

**Usage of library electronic resources by students at North West University,
Vaal Triangle Campus, South Africa**

by

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Vaal Triangle Campus, South Africa**

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I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.



SIGNATURE

January 2022

DATE

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ABSTRACT

Academic libraries provide print and electronic resources for their users. Librarians have to market and train their users in how to access electronic resources (e-resources). The purpose of this study was to examine the usage of library e-resources by students at the North-West University (NWU) – Vaal Triangle Campus (VTC) (NWU-VTC). To attain this purpose, six objectives were formulated: to find the level of knowledge of students in using e-resources, to understand students' motives for using e-resources, to identify the particular e-resources used by students, to find out which methods are used by library staff to inform students about the availability of e-resources, to pinpoint the issues faced by students when accessing e-resources and to recommend measures to enhance students' utilisation of e-resources.

The target population of the study was students registered at the NWU-VTC for the 2018 academic year. The study used the quantitative research approach and the descriptive survey research design was employed. The study also adopted probability sampling with the simple random sampling technique. The total population of registered students was 7 821. According to the sample size calculator, the sample size for this study was 365.

The data were obtained via a questionnaire, and the statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS). The study discovered that most respondents had knowledge of using e-resources and most preferred to use e-resources, as they were easy to browse and navigate. From the findings of the study, it could be seen that the NWU-VTC library users did not use e-resources adequately, as most of the students were inexperienced in using e-resources. The study recommends that, during the orientation of new students, librarians should conduct seminars aimed at training the students to have abilities such as computer and information literacy, information retrieval and digital literacy skills.

KEY TERMS: Electronic resources, academic libraries, information communication technologies, North West University, Vaal Triangle Campus, academic librarians, students, information literacy

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LIST OF ABBREVIATIONS AND ACRONYMS

CD-ROM	Compact Disc Read-Only Memory
DVD	Digital versatile disc
ICTs	Information and communication technologies
NWU	North West University
OPAC	Open Public Access Catalogue
SPSS	Statistical Package for Social Science
UNISA	University of South Africa
VTC	Vaal Triangle Campus

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

Academic libraries are striving to improve their services by augmenting their collections with electronic resources (e-resources). Most South African academic libraries adopted technological innovations in their collections. Traditional libraries included e-resources in their collections. E-resources assist in the dissemination of information around the world. The model of the traditional library is moving very fast due to the impact of information and communications technologies (ICTs) and e-resources, with libraries storing both printed and e-resources. ICTs have compelled modern libraries to digitise their collections (Natarajan, 2017).

There are various ways to access e-resources from remote locations via computer networks or directly through discs, cassettes, cartridges and flash discs. As a result of the widespread use of ICTs, access to and usage of e-resources in academic libraries is rising fast. Currently, many scholarly papers can be accessed from the internet (Isibika & Kavishe, 2018). Computer literacy is one of the factors that affect utilisation of e-resources.

According to Sambo et al. (2016), e-resources are the electronic representation of information and have become preferred sources of information. E-resources such as e-journals, e-books and databases, together with printed resources, are used to meet the daily academic and research needs of library users (Bhattacharjee & Sinha, 2016). In most academic libraries, they are used to enhance and replace printed information sources. E-resources have ample advantages over printed sources, such as they are easier to update than print resources. Sometimes online access to e-journals is also available along with the printed versions. Academic libraries are increasingly adopting a consortium approach to access e-resources over the internet (Sinha, Bhattacharjee & Bhattacharjee, 2013).

According to the report, organisations are investing heavily in information technology (IT) systems and facilities in order to reduce operational costs, increase productivity

and improve their competitiveness. Universities, as institutions of higher learning, spend a significant percentage of their budgets on providing ICTs and e-resources to their academic communities in order to improve teaching and learning processes and outcomes. As evidenced by the recent pattern of information acquisition, organisation and distribution, e-resources are changing the pattern of library information and service offering. In the context of this study, e-resources refer to all information materials in the library that can only be accessed electronically through the utilisation of ICT capabilities (Ngozi, 2015:486).

With the introduction of e-resources, the way in which information in databases is accessible has changed dramatically, and retrieval times have improved dramatically. The growth of and demand for knowledge have been amplified several times during the last few decades. With the introduction of e-resources, previously manual processes and operations have been automated, boosting the role and responsibilities of librarians (Natarajan, 2017:163). E-resources are defined as sources of knowledge that are investigated using modern ICT equipment, established, reformed and often preserved in cyber space in the most tangible and compressed form, and may be accessed simultaneously by a large number of viewers from infinite sockets (Gautan & Sinha, 2017:2). Numerous people can access e-resources at the same time from different locations.

