate of 24%. The collected data were analyzed, classified and tabulated by employing statistical methods. The presentation of the data follows the order of questions in the questionnaire that is attached in Appendix 3.

The qualitative data gathered in the open-ended questions were analyzed using standard qualitative techniques as described by Terre Blanche, Durrheim, and Painter (2006: 323). The responses were transcribed and coded into themes or units of meaning in order to enrich the quantitative data.

4.2 Analysis and summary of results

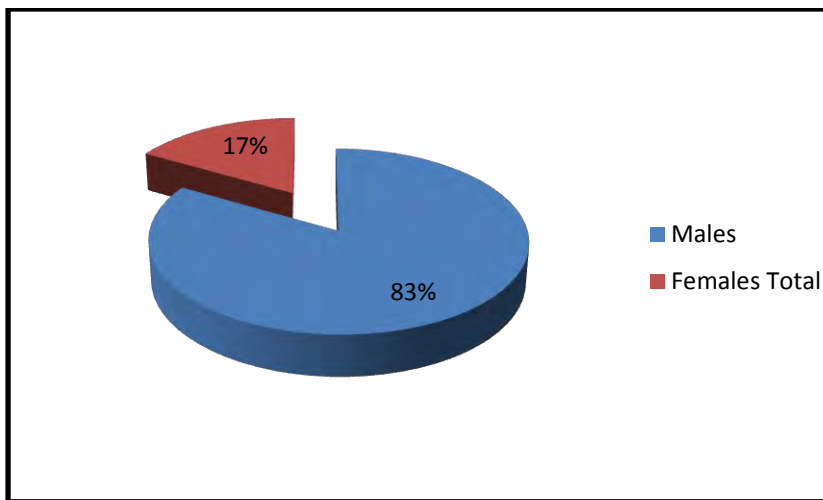
This section presents the responses to the questions based in the study. The responses to the open-ended questions were transcribed, analyzed into themes and tabulated, following qualitative data analysis techniques (Terre Blanche, Durrheim & Painter, 2006: 323).

Figure 1: Age of respondents



The first part of the questionnaire focused on the age. This question was included, as the literature survey showed that the age of respondents sometimes influenced e-resources use Figure 1 shows the breakdown of age in the faculty. The overall age range of survey respondents is from 20-60 years. As one can see from Figure 1, Engineering academics and postgraduates that responded to the survey were predominantly between 20-49 years old.

Figure 2: Gender of respondents



Question 2 was asked to provide a better understanding of the population of the study. Figure 2 shows that from 60 respondents who participated in this study, the majority were males. Of the respondents, 50 (83%) were males and 10 (17%) were females. In terms of gender profile of the population in the Faculty of Engineering as a whole, a total of 947(77.6%) was males and 273 (22.3%) were females. The survey sample therefore comprised a roughly similar proportion of males to females' in the two departments in the Faculty of Engineering and confirms the representatively of the sample.

Figure 3: Qualifications of respondents

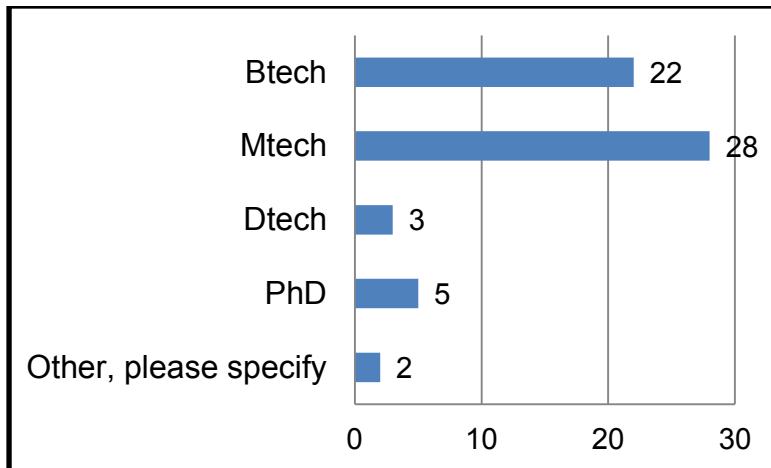


Figure 3 illustrates the distribution of responses according to the qualifications respondents obtained previously. Of the 60 respondents, 22 (36.7%) were qualified BTech students who were registered for a MTech, while 28 (46.7%) MTech were students and lecturers. Most of the respondents in this study are studying further. From responses to the questionnaires, it became clear that the majority of respondents were lecturers that are also studying further.

Figure 4: Status of respondents

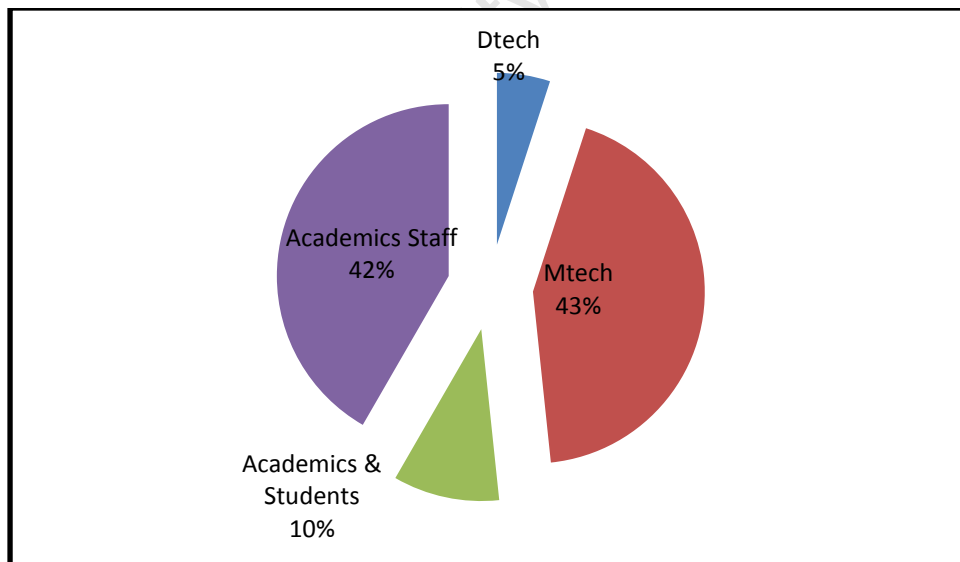
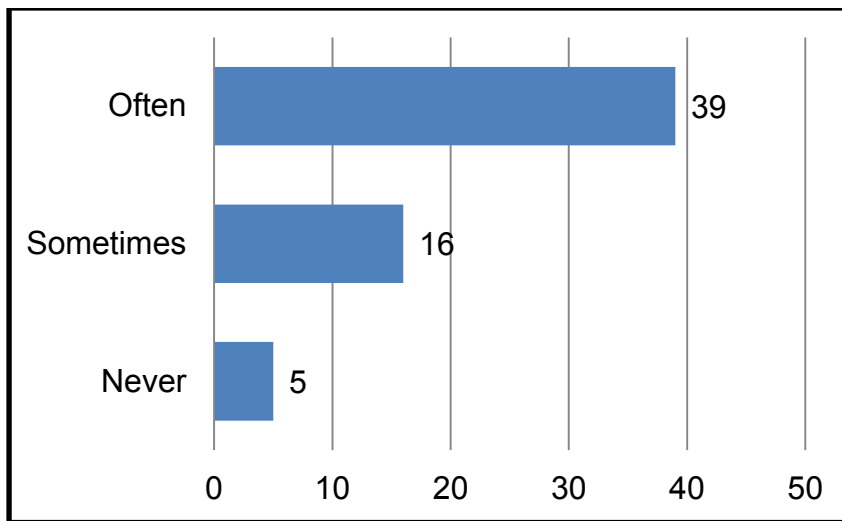


Figure 4 shows the distribution of responses according to academic status. All 60 respondents were permanent and contract staff, or full-time and part-time postgraduates.