Although there was a slowdown in the market, the availability of information in electronic format is causing a global revolution in how academic libraries acquire and disseminate information (Chiarizio, 2013:624). Students at the University of Ghana were motivated to utilise e-resources because of the availability of search tools (Akuffo & Budu, 2019:6). Furthermore, at the Great Zimbabwe University, the availability of information in electronic format simplifies students' lives when retrieving relevant information because it facilitates easier indexing and searching (Mawere & Sai, 2018:1). According to Tlakula and Fombad (2017) "the students' level of utilisation and responsiveness of the e-resources was low". The findings disclosed that students at the University of Venda utilise these resources at a basic and limited level. Most academic libraries are adopting e-resources as part of their collection for their students.

1.2 CONTEXTUAL SETTING

The North West University is a multi-campus university with campuses in two provinces. The VTC is in Gauteng, and the Mafikeng and Potchefstroom campuses are in the North-West province. The Institutional Office, often known as the main campus, is located near the Potchefstroom campus in Potchefstroom. The university follows a decentralised management approach, with the campuses functioning as business divisions. The institution is governed by a single set of policies, systems and standards (NWU, 2017). The VTC was only united with the NWU, a varied multi-campus institution in South Africa, in 2004. The action was part of a strategy by South Africa's minister of education to restructure the country's higher education environment by consolidating tertiary institutions into 21 institutions (NWU, 2017). On each of the three campuses, the university has a campus library, with the VTC library being the smallest of the three (NWU, 2017). The NWU-VTC library provides information to students in print and electronic format and it houses e-books, e-journals, e-theses, e-magazines, e-newspapers and databases as part of their e-resources. Therefore, it was important to conduct this study, as it would assist in finding out the utilisation of e-resources provided by the NWU-VTC library. The study will benefit both users and library staff in determining which collection students prefer.

1.3 STATEMENT OF THE PROBLEM

University libraries' environments all over the world are increasingly becoming electronic. That is why, even with limited funding, most libraries in South Africa are spending a lot of money to offer e-resources to their users and to have these resources integrated into students' learning experiences. The NWU-VTC has a number of e-resources such as e-books, e-journal articles, online magazines and e-dissertations. This shows that traditional library resources, such as printed books and journals, are giving way to online knowledge resources. "Utilising e-resources from online databases, according to library and information studies scholars, will provide students, lecturers, and researchers with accurate and timely literature" (Gakibayo & Okello-Obura, 2013).

However, the utilisation of e-resources by students differs from one university to another, which may likely be due to some institutional and individual factors. The NWU library will be affected if its e-resources are not used by its users. At the VTC, students are not fully computer literate, especially the older students who hail from disadvantaged areas. This became evident when the researcher, as an employee of NWU library, was stationed at the library information desk and recommended both print and e-resources to students who came to use the library. While most of the students preferred print materials and used them often in their studies, it was unclear how these students utilised the library's e-resources for the same purpose and for other reasons. Students made minimal effort to access e-resources, according to Mogase and Kalema (2015). It could be a waste of funds if the university library invests so much in e-resources and they are scarcely used by students. There was a need to conduct this study to determine students' level of knowledge about e-resources with a view to suggesting measures for enhancing the usage of these resources at the NWU-VTC library.

The NWU-VTC is an academic institution in the Gauteng province in Vanderbijlpark, South Africa. The library has numerous types of e-resources such as e-books, e-journals, full-text online databases, e-theses and e-dissertations. A number of researchers, such as Ngozi (2015) and Ahmed (2013a), investigated students' utilisation of e-resources in libraries. Other researchers such as Tlakula and Fombad (2017) conducted similar studies at the University of Venda focusing on undergraduate students in South Africa. However, to the best of the scholar's knowledge, studies at the VTC have not been conducted to explore the students' use of e-resources. Therefore, the problem of this study was that the NWU library has been providing e-resources to support teaching, learning and scholarship at the university, but the patterns of use of these resources by students have not been ascertained through any empirical research, hence this study.

1.4 PURPOSE OF THE STUDY

The aim of this study was to examine the use of e-resources among students at the academic library of the NWU-VTC.

1.4.1 Research objectives

The main objective of this study was to investigate how students use electronic resources at the academic library of the NWU-VTC. The sub-objectives were as follows:

- To determine how e-resources are used by students
- To establish the level of knowledge of students in using e-resources
- To identify the particular e-resources used by students
- To understand students' reasons for using e-resources
- To discover methods used by library staff to inform students about the availability of e-resources
- To identify the challenges faced by students when accessing e-resources
- To recommend measures to enhance students' use of e-resources

1.4.2 Research questions

The main research question that guided this study was "How do students use e-resources at the academic library of the NWU-VTC?" The sub-questions were as follows:

- How are e-resources used by students?
- How much knowledge do students have in using e-resources?
- Which particular e-resources are used by students?
- What are the reasons for students to use e-resources?
- Which methods are used by library staff to inform students about the availability of e-resources?
- What are the challenges faced by students when accessing e-resources?
- Which measures can be used to enhance students' use of e-resources?

1.5 IMPORTANCE OF THE STUDY

The study investigated the usage of e-resources by students at the NWU-VTC library. This study hoped to contribute towards better and more effective usage of the e-resources by the university community. It is also important to other academic

institutions in South Africa and elsewhere where the use of e-resources is still a challenge. According to Bringula (2014:1), personal barriers in terms of commitment had a negative impact on the intention to use e-resources. The study will benefit the NWU-VTC library and students, as the staff will know which types of e-resources students prefer and invest in those e-resources. Furthermore, library staff will understand why students do not use e-resources more often.

1.6 MOTIVATION OF THE STUDY

The NWU-VTC is an academic university that believes in academic excellence. The NWU is one of South Africa's largest universities with campuses across two provinces. Due to the quest to maintain academic excellence, the NWU-VTC invests so much financial resources in procuring e-resources for academic excellence of the students. The researcher observed that students make use of printed materials for their academic work, but the patterns of their utilisation of the library's e-resources still have to be ascertained. It is for this reason that this study was conducted to understand the aims for students' use of e-resources, how these students use e-resources at the library of the NWU-VTC and the level of knowledge of students in using e-resources.

1.7 SCOPE OF THE STUDY

The study looked into how students at the NWU-VTC use e-resources and why they do not use them as frequently as they do printed ones. This study focused only on the VTC, as the students at VTC were not using e-resources as often as printed resources. The topics covered included the level of students' knowledge of e-resources, reasons for students' usage of e-resources, types of e-resources used by students, methods used by staff to inform students about available e-resources, frequency of students' use of e-resources, difficulties that students encounter regarding usage of e-resources and strategies for enhancing students' usage of e-resources. However, the study investigated what leads to students not using e-resources more often.

1.8 LIMITATION OF THE STUDY

For the purpose of this study, the researcher only focused on the VTC library to evaluate the usage of e-resources by students at the NWU-VTC. The researcher observed that the VTC library has e-resources, but they are not used often by students. The study intended to find out which factors affected students not to utilise e-resources often, but the researcher could not find out why students prefer print resources to e-resources.

1.9 DEFINITIONS OF TERMS

The terminologies that are used frequently in this study are defined in this section.

1.9.1 North West University

The North West University is a multi-campus university with campuses in two provinces. The VTC is in Gauteng, and the Mafikeng and Potchefstroom campuses are in the North-West province. The institutional office, often known as the head office, is located in Potchefstroom, close to the Potchefstroom campus (NWU, 2017).

1.9.2 E-resources

E-resources include all information sources (books, journals, databases and other formats) that come in digital format, such as CD-ROMs, DVDs or accessed on the internet (Dolo-Ndlwana, 2013:9). Simply stated, e-resources are information sources that are available in digital format.

1.9.3 Information and communication technologies

ICTs are telecommunications-based technologies that enable access to information (Thanuskodi, 2015:1).

1.9.4 Academic library

An academic library is a library on the campus of a higher education institution that supports the university curriculum and assists university staff and students in their studies/work (Thanuskodi, 2015:1).

1.10 CHAPTER EXPOSITION

1.10.1 Chapter one: introduction and background to the study

This chapter discussed the study's background, aim, objectives, research questions and problem statement, as well as the study's importance and motivation. This chapter also provided a full background of the study on library e-resource usage. It also identifies a specific research challenge from which the study arose.

1.10.2 Chapter two: theoretical framework and literature review

This chapter outlines the theoretical framework and the literature review from previous studies that were done on library use of e-resources, especially academic libraries.

1.10.3 Chapter three: research methodology

This chapter presents the research methodology or approach embraced for this study as well as a detailed outline of the process of collecting data, the method adopted in data collection as well as the population and sampling adopted for this study.

1.10.4 Chapter four: presentation and interpretation of data

This chapter presents the study findings derived from data analysis.

1.10.5 Chapter five: discussion of the findings

This chapter discussed the study's research findings.

1.10.6 Chapter six: overview, summary of the main findings, conclusions and recommendations

The chapter gives the impression of the study, conclusions made from the study and recommendations.

1.11 SUMMARY

This chapter outlined the introduction to the effectiveness of the usage of e-resources by students at the NWU-VTC library. The problem statement addressed the e-resources collection in the NWU-VTC library and the need for proper understanding of the patterns of students' usage of the library's e-resources to provide justification for the development and sustainability of these resources. The chapter further discussed the purpose of this study, research questions and objectives, significance of the study, motivation of the study, and the scope and limitation of the study. The next chapter deals with the theoretical framework and literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter focuses on the theoretical framework and literature review. The literature review of this study was expected to cover various scopes, including types of e-resources, use of e-resources, knowledge of users regarding e-resources, reasons for using e-resources and challenges of accessing e-resources. The following section expounds the types of electronic materials used.