Figure 5: Use of e-resources

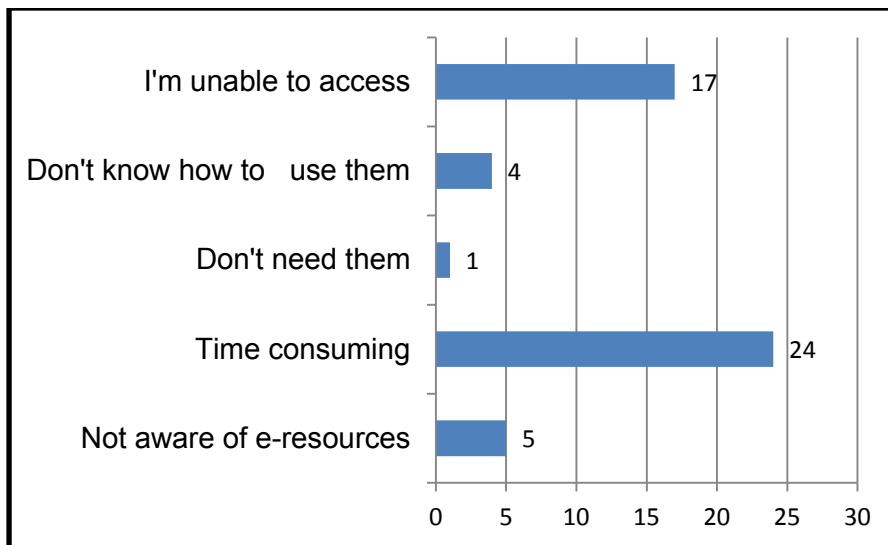


Replies to Question 5 (Appendix 3) of the survey are shown in figure 5. The question asked was: “Do you use e-resources in the library?” The data revealed that academics and postgraduates are the regular users of e-resources. The findings of this study showed that the respondents frequently used e-resources that are available at CPUT Libraries. This is shown by the majority of 39 (65%) who use them ‘often’, 16 (26.6%) respondents who use them ‘sometimes’ and with only 5 (8.3%) who indicated that they have never used the e-resources.

The use of electronic resources is becoming very important as they are more up-to-date and can be accessed anywhere across all geographical boundaries as was discussed in chapter 2 of this study. E-resources are showing significant growth as part of library collections, thus adding potential value to the resources of the library. Though a large budget is required for the building of the collection, e-resources are valued by the users. But without conducting a study, there is no way of knowing whether the users accept them or whether they find the e-resources easy to use, reliable and useful, or whether e-resources are used effectively.

This question about use attempted to establish how frequently academics and postgraduates in the Faculty of Engineering made use of e-resources to gather information for their needs. Responses to the question are depicted above in figure 5. It was shown that most respondents frequently used the e-resources that are available at CPUT Libraries.

Figure 6: Non-use of e-resources



It is interesting to observe the reasons for not using e-resources; 27 respondents responded to this question and 33 respondents did not. Some respondents ticked more than one box. Figure 6 shows that 24 respondents who have not used e-resources said that they were too time consuming; while 17 were unable to access e-resources. Another five respondents were not aware of the existence of e-resources, while four were not sure how to use e-resources, and one did not need to use them.

The main reasons cited by those not using e-resources seem to result from a lack of skills and lack of connectivity, as both inability to access resources and finding them time consuming to use could be a result from a lack of skill or inadequate bandwidth.

A few added comments on their difficulties with accessing e-resources, such as:

“One of the most problems that discourage me from using e-resources is the passwords that are not always available”.

“No relevant information in time then you has to wait for order or purchase of documents (journal) in this regard”.

(This means that when the user tried to access articles from databases, some articles requested the user to purchase the article because there was no full-text

available from the CPUT Libraries, as they did not subscribe to that article, and would need to request the articles via Inter-Library Loan (ILL).

“Login does take a while and sometimes I don’t have that spare minute, it is not library thing but is IT problem; I have no problems with the library services both as a lecturer and as a doctoral student. Only when the internet connection strength is very weak”.

The extent of use of e-resources at CPUT Libraries seems to reflect findings by Shukla and Mishra (2011); and Kaur and Verma (2009) who indicated that e-resources were heavily used which is an indication of users being fully aware of them. Problems with technology and bandwidth were noted by Smith (2007) and Ozoemelem (2009) in chapter 2.

Figure 7: Places where e-resources are accessed

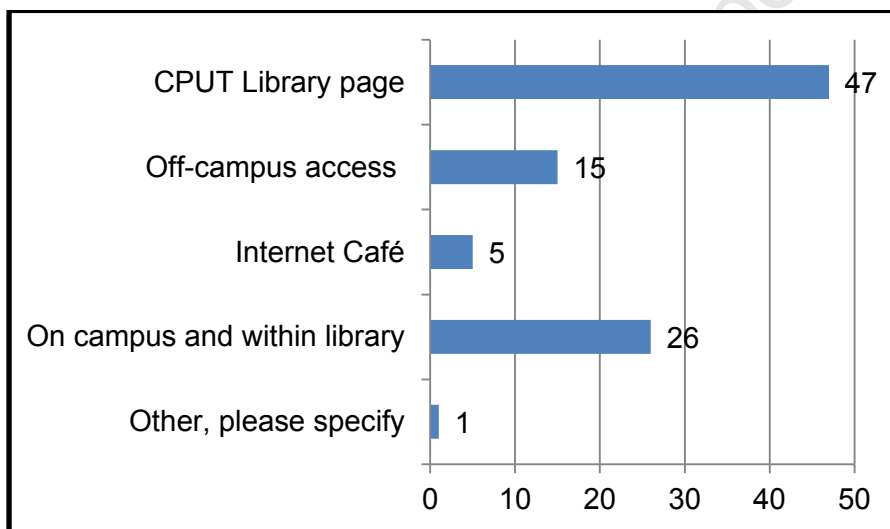
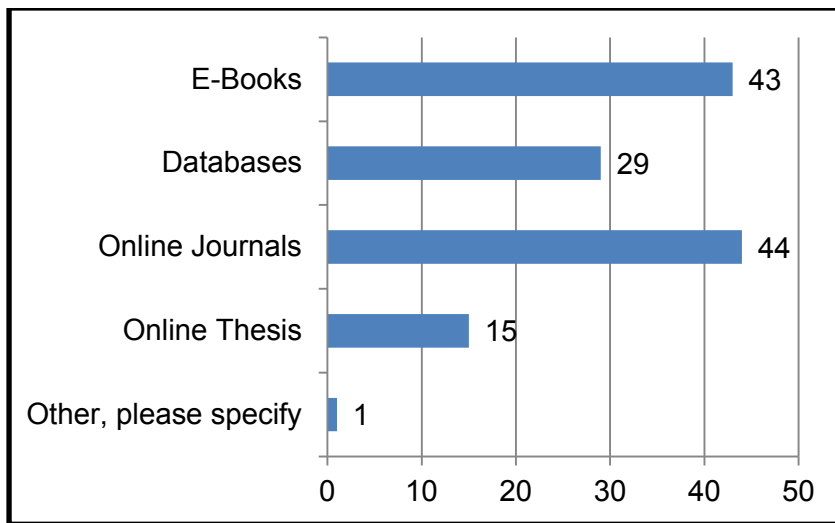


Figure 7 show that some respondents used more than one place to access e-resources. The majority of respondents, 47 (78.3%) access e-resources from the CPUT Library page, followed by on campus within the library for 26 (43.3%) followed by 15 (30%) respondents that can access e-resources from off-campus. It seems that the most participants prefer to access e-resources from the CPUT Library page and on campus as the relevant facilities and tools are readily available. Students who are in residence can also access library resources any time they need.