2.2 WHAT IS AN ACADEMIC LIBRARY?

“An academic library is a library involved in a higher education institution and serves its own purposes which are to support the university curriculum and to assist university staff and students in their studies/work” (Thanuskodi, 2015:1).

A library is a customer-oriented business that facilitates access to educational materials, basic knowledge propagation, information preservation and dissemination, human culture and civilisation (Rajan, 2017:15). It is also a location for knowledge creation and exchange. It is a repository of knowledge in various formats (print and electronic). The emergence of ICT boosted library services because librarians are utilising ICTs to reach out to the throngs of library customers, and the advent of technology saw the development of digitised and electronic services, establishing the library's presence in the modern day (Saturday, Itunu, Chinemerem & Hannah, 2013:161). The meaning of the library as an entry for information centres in this era of ICT has been a topic of debate. This could have influenced the fifth UNESCO/CONFINTEA meeting in Hamburg in 1997, which resulted in a declaration and a mandate that "UNESCO should strengthen libraries, museums, heritage, and cultural institutions as learning places and partners in the lifelong learning process and modern citizenship." It could also be the reason why the IFLA UNESCO Public Library Manifesto (Saturday et al. 2013:160) included a resolution for IFLA to take a more active role in improving the role of libraries and to live up to what is stated.

2.3 ROLE OF THE ACADEMIC LIBRARY

According to Thanuskodi (2015:1), the role of an academic library is to aid in the teaching and learning curriculum, including the university's faculty and students' research.

According to Rajan (2017:11), libraries are customer-oriented institutions that provide access to information, knowledge and culture. Libraries fulfil this duty by collecting, stocking, processing and organising documents in print, digital and multi-media formats; developing tools for searching content for usage; and providing user services for information dissemination.

According to Rajan (2017:12), a library is an integrated system; its sub-systems function with one another. Automation allowed the library's sub-systems to work more collaboratively and coordinated to improve the library's overall performance. Automation in libraries, on the other hand, has blurred the distinctions between workers working in separate sections. Every member of a library's staff is involved in the installation of an automated system. A library creates a central database that contains all the library's materials, including titles and items (copies).

Rajan (2017:14) gives purpose of libraries as:

- to distribute books, databases and information to contribute to institutions' missions and goals
- to offer space for students to interact and access information
- to offer facilities to use, store and duplicate information in different media
- to provide individuals with the ICT tools they need to bridge the digital divide and control information access in a responsible manner.

2.4 TYPES OF E-RESOURCES

E-books, e-journals, online databases and e-newspapers are some types of e-materials available in today's libraries.

2.4.1 E-books

E-books are becoming increasingly popular in libraries, and they have numerous advantages over books. E-books are digital reproductions of books that do not take up physical space, and thousands of titles can be stored on a little memory card. Many institutions are unaware of the factors that influence their implementation and usage of e-resources. Students use e-books to cross-validate and learn more about what they have been taught (Nwagwu, 2015:122).

Some librarians object to the adoption of e-books in their libraries for a variety of reasons, according to Kahn and Underwood (2013). These authors believe that e-books threaten the library's part as a storage facility and that users do not want e-books; they have privacy concerns (e-book usage can be tracked); they have no control over title selections; and they have re-allocated budgets to e-books, implying a smaller print collection. Because some e-book formats require specialized software and hardware, libraries may find the format very expensive (Kahn & Underwood, 2013:15).

Despite the fact that e-books are increasing in popularity, e-resources are still more popular at academic institutions, according to research conducted by several writers (Jindal & Pant 2013:317; Walton, 2014:93). Walton (2014:267) explored the reasons for students' preference for e-books and discovered that leisure reading, convenience and research were influencing factors. The decision to buy e-books is influenced by a variety of criteria, including ease of use, accessibility, navigation, compatibility and the usage of portable devices (Shepherd & Arteaga, 2014:17). Due to worldwide competitiveness and the necessity to provide access to all, including remote users, certain academic libraries have purchased e-books. According to Mulholland and Bates (2014:492), some of the primary difficulties inhibiting e-book adoption are a lack of responsiveness, a lack of subject-specific e-books and integration with courses in their study on university staff perception and use of e-books.

2.4.2 E-journals

Arshad and Ameen (2017:180) discusses that most of the lecturers retrieved e-journal articles from open access sources (generic search engines, Google Scholar, and open-access e-journal), which they use more than HEC-subscribed e-journals and other sources. They observed the behaviour of scholars and concluded that, “Google and Google Scholar were the tools of choice, and they rarely went near the once-reliable library” (Arshad & Ameen, 2017:180). It is possible that the increased use of e-journals and papers from open-access sources is because Google and Google Scholar may be accessed at any time, but HEC e-journals are only available on campus. As a result, open-access e-journals and articles are better for retrieval (Arshad & Ameen, 2017:180).

Despite massive investments in journal subscriptions, colleges have varying levels of e-resource usage (Bamidele et la., 2013).

2.4.3 Databases

A database is a prearranged set of data on a computer, particularly one that is easy to obtain in various ways. A database is a computerised documentation maintenance system. A database permits the accumulation, receiving and modification of data (Kavithanjali, 2019: i777). There are various databases that students can use at the NWU-VTC library such as Google Scholar, Emerald Insight, Web of Science, Scopus, JSTOR and others. Google Scholar has thousands of peer-reviewed, editorially reviewed and open-access e-journal articles, and the number of articles is growing every day (Arshad & Ameen, 2017:180).

2.4.4 E-newspapers

An e-newspaper is a digitally collected and stored version of a regular newspaper that is self-contained, reusable and refreshable. This kind of paper is refreshable and the editor can upload all-important news in the e-papers. The user can read and download the news at any time. An e-newspaper is a digital version of a traditional newspaper that allows users to receive real-time news at any time. It is available in all languages,

and users can read prior newspapers kept by date on the internet at all times, eliminating the need for the reader to wait for the newspapers (Kavithanjali, 2019:i776).

2.5 USE OF E-RESOURCES

Despite massive investments in journal subscriptions, colleges have varying levels of e-resource usage (Bamidele et al., 2013 as cited in Yamson, Appiah & Tsegah, 2018). E-resources have become vital in the current educational system due to their capacity to give users with present, suitable and space-unrestricted access to information needs (Ngozi, 2015:489). The fundamental goal of e-resource management, according to Patra and Jha (2014), is to manage e-resource workflows, ensure access, centralise data and improve administrative interfaces, among other things. “In an academic setting, literature supports the fact that the majority of students still choose to use print books rather than e-books” (Muir & Hawes, 2013). According to Omoisejimi et al. (2015), the utilisation of e-resources had a crucial impact on students' achievement educationally, but additional skills in the use of these resources are needed.

Out of all the serials subscribed to by a library, journals are the most important to researchers because many of the papers contained in them are the product of research that may never be published elsewhere (Ogunniyi et al., 2011). Ganesh and Rajendran (2021) mention that their study revealed that the majority of the respondents use e-journals. This is also evident at the NWU where the library subscribes to more than 300 e-databases that provide its users with millions of journal articles. E-journals enable quick access to material, making them more convenient to deliver to library users than traditional points. E-journals are a cheaper medium than printed journals, which is necessary in the harsh budgetary context of higher education (Ellis & Oldham (2005) as cited in Olaewe et al, 2019).

It is worth noting that the NWU ceased its subscription to printed journals in its quest to minimise costs and persuade students to utilise more of the electronic databases to access the journal articles. It is undeniable that the use of print publications among students in most higher education institutions is rapidly declining (Bamidele et al.

(2013) as cited in Yamson et al. 2018). These scholars emphasise that the majority of students believe that textbooks and online search engines are the best sources of knowledge for their research projects and assignments.

With that being said, it is still conspicuous that much needs to be done by librarians in educating students, especially the undergraduate students, about the importance of using electronic databases to access scholarly articles and journals. Students' study habits in a strictly electronic library environment at a large institution were researched by Van Scoyoc and Cason (2006), as cited in Yamson et al. (2018). They discovered that, rather than using university-funded research sources, students in the electronic library relied on internet sites and online education modules (for example, Blackboard or WebCT).

According to Omeluzor et al, (2016), there are four concerns with students' perceptions of using e-resources. Students believe that e-resources in their study area are insufficient and that internet sites and other databases are therefore better than library-subscribed e-resources. E-resources are not organised effectively and finding an e-book or e-journal through the computer system is time-consuming. The second finding, which is similar to that of Gakibayo and Okello-Obura (2013), is that students believe that searching the internet is easier than using subscription e-resources.

Oyedapo and Ojo (2013) discuss the use of e-resources at the Obafemi Awolowo University, Nigeria, where low utilisation of e-resources was experienced. The major motivation for the low utilisation of e-resources was a lack of searching skills. According to a study done by Alhassan and Macaulay (2015), the availability and utilisation of e-resources by students in Niger state showed that e-resources such as the internet, e-mail, online databases, e-databases and e-journals were highly utilised by the respondents in the two universities, whereas others such as CD-ROM databases, e-journals, Online Public Access Catalogue (OPAC) and e-books were rarely used.

This agrees with the affirmation of Eghworo et al., (2015) and Adeniran (2013) who were informed on few utilisation of e-resources at the Federal University of Petroleum Resources Effurun and Redeemer's University, Nigeria, by students.