Figure 8: Which e- resources are used?



In this question participants were able to respond by checking more than one statement. The survey findings show that the most frequently used e-resources are the online journals and e-books followed by databases and online theses. The figure above presents an overview of the categories of e-resources used. One respondent who did not use e-resources, explained as follows:

“I’m not against on the use of e-resources, but have never been shown to my satisfaction how they can make difference in my teaching”.

This suggests that there are opportunities for the librarian to give training to some of the respondents who do not know how e-resources can make a difference to their work.

Figure 9: Frequency of e-resources access

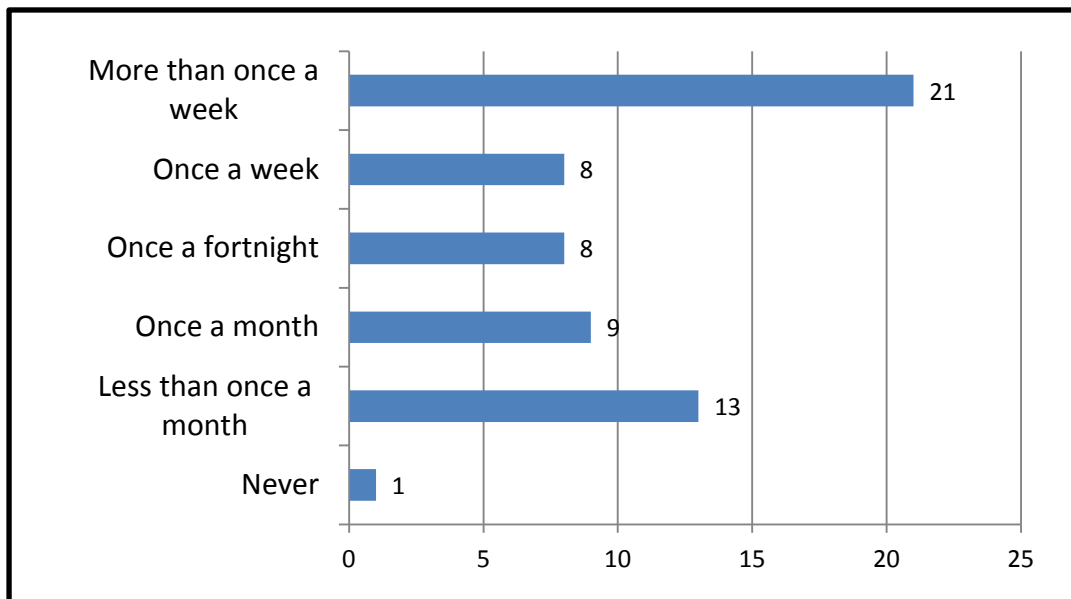


Figure 9 shows the reported frequency of using e-resources. The frequency of using e-resources is an important indicator of how e-resources are utilized (Liu, 2006). According to Deng (2010:92) access to e-resources is of great interest to a library. A good understanding of where electronic resources are accessed can help the library develop proper strategies and policies for the establishment and development of technology infrastructure for storing and distributing e-resources in an effective manner. The respondents who do access e-resources in CPUT Libraries were asked to state how often they access these resources. The survey shows that e-resources were used frequently.

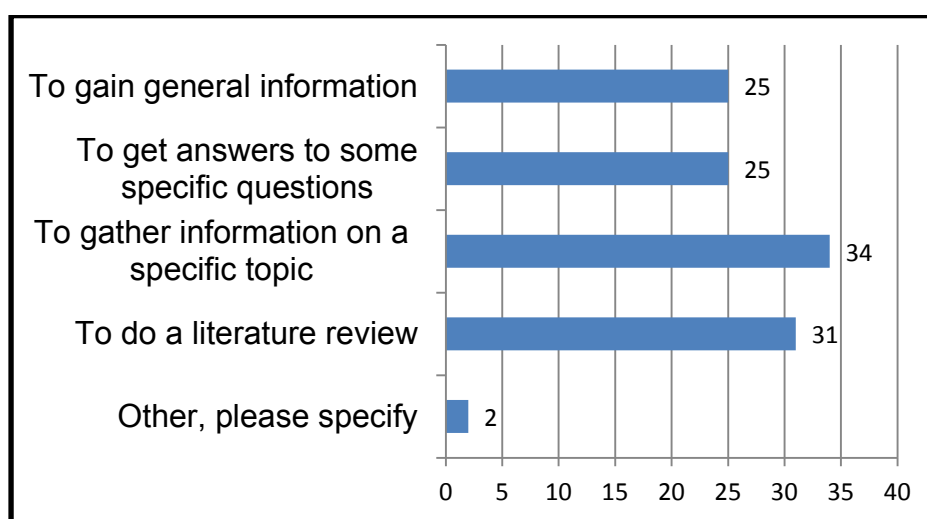
Quite encouraging was the number of the respondents, 21 (35%), who used electronic resources more than once a week. Thirteen respondents access electronic resources less than once a month. The single respondent who ticked “never” responded as follows:

“I never used any electronic resources in the library, nor for that matter, even obtained any directly from internet. You might think that this is unbelievable in this age, but there is simply: a) not enough cause to look for any new material, as my syllabus is well-established and the content do not need updating, and b) Not enough time to look, even casually, for new developments, as I have too many students to cope with. I have 200 students, and I have to do a large

number of assessment activities and develop new learning experiences for them, including designing and introducing new lab equipment and taking charge of design and build project in which my students have to build something that can be tested”.

This statement shows that the respondent was not aware of the potential for using e-resources, and needs training.

Figure 10: Reasons to use e-resources



The reasons why the respondents used the library's e-resources (Question 10, Appendix 3) are presented in figure 10 above.

E-resources are used for different purposes. Academics and postgraduates were asked about their reasons for using e-resources. Although there were different reasons, the main reasons and the responses of the respondents are given in figure 10. It indicated that of all the purposes for using e-resources, gathering information on a specific topic, doing a literature review, obtaining answers to specific questions and gaining general information were the most common reasons for accessing e-resources in this study. Of the 2 (3.3%) who noted "other", one accessed e-resources just to see new books in Law, while the other accessed e-resources to update knowledge of the research in the latest technology.

It is interesting to observe that the respondents use e-resources for different aspects of their work as had also been indicated by (Rehman & Ramzy, 2004: 153) who stated that the purpose of using e-resources is multi-dimensional. To display this

effectively, the survey questionnaire allowed respondents to select multiple responses regarding their purposes for accessing e-resources. The number of responses to the purpose of using e-resources is represented in Figure 10.