A study conducted by Omeluzor et al. (2016) discovered various problems that were related to the perception of students in terms of information resources. These authors found that students consider e-resources to be inadequate in their study areas; consequently, they use internet sites and other databases more than e-resources subscribed to by the library. Furthermore, e-resources are not very well organised, and searching for e-book or e-journal from the computer system takes time. Gaibayo and Okello-Obura (2013) provide similar arguments when they state that students perceive internet searches to be easier than using e-resources.

Cumaoglu, Sacici and Torun (2013) state that in this era, most printed resources are being replaced with e-resources and the propensities identified with daily paper, magazine, course material and book reading have undergone changes. The levels of utilisation of e-resources in universities varies, despite the huge investments in journal subscription (Bamidele et al. 2013). Students prefer e-resources most of the time as the information is updated daily. According to Bamidele et al. (2013), the use of print journals among students at several institutes of higher learning is severely decreasing. Currently, it appears that emerging countries are more interested in using databases. Bamidele et al. (2013) state that “certain resources in the library depends on users’ awareness, packaging, format it is presented in, ease of use, result orientation and role of the tutor”.

There is no doubt that the use of e-resources is faced by numerous issues. Bhatt and Rana (2011) indicate that low speed connectivity, a lack of information of statutory provisions for institutions accessing e-resources, technical challenges, a lack of appropriate e-resources, worries about permanency, excessive purchase price and a lack of legal provision are the most typical issues with e-resources. A similar study by Egberongbe (2011) maintains that adequate funding, a lack of strategic planning and a lack of use of the internet to deliver information services to library users are all affecting e-resource usage in academic libraries.

2.6 KNOWLEDGE OF USERS REGARDING E-RESOURCES

Users' information-seeking behaviour has been altered as a result of the rapid rise of new technologies, which has lowered the cost and time spent searching for information in libraries (Dukper, Sakibu & Arthur, 2018). According to Dadzie (2005) as cited in Dukper et al. (2018), the shifting demands and attitudes of users toward information are driving librarians to surrender to the gathering and development of e-resources. As a result, users must be informed about the availability and administration of e-resources. In university research and teaching, academic libraries play crucial role in the framing of knowledge (Aderibigbe & Ajiboye, 2013:245). IT knowledge and information literacy skills are both related to the use of e-resources. Knowledge of e-resources in developing nations, especially among students in Africa, is different from that in developed economies because many African students have yet to learn how to use e-resources or any other computer-based tools effectively (Ngozi, 2015:490).

It is widely acknowledged that libraries can enhance their working efficiency by using knowledge management, as, for instance, it leads to users being able to access resources easier (Islam, Siddike, Nowrin & Naznin, 2015) and to libraries modernising their services (Islam et al., 2015) through knowledge sharing internally and externally (Islam et al., 2015). One of the most necessary terms in today's IT sector is ICTs. It has transformed civilisation into an information society, and our manner of life has changed as a result. It has pervaded every aspect of our lives, with noticeable effects in train and air travel reservations, banking and insurance. Library and information services, printing technology, e-resources, document digitisation, digital library, library networking, e-commerce, trade and entertainment are just a few of the fields covered. They have penetrated everything and they make life easier (Sinha, 2011).

In the author's professional opinion, the youth who makes use of university libraries and who studies towards a bachelor's degree usually already own e-resources, which is not the case for postgraduate students. The younger generations live in a digital age, in which information and communication services are reliant on technical solutions (Makori, 2015:19). "Libraries are giving possibilities for users to access and use e-resources and other services successfully", according to Prakash (2017), cited by Yebowaah and Plockey (2017).

Resource sharing helps to cut costs while still meeting the needs of the users; therefore, libraries are moving towards resource sharing. This establishes a direct link between libraries and information services, enabling them to collaborate on knowledge discovery and dissemination in the digital age. The use of IT shaped the contribution to advanced IT, which developed the services of libraries meaningfully (Bawa, Bawa & Arthur, 2018). It is important that students use the e-resources that the library offers.

2.7 REASONS FOR USING E-RESOURCES

Researchers, students, and faculty members commonly use them to supplement printed resources and e-resources are crucial. E-resources are suitable to use since they allow users to access information from anywhere, including the library, the office and their homes. They also allow users to look for various resources on relevant themes using various search strategies (Okite-Amughoro et al., 2015:24).

According to Olaewe et al. (2019), e-resources have various purposes and benefits for students in faculties, and more so in universities. Once a user is connected to the internet, such user can find and use information from anywhere in the world for any purpose. Olaewe et al. (2019) further emphasise the need to provide library users with skills such as information retrieval and information literacy. This will encourage library users to use e-resources to search for information, particularly for students in academic libraries. This assertion is reiterated by Kinengeyere (2012) as cited in Yamson et al. (2018) who carried out research in Uganda to determine the impact of information literacy on the use of databases in a number of academic and scientific institutions. They found that students were not aware of the existence of such resources, had no idea how to access them and had no idea what resources were available.