Figure 11: Choice of e-resources

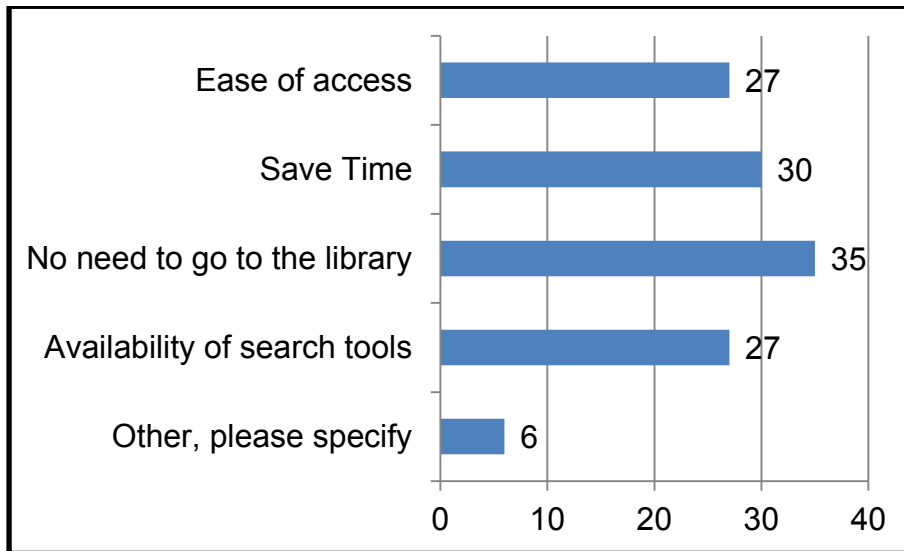


Figure 11 shows the reasons why the majority of respondents use e-resources. In order to understand how users perceive the relative importance of the benefits of using e-resources, five reasons were derived from the comprehensive review of related literature and listed in the survey: ease of access, saving time, availability of search tools and no need to go to the library. As users might access e-resources for multiple tasks, respondents were allowed to select multiple responses. The above figure shows the frequency and percentage of respondents accessing e-resources for each reason.

A total of 27 (45%) respondents chose e-resources on account of ease of access, 30 (50%) thought that they save time, whereas most 35 (58%) valued the fact that there is no need to go to the library because they can access e-resources at home or from their offices. Of all reasons for using e-resources, no need to go to the library was the most popular. This concurs with Ray and Day (1998) in Egberongbe (2011:8) who found that using e-resources saved respondents' time and they are relatively easy to use.

Table 3: Q.12 Training in use of e-resources

Yes	41
No	15
No, but would like to attend one	4
TOTAL	60

Table 3 summarized the answers to question 12, which asked if respondents attended any training course in using e-resources. The fact that 41 (68.3%) respondents say “yes” is a positive reflection on the training in the use and value of e-resources in the faculty of engineering at CPUT. These respondents claim to have taken training regarding use of e-resources, while 15 (25%) respondents did not receive training and 4 (6.7%) respondents would like to attend the training in future. This confirms that there is still some need for training at CPUT.

Two respondents suggested that training and marketing of e-resources should run throughout the year. They thought it would be useful to start from first years to higher level training.

“Workshops on the use of e-resources tools may be held throughout the year to help all students understand how to properly use e-resources and the importance of using them from the beginning of their studies”. “I would like to suggest that it should be part of the curriculum activities for all the postgraduates programs being offered at CPUT”.

One respondent commented that because of the training that the library offered, he can now access e-resources.

“I had difficulties in the beginning, but I am more familiar with how to use them now”.

4.3. Value of e-resources,

Table 4: Q.13: Use of e-resources in work / study

Yes	48
No	9
No, but would like them to be	3
TOTAL	60

The majority of respondents indicated that they used the library's e-resources for their work or studies. The data presented in the above table showed that a total of 48 (78.3%) of the respondents have used e-resources as part of their work and study, thus indicating that e-resources are important to the study, work, teaching and research in this university environment. Nine 9 (15%) respondents have not used the e-resources, while 3 (5%) would like e-resources to be part of their study or work and still need training. To support the above findings some added comments, for example:

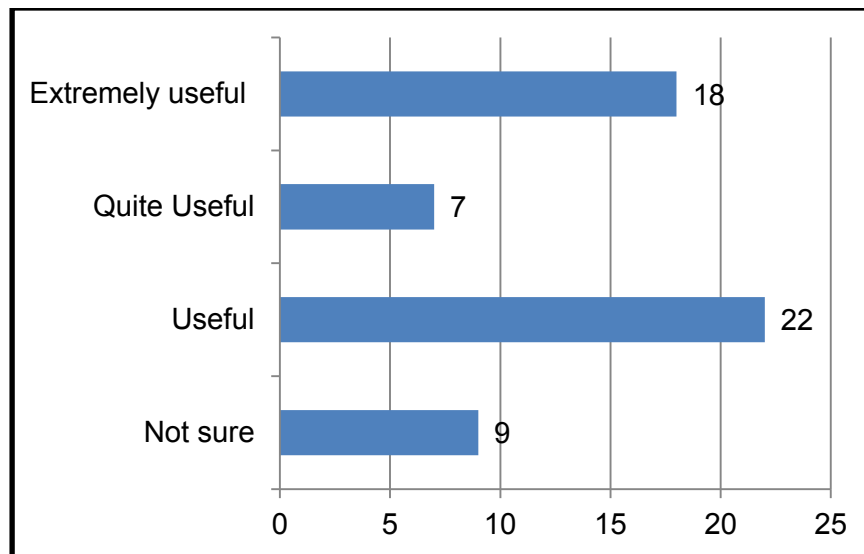
“Definitely, being introduced to the e-books and databases by librarians saved me a lot of time and effort when doing my research. I predominantly make use of Science Direct, Engineering Village Emerald and IEEE”.

Table 5: Q. 14 Integration of e-resources in teaching, learning and research

Yes	46
No	11
No, but attempted to	3
TOTAL	60

E-resources have effectively become an integrated part of the work and study behavior of the respondents. This data shows that the total number of 46 (76.6%) of respondents have integrated e-resources into their work and study.

Figure 12: Q15 Rating of e-resources



The researcher was interested in how academics and postgraduates would rate e-resources in terms of usefulness. The above figure shows that the majority of academics and postgraduate students regarded e-resources as useful and extremely useful.

One respondent added a comment supporting the above figure:

E-resources help in finding quickly relevant information [sic] and it is very beneficial, information is available anytime of the day and you do not have to wait for the library opening hours”.

A cross-tabulation with information from figure 1 relating to the age of the respondents showed that participants from 59-60 years older responded to the question in free-text added comments such as:

“For the record, I m not against to the use of electronic resources, but have never been shown to my satisfaction how they can actually make difference in my teaching.

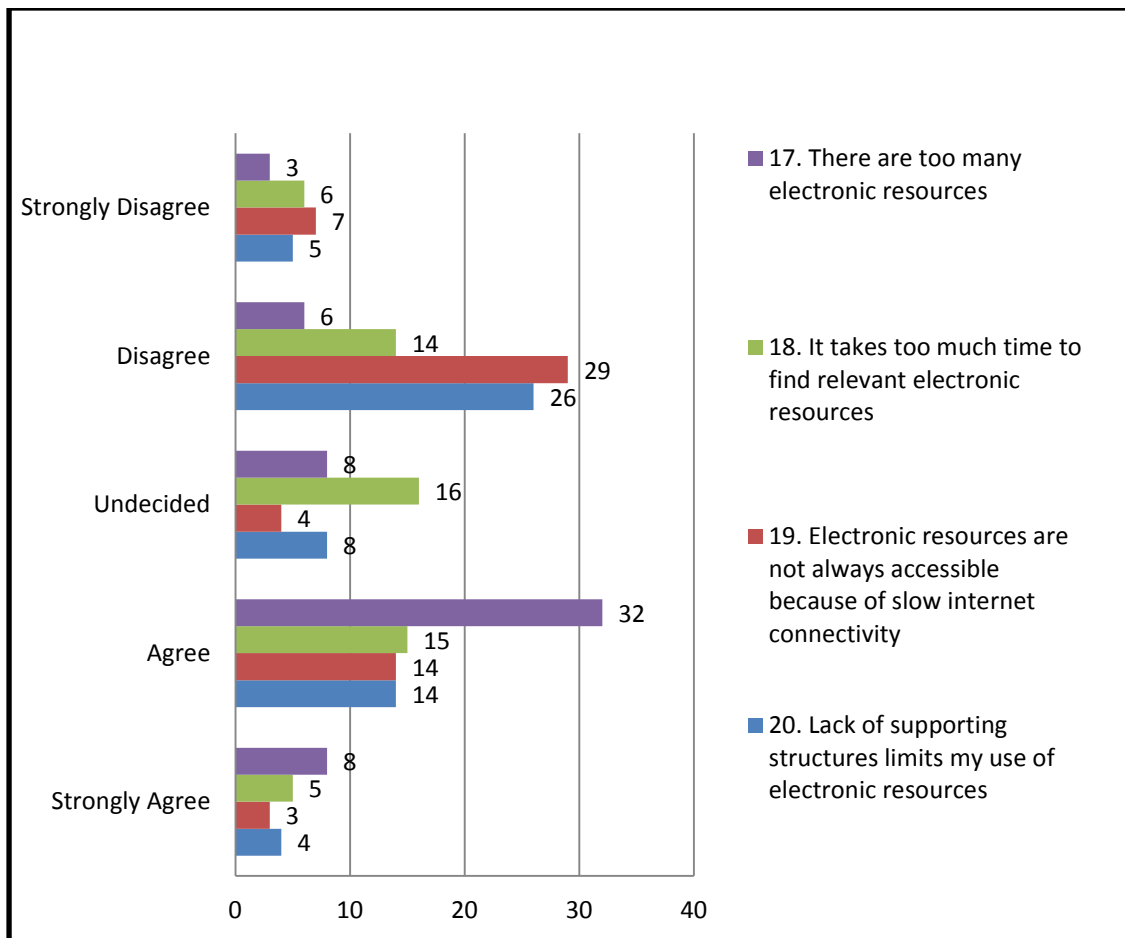
This suggests that older users also need training in the use of e-resources.

Table 6: Q. 16: Value of e-resources

In what situations do you most value electronic resources	Yes
To publish scholarly journal	43
To undertake a research project	24
To write a thesis or dissertation	26
To perform a routine task	15
To perform a new task	12
Other, please specify	1
Grand Total	121

Moyo (2004) stated that there are various situations in which a user uses e-resources including: publishing in scholarly journals, undertaking a research project, writing a thesis or dissertation, performing a routine task and performing a new task. Table 5 summarizes the answers to question 16. The survey results support the observation that different categories of users value e-resources differently (Lui, 2006). It is clear that most of the respondents 43 (71.7%) used e-resources for publishing in a scholarly journal, 24% (40%) of respondents used e-resources for a research project, 26 (43.3%) used e-resources to write a thesis or dissertation, while 15 (25%) respondents used e-resources to perform routine tasks, such as gathering information for a specific topic and getting answers to specific questions. The respondents were also given an option to specify other situations in which e-resources are most valued. One respondent replied he wanted to update his research in the latest technology and to see new books in Law.

Figure 13: Q. 17-20: Accessibility problems



Section D, Questions 17 to 20, provide a series of Likert scale statements which were designed to explore respondents' views on the use and values of library's e-resources. Question 17 tried to establish whether the respondents agreed that the library has too many e-resources. Figure 13 shows that a total of 40 (66.7%) respondents agreed or strongly agreed that there are too many e-resources in CPUT libraries, making it difficult for users to find relevant information. However, 9 (15%) of the respondents disagreed or strongly disagreed while, a total of 8 (13.3%) were undecided and 3 (5%) chose not to answer.

The next statement, Question 18 tried to find out if respondents are of the opinion that it takes too much time to find relevant e-resources. Figure 13 shows that a total of 20 (33.3%) respondents disagreed or strongly disagreed with the statement that a total of 20 (33.3%) agreed or strongly agreed, however a total of 16 (26.6%) were undecided and a total of 4 (6.6%) chose not to answer. One of the respondents who disagreed with the statement gave a reason why:

“The CPUT library’s e-resources are very convenient and I find relevant and important information much easier on it does oppose to visit the physical library [sic]”.

Question 19 stated that e-resources are not always accessible because of slow connectivity, and Figure 13 shows that a total of 36 (60%) respondents disagreed with the statement, while a total of 17 (28.3) agreed, 4 (6.6%) undecided and 3 (5%) chose not to answer. In most cases respondents ‘Strongly Disagreed’ with the statements. These results also indicated that the majority disagreed that internet connectivity is a problem. A common problem noted in the literature review, that connectivity was a problem in African countries, no longer seems to be a major problem at CPUT.

The next statement, Question 20, investigates a lack of supporting structures that limit the use of e-resources. However, the figure shows that 31 (51.6%) respondents disagree with the statement, 18 (30%) agree, 4 (6.6%) undecided and 7 (11.6%) chose not to answer: One of the respondents who disagree with the statement gave a reason why:

“Definitely, being introduced to the e-books and databases by the engineering librarian saved me lot of time and effort when doing my research. I predominantly make use of Science Direct, Engineering Village and Emerald”.

A few added free-text comments about their own experiences, such as:

“I used to struggle due to lack of IEEE access, but couple months [sic] go this issue has been improved”.

One respondent stated to

“Only when the internet connection strength is very weak”.

“We need to pay for it”. [i.e. articles not subscribed to, need to be purchased]

“Some of the e-resources do not allow us to download the useful information. This is due to the fact that the university is not subscribed to those sites”.

“Username and password”.

“What can we do if the publications we want to read (e-journals) are not in CPUT list of subscriptions?”

“At times you will not be able to access some of the journal papers and articles that are relevant to your research area”.

“I don’t find the specific items of my discipline of research or field of research”.

“Connection problem with the server or IT related problems”.

“Struggle to download”.

“The speed of internet connection is too low”.

This is consistent with the existing findings that, relevant, up-to-date and rapidly accessible information is still what satisfies the users the most and that there are remaining problematic issues at CPUT.

4.4. Responses to final open ended question

Academics and postgraduate students in the department of Electrical and Mechanical Engineering, who responded to this questionnaire, showed that they were indeed using the e-resources made available by CPUT Libraries. The majority of respondents use e-resources and they all recognized their value in helping them to locate information easily,

This section noted and analyzed the comments that respondents gave in answering the last two questions, which asked for any suggestions for additional areas of training which were not mentioned by the researcher, and problems encountered while respondents used e-resources. Results show that respondents were fairly happy about the access to e-resources. A few comments noted that respondents frequently had problems accessing e-resources and downloading, due to lack of internet connectivity or downloading delay. Passwords that are not always available discouraged respondents from using e-resources. Some e-resources did not allow respondents to download full-text articles when CPUT Libraries have not subscribed to the journals in which they were published.

One typical comment was:

“I think the e-resources should be for support teaching as well as learning and research so that we graduate students who can use these e-resources especially in this technological era”. “We need more specific electronic resources, for each discipline of research”, I don’t find the specific items of my discipline of research or field of research”.

4.5. Summary

Results of the present study were discussed in detail in this chapter. It was found that academics and postgraduate students were aware of, and were using the e-resources that are made available by the CPUT Libraries. Most of the e-resources provided by CPUT Libraries were used, with the exception of two, which had low usage as discussed in chapter 1 page 7-8.

A variety of problems experienced by academics and postgraduates when using the databases was discussed. The problems related to infrastructure, a lack of training and awareness. Even though most respondents used e-resources, the use was not without some challenges. This study confirmed previous studies’ findings that power failures, system breakdown and slowness of server due to bandwidth problems were major constraints. According to Soyizwapi’s study, the focus was the use of electronic databases by postgraduate students where as this study focused on the use and value of electronic resources by academics and postgraduates. There were similarities and differences in both studies. Both studies found that respondents were aware and use e-resources although there were a few e-resources that were underutilized. Another similarity was network connectivity which delayed downloads and log-on. Differences were; limited off-campus access and difficulty with searching.