Staff members of university such as researchers, faculty members and students have all conducted multiple research projects on the use of e-resources (Olaewe at al., 2019). According to Ahmed (2013b:297), staff members in the faculty use e-resources to prepare learning tutorials for their students. On the other hand, students use e-resources to obtain recent information for their research projects. Moreover, the

resources are used to increase knowledge as part of the learning process. This study showed that students use e-resources for various purposes, including the online application, completing assignments, conducting research, engaging and connecting with friends and colleagues, purchasing materials for their projects and other personal reasons (Alhassan & Macaulay 2015).

“The primary role of e-resources in libraries is to develop daily library service, support the user community in meeting their information needs by making available the greatest number of e-resources possible, assist users in locating non-print material on libraries webpage, provide quality information services to users, thereby assisting students in achieving superior academic skills, and have proficient control over the library's overall operations” (Masese, Omallah, Makwae & Moenga, 2016:204).

When doing research, researchers also use e-journals. According to Amjad, Ahmed and Naeem (2013:317), e-resources have become a commonly used tool for research scholars for learning and research purposes, and for updating their knowledge in their relevant fields (Amjad et al., 2013:325). E-resources have been used to supplement learning and teaching materials, do research, complete assignments, prepare for tests and obtain current information and knowledge updates (Katabalwa, 2016:448).

With ICTs, librarians can now distribute theses and dissertations electronically through the electronic theses' and dissertations' (ETDs) movement (Ezema & Ugwu, 2013:494). E-resources are important and need to be used by the users of the library as they are deemed to be preserved, cannot be damaged and can be accessed by multiple users at the same time.

Corlett-Rivera and Hackman (2014) confirm that most academic libraries no longer have enough space to acquire printed resources; therefore, they prefer to buy these sources in electronic format. Considering the above, this study sought to gather data relating to how undergraduate students at the central university perceive and use electronic and printed resources.

Universities have to implement strategies to make students conscious of the e-resources available to them and ensure that they know what benefits e-resources

could hold for them (Mawere & Sai, 2018). In this way, all parties would be aware of the e-resources that their institutions hold. Olaewe et al. (2019) summarise it quite aptly when they emphasise that because technologies change all the time, students may become more or less satisfied with accessing e-resources; therefore, more studies have to be done to keep abreast of the way in which students perceive and prefer e-resources and what influence these attitudes have on their use of printed or e-resources.

2.8 CHALLENGES OF ACCESSING E-RESOURCES

Yahoo and Google are the search engines most frequently utilised by most of the students. This little usage of e-resources at DELSU may contribute to the reason why postgraduate students do not excel in and enhance their research skills through electronic media (Okite-Amugboro et al., 2015:26). Most library users use search engines rather than databases:

Other studies have shown that there are reasons that hamper access to e-resources. Slow download speeds were noted as a "major limitation strongly associated to overall satisfaction with university subscription resources" in Ahmed's study (2013b:301). Power outages were another challenge that was reported by various studies (Agber, 2013: 274). It was found that Nigeria was also riddled by unreliable power supply, and this made it difficult for some electronic equipment to function, especially those that are sensitive, such as computers (Agber 2013:260).

Gakibayo and Okello-Obura (2013:17) claim that "lack of retrieval abilities and other computer skills hinder students' ability to effectively use e-resources," and that these skills are required to access and use e-resources.

Many students are not aware of the e-resources at their disposal; therefore, they do not think these resources are useful in doing research (Ahmed, 2013b:304). Gakibayo and Okello-Obura (2013:17) argue that, "students need training in the wider range of ICT applications for them to make a habit of utilising e-resources." Information literacy also needs to be part of the training.

Various studies found that students were not able to access e-resources from their homes (Katabalwa, 2016:450) and, according to Ahmed (2013b:302), teachers also experienced this problem. Students and teachers only access e-resources while they are in the university library and, therefore, only they only have access to computers linked to the library's network.

The study by Ahmed (2013b:301) and Ahmed (2013a) found that neither academics nor students could find information they could use for their purposes. This study indicated that because the users could not find relevant information, they were less satisfied with the university in general.

According to Ndubisi and Udo (2013), students face obstacles such as a shortage of internet access on computers, frequent power outages, slow internet connectivity, absence of ICT skills, poor ICT infrastructure and challenge of locating relevant information. Lucky's (2015) study revealed that students' efficient use of e-resources at university libraries was hampered by a lack of abilities to access digital information resources in local and foreign databases, a lack of formal internet training for users, a slow server and frequent breakdowns of digital resources.