4.6 Conclusion

Attitudes towards the use and value of e-resources were shown to be generally positive. This was evident in the high proportion of participants who responded

positively to using e-resources, the high frequency of use, high percentages of respondents rating e-resources useful and the way that e-resources were integrated into work and study. This positive attitude was further confirmed by additional comments and from sixty respondents who rated e-resources being important and extremely useful. Certain negative responses were nevertheless received as well; they were mainly related to connectivity and slow downloading.

The findings of this chapter will be interpreted in the light of the study questions in the following chapter.

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CHAPTER 5

INTERPRETATION OF FINDINGS AND RECOMMENDATIONS

5.1 Introduction

The previous chapter summarized and analyzed the data that was gathered for the investigation. This chapter interprets the findings to understand the research problem at a deeper level and to answer the research questions which were listed in chapter one. Chapter three described the project as methodology. Its aim was to explain how evidence to assess the use of e-resource at CPUT Libraries would be collected. Chapter four discussed the data gathered and summarized, to answer the research questions. Chapter five will seek to find answers to the questions that were generated and listed in 3.2. The research questions were addressed as follows:

5.2 Do engineering academics and postgraduate students use e-resources?

It was found that respondents were quite knowledgeable about the e-resources that were available in the CPUT Libraries. According to the respondents, they are generally aware of e-resources although some are not using them for similar reasons to those mentioned by researchers from previous studies discussed in chapter two. A few respondents (28.3%) from this study stated that they were unable to use e-resources because they were not aware of the existence of e-resources. Similarly Rehman and Ramzy (2004: 154) and Ansari and Zuberi (2010: 5) found that respondents reported that time constraints, lack of awareness and facilities and low skills levels were among the primary constraints they experienced in using e-resources. The above studies showed that a large number of respondents proposed a variety of measures of formal orientation and training to become more effective users of e-resources. Lack of knowledge and lack of facilities and skills could be the reasons for not using e-resources. The study by Agaba, Kigongo-Bukenya & Nyumba (2004) noted that library workshops and library staff were the most useful tools for publicizing e-resources. Similarly in CPUT, library workshops, for example information literacy training and one-on-one consultations were the most used tools for spreading awareness about e-resources.

According to Zhang, Ye and Liu (2010:70) many earlier studies have shown an opposing relationship between e-resources and age, but the more recent results indicated that users of all ages are switching to the e-formats not only in terms of usage but also preference. This is confirmed by the present study which shows that a majority of 65% respondents from CPUT were using e-resources, proving that they were aware of them. Even older users at CPUT were aware of e-resources, although few were not using them, possibly on account of their age, as shown in Figure 1.

In general, the results of this study demonstrated that academics and postgraduates were making considerable use of various e-resources. This question attempted to establish the extent to which academics and postgraduates in the Faculty of Engineering made use of e-resources from CPUT Libraries. Answers to Question 5 revealed that the majority of respondents “often” used the e-resources that are available at CPUT Libraries. The results from figure 5 showed that e-resources are much preferred by respondents due to their nature of using it ‘Often’ and ‘Sometimes’, there are few respondents who responded as never use e-resources, it might be not attended training. A total of 55 respondents used e-resources sometimes or often. Five reported that they never use e-resources, possibly because they are just not sufficiently aware of e-resources. Similarly Rehman and Ramzy (2004: 154) and Ansari and Zuberi (2010) found this kind of lack of awareness among academics and suggested a variety of measures for formal training to become more effective. The questionnaire results in Figure 6 indicated that the low usage of e-resources by academics and postgraduates could be attributed to poor access to computer facilities and lack of skills. Other factors that reduce the use of e-resources could possibly be the fact that they were not aware and don’t know how to use these e-resources. Individual free text comments provided reasons indicating that issues such as the unavailability of passwords, problematic internet connections and inadequate electronic resources discouraged their use of e-resources.

Similarly Rehman and Ramzy (2004); and Ansari and Zuberi (2010: 5) found this kind of lack of awareness among academics and suggested a variety of measures for formal training to become more effective. In answers to Question, 7 respondents listed places where they accessed e-resources and those were identified as the CPUT Library page, on campus, and within the library. Off campus access to e-resources usage also was in evidence.

Question 8 dealt with various types of e-resources that are available and can be used. In this question participants responded that they were using more than one format. Figure 8 showed that the most frequently used e-resources are online journals and e-books, followed by databases and online theses. It was further found, that the majority of respondents who did use e-resources mostly used them more than once a week (figure 9), and primarily with the purpose to find information in a specific topic (Figure 10).

Question 13 dealt with use of e-resources as an integrated part of respondents' work. Respondents indicated that they 'often' used e-resources to gather information on a specific topic. The results show that e-resources are much preferred by respondents due to their nature of being extremely useful and less expensive (see chapter 1) and used frequently. One can therefore conclude that the respondents indeed use e-resources at CPUT.

5.3. For what purposes do academics and postgraduates use e- resources?

It is important to know the purpose of use of the e-resources by the users of the library. Four reasons were listed against which respondents were allowed to choose more than one reason; Figure 10 indicated the reasons for choosing e-resources. The results from the questionnaires revealed that respondents make use of e-resources for various purposes, which include gathering information on a specific topic, doing a literature review, obtaining answers to specific questions and gaining general information, According to Rehman and Ramzy (2004) from chapter 2, the purpose of using e-resources is multi-dimensional. The main purposes for using e-resources could therefore be established. Moyo (2004) supported researchers' findings that there are various purposes for using e-resources and figure 10 summarizes these findings that indicate substantial use for a variety of purposes.

5.4 What is the value of using e-resources in the process of teaching, learning and research?

The majority of respondents from the two departments in the Faculty of Engineering indicated that the library's e-resources were valued. The survey showed that e-resources were part of respondent's work and study and they integrated e-resources into their teaching, learning and research. It also showed that e-resources were rated

as useful because they helped respondents to accomplish their tasks. In Chapter 2, it was shown that there were three value considerations relating to e-resources that stand out: staying current, saving time and saving money (Scotti, 2010: 23). Scotti's study found that the availability of e-resources 24/7 and from remote locations add value. The present study concurred by valuing access from remote locations most highly (Figure 11).

Findings from this study indicated that there were various situations for users to use e-resources and were supported by Moyo (2004) who showed in (chapter 4, Table 5.) Respondents from this study used e-resources for publishing in scholarly journals, research projects, writing theses or dissertations and performing routine tasks. E-resources are therefore valued by the respondents because they can obtain required information and save time and effort. Question 11 asked for reasons for using e-resources. A total number of 27 (45%) respondents chose e-resources on account of ease of access, 30 (50%) thought that they save time, whereas 35 (58%) valued the fact that there is no need to go to the library because they can access e-resources at home or from their offices. Of all the reasons for using e-resources no need to go to the library was the most popular. This concurs with Ray and Day (1998) in Egberongbe (2011:8) who found that using e-resources saved respondents' time and they were relatively easy to use.

5.5 What problems do academics and postgraduates encounter when using e-resources?

Responses to questions about problems encountered by academics and postgraduates in the present study were similar to the studies done by other researchers discussed in chapter 2. Studies that were conducted by Shukla and Mishra (2011); Soyizwapi (2005) and Smith (2007) all found that the majority of respondents who use e-resources experienced difficulties with password and access requirements to use e-resources. Slow connectivity was found to be problem by a number of respondents, which is a problem of insufficient bandwidth.

Questions 17-20, provided a series of statements which were designed to explore respondents' views of the use and value of library's e-resources. Question 17, attempted to ascertain whether the respondents agree that the library has too many e-resources, something which could have been a problem for respondents. Figure

13 showed that 66.7% of respondents agree with the statement that there are too many e-resources in the CPUT libraries, possibly confusing users or making it difficult for users to find relevant information. However, 15% of the respondents disagreed, 13.3% were undecided and 5% chose not to answer.

The next statement, question 18, tried to find out if respondents feel that it takes too much time to find relevant e-resources. Figure 13 showed that 33.3% respondents disagreed with the statement, 33.3% agreed however, 26.6% were undecided and 6.6% chose not to answer. One of the respondents who disagreed with the statement gave a reason why:

“The CPUT library’s e-resources are very convenient and I find relevant and important information much easier, and it does oppose to visit the physical library”.

Question 19, explored whether e-resources were not always accessible because of slow connectivity. However, 60% of respondents disagreed with the statement, 28.3% agreed, 6.6% were undecided and 5% chose not to answer. These results also indicated that the majority disagreed that internet is a problem. This shows that a common problem noted in the literature review, that internet connectivity is a problem in African countries, seems not to be a major problem in CPUT.

The next statement, Question 20, finds out whether the lack of supporting structures limited the use of e-resources. However, Figure 13 showed that 51.6% respondents disagreed, 6.6% were undecided and 11.6% chose not to answer:

Figure 13 also showed that in the statement, 30% agreed that e-resources were not always accessible because of slow connectivity, so that articles could not be downloaded. It therefore became clear that the main problems encountered at CPUT were unavailability of passwords and full-text articles, internet connectivity and slow downloaded articles.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the use and value of e-resources by academics and postgraduate students at CPUT. Academic libraries are committed to provide access to e-resources, to support the teaching, learning, research and scholarship needs of the institution, through innovative services, cutting-edge systems as well as excellent facilities and resources as expressed in their mission statements. Library users are no longer obliged to visit the library at regular open hours to meet all their information needs as they may use e-resources at their own time and in their spaces.

The objectives of the study would be achieved if it was established that academics and postgraduates in the Faculty of Engineering used and valued e-resources. The aim was to consider the various factors of e-resources such as use, value, awareness, purpose, problems and to make recommendations for the improvement of library services in this domain. This study found that academics and postgraduates used e-resources for various purposes and seemed to value their ability to do so.

It is the researcher's view that the study has succeeded in answering its research questions as reflected in the results presented in chapter four and continued in chapter five. This study showed that using the various e-resources was very common among the academics and postgraduates in the Electrical and Mechanical Engineering Departments in the Faculty of Engineering at CPUT. It further revealed that the majority of respondents from the study were aware of e-resources and valued the e-resources that are available in CPUT Libraries. The study also showed that there were only a few respondents that did not make use of e-resources, possibly due to not knowing about them or having had insufficient training in their use.

The study further showed that academics and postgraduates made use of e-resources for various purposes and these included gathering information on a specific topic; doing a literature review; obtaining answers to specific questions and gaining general information. However, the most common reason was to retrieve information for academic purposes.

The study also established that respondents encountered problems in their use of e-resources and that those problems could be categorized into barriers relating to infrastructure problems and to those that relating to personal barriers. It was observed that the availability of e-resources on-campus and off-campus is almost enough for the above population. Regard to problems related to poor infrastructure, the most significant constraint was the speed of internet connectivity. Personal barriers that were mentioned by a few respondents included a lack of awareness of e-resources. In addition, training programmes are crucial for a better use of e-resources.

This study also showed that the most important features of e-resources were saving time, ease of access and usefulness. On the basis of the above analysis and observations, it was found that e-resources are highly regarded among academics and postgraduates at CPUT. A good number of users were using e-resources for research, study and for keeping abreast with new developments in their areas of interest.

Finally, it can be concluded that e-resources have a crucial role in the information retrieval process. E-resources have rapidly changed the way of seeking and disseminating information. It was clear that from this study that the frequency of using e-resources is important to academics and postgraduates at CPUT. This study should help librarians to understand the importance of e-resources in the academic environment. The use and value of e-resources were highly regarded among academics and postgraduates in two departments of in Faculty of Engineering and they demonstrated the positive impact of the e-resources in teaching, learning and research work.

6.1. Recommendations

Based on the findings of the present study, the researcher wishes to make the following recommendations towards even more effective use of e-resources at CPUT.

6.1.1 Improving awareness

Library professionals of CPUT Libraries have to create even more awareness of e-resources, but before that librarians should ensure that all the e-resources are readily and easily available. Training courses in the first place to train the trainers, should be organized for awareness and use of e-resources among the trainers themselves.

6.1.2 Use of e-resources

In order to improve the use of e-resources in CPUT Libraries, there is a need for more training of academics and postgraduate students. There is also a need for improved access to these resources for academics and postgraduates. E-resources are helpful especially to distance learners who have limited time to access CPUT Libraries as mentioned in chapter 1.

Training programmes are essential for better use of e-resources campus-wide. It is evident from the analysis that the availability of e-resources in CPUT Libraries is relatively adequate. The majority of respondents in chapter 4 indicated that they used e-resources often for different reasons and showed that e-resources are very important from these two departments in the Faculty of Engineering.

User training is essential for the better use of e-resources in the library since the majority of users use e-resources independently and in their own space and time. The library should also identify the non-users of e-resources and appropriate steps should be taken to convert them into actual users of the resources. Furthermore, since users are still experiencing problems in gathering information, the most suitable measures should be taken to overcome this.

6.1.3 Additional Training needs for improving use of e-resources

Academics and postgraduates of the Faculty of Engineering still need to be assisted and guided in their effective use of e-resources. For example respondents were asked if they attended any training course in using e-resources. The majority of respondents indicated that they had attended training, but there were few who would like to attend. This suggests a need for additional user training programmes whereby users will be trained in searching for information in e-resources and the online catalogue. There is also a need for online tutorials that can assist users with step-by-step guides to use during their own time of need. Each department in the Faculty of Engineering should have a well-equipped computer laboratory and qualified IT expert should be provided to solve the problems of networking.

6.1.4 Improving the speed of internet connectivity

Participants were asked to respond to the statement indicating that e-resources are not always accessible because of low internet connectivity.

Lastly, as a recommendation for further research, a research project to include the whole faculty or the entire university could be conducted to compare the results of this one with those of other faculties at CPUT.

6.2 Conclusion

It is the researcher's view that the study has succeeded in answering its research questions, as reflected in chapter four and five. The conclusion is drawn from the findings of the study with reference to the research questions as outlined in chapter one (1.6.3). In conclusion therefore, this study found that:

- The library's e-resources are used extensively among academics and postgraduates at CPUT. It further, showed that the majority of academics and postgraduates students made the greatest use of e-resources, and valued them.
- The study further found that academics and postgraduates made use of e-resources for various purposes and these include gathering information on a specific topic, doing a literature review, obtaining answers to specific questions and gaining general information. The main reason to use these e-

resources, however, was to retrieve information to help them with their academic work.

- The results of the study further indicated that academics and postgraduates used the library's e-resources for their work or studies. According to the results of this study, e-resources are regarded as important for teaching, learning and research in this university environment. It further indicated the value of e-resources that include publishing in scholarly journals, undertaking a research project, writing a thesis or dissertation, performing a routine task and performing a new task.
- The study also established that academics and postgraduates students encountered a few problems in their use of e-resources, and that these could be categorized into barriers relating to information technology infrastructure and personal barriers. Problems that related to poor infrastructure were logins, passwords and slow download, and a lack of skills was a personal barrier.

According to the non-structured responses, it is clear that the main causes of non use of e-resources at CPUT by academics and postgraduates are due to issues related to access. It is suggested that these difficulties could be improved by increasing users' awareness of e-resources, improved internet connectivity and enhanced training initiatives.

CHAPTER 7.

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APPENDIX 1



25 May 2011

Dear Dr. Green, T.

LETTER FOR PERMISSION

I kindly ask a permission to conduct research in Faculty of Engineering. I am currently doing Masters in Librarianship at the University of Cape Town and entails doing Mini Dissertation. I will be completing my studies in the year of 2012. My research project for Mini Dissertation is titled, **USE AND VALUE OF LIBRARY'S ELECTRONIC RESOURCES BY ACADEMICS AND POSTGRADUATES AT CAPE PENINSULA UNIVESRITY OF TECHNOLOGY (CPUT)** .

Dr. Chiware, E. Director of CPUT Libraries, has given permission for the study to be conducted.

Therefore I would like to request the committee to grant me permission to conduct this project. During my data gathering process, I promise anonymity and confidentiality to the individuals who will take part in the survey. I believe the outcomes of this research will add value to CPUT libraries.

As we are in the transition of moving from print to e- resources, I feel that there is a need for this project to be done. CPUT is spending a lot of money buying different databases. I want to find out, its relevancy to teaching and learning and how it's being utilized. My target groups will be engineering faculty academics and postgraduate students. Findings of this study will give insight into the user's behavior and the use of e-resources. People will be involved; lecturers, researchers and postgraduates: Mtech and Dtech.

Yours Faithfully,

NomambuluDolo-Ndlwana

MBibl. Student (UCT)

E-mail : dolon@cput.ac.za

APPENDIX 2



P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 959 6666 • Fax +27 21 595 6641
Symphony Road Bellville 7535

ENGINEERING FACULTY

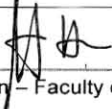
On the 3rd of June 2011, the Engineering Faculty Management of the Cape Peninsula University granted ethics approval to **Nomambulu Dolo-Ndlwana** for research activities related to her Mini dissertation in Librarianship at the University of Cape Town

Title of mini dissertation:	<i>Investigate the use and value of the e-resources collection at the Cape Peninsula University of Technology (CPUT)</i>
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Comments

Permission is granted with the understanding that you conduct the surveys in a coordinated manner working with the departmental secretaries.

Research activities are restricted to those detailed in your letter requesting permission to perform the research activities.

 Signed: Dean – Faculty of Engineering	14 JUNE 2011 Date
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APPENDIX 3



14 May 2013

Dear Academics and Postgraduate Students,

LETTER OF INTRODUCTION TO ACADEMICS AND POSTGRADUATE STUDENTS.

My name is Nomambulu Dolo-Ndlwana: an Engineering faculty librarian at Cape Peninsula University of Technology (CPUT). I am doing Masters in Library and Information Studies at University of Cape Town (UCT). As part of my course, I am required to produce a Thesis. My research project is titled **USE AND VALUE OF LIBRARY'S ELECTRONIC RESOURCES BY ACADEMICS AND POSTGRADUATE STUDENTS AT CAPE PENINSULA UNIVERSITY OF TECHNOLOGY (CPUT)**. My investigation is facilitated by means of a questionnaire sent out to Engineering academics and postgraduate students at CPUT.

I kindly ask few minutes of your time to answer the attached questionnaire. As we are in transition, moving from print to e-resources, I feel that there's a need for this project to be done. CPUT spends a lot of money subscribing and purchasing different types of electronic resources. I want to find out their usage and relevance to teaching, learning and research. Findings of this project will give insight to the user's behaviour and use of e-resources.

The success of this project relies on the information that will be gathered by means of the attached questionnaire. Please be assured that the information gathered will be used strictly for the purposes of the project. Confidentiality and anonymity are assured. The project is conducted under the supervision of Prof. K. De Jager from Department of Library and Information Studies at University of Cape Town. Her e-mail address is Karin.dejager@uct.ac.za

Once you completed the questionnaire, please return to me via e-mail by 23 May 2012.

Your participation in this regard is much appreciated.

Yours Sincerely

Nomambulu Dolo-Ndlwana

Librarian: Engineering

CPUT: Cape Town/ Bellville Campus

Tel: 021- 959 6947

Cell: 0836641311

E-mail: dolon@cput.ac.za

USE AND VALUE OF THE LIBRARY'S ELECTRONIC RESOURCES AT CAPE PENINSULA UNIVERSITY OF TECHNOLOGY (CPUT).

MBibl Project: 2012

Questionnaire

Your answers are confidential and you will remain anonymous.

(a) Personal Information

1	Age					
2	Gender	M	F			
3	Qualification(s)					
4	Status	Academic Staff		MTech		DTech
5	Other, please specify:					

(b) Use of electronic resources, Electronic resources refer to all items available in and electronic format, either via library subscription databases, individual journal titles and book collections; for example e-books, databases, e-journals

5. Do you use the electronic resources in the library?

Often		3
Sometimes		4
Never		5

6. If “never” what is the reason for not using electronic resources?

Not aware of electronic resources		1
Don't know how to use them		2
Don't need them		3
Too much time consuming		4
I am unable to access		5
Other, please specify:		6

7. How do you access electronic resources?

CPUT library page	Yes	No
Off-campus access	Yes	No
Internet café	Yes	No
On campus and within library	Yes	No
Other please specify:		

8. Which electronic resources do you use?

E- books	Yes	No
Databases	Yes	No
Online Journals	Yes	No
Online Theses	Yes	No
Other please specify:		

9. How often do you access electronic resources?

More than once a week		1
Once a week		2
Once a fortnight		3
Once a month		4
Less than once a month		5
Never		6

10. For which reason do you use electronic resources?

To gain general information	Yes	No
To get answers to some specific questions	Yes	No
To gather information on a specific topic	Yes	No
To do a literature review	Yes	No
Other, please specify		

11. Why do you choose to use electronic resources?

Ease of access	Yes	No
Save time	Yes	No
No need to go to the library	Yes	No
Availability of search tools	Yes	No
Other please specify:		

12. Have you attended a training course in using electronic resources?

Yes		1
No		2
No, but would like to attend one		3

(c) Value of electronic resources

13. Is the use of electronic resources part of your work/ study?

Yes		1
No		2
No, but would like them to be		3

14. Have you integrated electronic resources into teaching, learning or research?

Yes		1
No		2
No, but attempted to		3

15. How useful do you rate electronic resources in helping you accomplish your tasks?

Extremely useful		1
Quite useful		2
Useful		3
Not sure		4
Not useful		5

16. In what situations do you most value electronic resources?

To publish scholarly journal	Yes	No
To undertake a research project	Yes	No
To write a thesis or dissertation	Yes	No
To perform a routine task	Yes	No
To perform a new task	Yes	No
Other, please specify:		

(d) Impacting factors

17. There are too many electronic resources

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

18. It takes too much time to find the relevant electronic resources

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

19. Electronic resources are not always accessible because of slow internet connectivity

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

20. Lack of supporting structures (such as connection, downloading, and printing) limits the use of electronic resources.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	2	3	4	5

21. Do you have suggestions for additional areas of training not mentioned above?

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22. What problems as academics, researchers and postgraduates do you normally encounter when using e-resources?.....

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.....

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THANK YOU FOR YOUR TIME AND EFFORT!

For more information contact me at 021- 959 6947/ 0836641311 or email me at dolon@cput.ac.za Nomambulu Dolo Nadlwana

My supervisor, Prof. Karin De Jager, "Karin De Jager" Karin.DeJager@uct.ac.za