The use of e-resources in Tanzanian university was found to be low due to users' negative attitudes, a lack of information literacy skills, a lack of cash to subscribe to e-resources, slow internet access and frequent power outages, according to a study (Mtega et al., 2014). A lack of computers, inconsistent internet connections and a lack of information literacy abilities, according to Madondo et al., (2017:3) are barriers to the accessibility of e-resources.

2.9 STRATEGIES TO ENHANCE STUDENTS' USE OF E-RESOURCES

By providing information services, academic libraries have a huge influence on the quality of the institutions to which they are linked. In order to efficiently meet users' information needs, librarians in academic libraries must first understand what those needs are and the prior knowledge of users relating to finding and organising knowledge. According to Gakibayo and Okello-Obura (2013), internally, there are a number of concerns that need to be handled before students would be able to utilise

e-resources in their studies to their advantage. According to the study conducted by Gakibayo and Okello-Obura (2013:18), the following issues hamper students from fully utilising the e-resources:

- The majority of respondents utilise e-resources infrequently, such as once a week or once a month, and some resources are never used at all.
- Students are unaware of the value and potential of these e-resources in academic programmes.

The effective use of e-resources was hampered by a lack of computer skills, retrieval abilities, a restricted number of networked computers and unstable internet bandwidth, among other things.

The librarian can then create effective user education programmes or information literacy modules for users based on this information (Aderibigbe & Ajiboye, 2013:245). In their attempt to ensure that users find relevant sources for the information they need, academic libraries must market e-resources in various ways by using new ICTs (Yi, 2018:446). Through orientation and information literacy seminars, librarians make a deliberate effort to train, teach and persuade students to make use of the e-resources for their research and academic need (Yamson et al. 2018:292). Librarians should ensure that they offer enough training opportunities to teach their users relevant skills. Such training would lead to structured databases being implemented, which would ensure that information is easily accessed because they would be properly indexed (Saturday et al. 2013:161).

According to Bawa et al. (2018), the academic librarians should begin with a comprehensive awareness campaign about the availability of e-library materials and its utilisation, which would make students aware that this important e-learning resource is available to them and would lead to them using it. It is also important to emphasise the significance of a strong ICT infrastructure in realising this goal. Bawa et al. (2018) further argue that the provision and equipment and enough ICT infrastructure by the management would provide for the utilisation of e-library resources by students for their assignments and other purposes. Akussah, Asante and Adu-Sarkodee (2015:37)

state that this could be achieved through the adoption of a dynamic marketing strategy that will inform and alert members of the existence of e-resources in the library.

It is important to note that librarians can only do so much to help students use the e-resources for their own benefits. Without the cooperation and will of students, it would always remain a challenge for management and librarians to persuade students to optimally utilise the e-resources. According to Bawa et al. (2018), students should create their own reading study table in which time is set aside for going to the library to utilise e-resources. Most significantly, lectures and academic staff must play an important role in advising students to utilise e-databases as opposed to print (Madondo et al. 2017). Madondo et al. (2017:10) further emphasise that librarians and academics should work together to make sure that students know how helpful e-resources can be for their studies. They argue that this would compel students to utilise e-resources.

According to Kamar (2008), cited by Makori (2015:20), various strategic approaches were needed to develop student utilisation of e-resources. Consultative or partnership meetings are the first of these measures. Faculty, library staff and postgraduate students meet on a regular basis, which provides good opportunities for information sharing. The Faculty of Arts at the University of Nairobi has organised talks with students to discuss and promote how important it is to use e-resources in the library.

The second measure is information literacy and learning skills. Library and information staff see to it that a variety of students from all disciplines have skills to search for information and to learn, which match their preferences and requirements. At beginning of the year, all students undergo an orientation session. However, this is not a good way to go about orientation, especially with regard to e-resources, as separate orientation should be given to postgraduate students and undergraduate students.

The third measure is portable brochure. During orientation and other sessions, students receive pamphlets and leaflets with in-depth information about e-resources. These are also placed in areas where many students pass so they could take one and refer to it at a later stage when they need the information.

The fourth measure is the use of guides. The university libraries provide a variety of information services guides to create awareness in their users about the specific e-resources. The guides include the latest resources, information and instructions on how to utilise library information services such as e-journals, databases and books, as well as database search abilities, online catalogues and remote access to library resources while off campus.

Seminar and workshop instruction was the fifth measure. The library and information staff of the University of Nairobi regularly design and present workshops to promote the usage of e-resources.

The sixth measure is public relations. Library e-resources, services and products will be more visible to students if they are portrayed in a positive way.

2.10 SUMMARY

This chapter reviewed literature on the use of e-resources by students at academic libraries. Various literature sources and formats, both primary and secondary, have been reviewed in this chapter. Numerous types of e-resources have been discussed in this chapter, together with the level of knowledge of students with reference to using these e-resources. Literature shows that students do not make full use of the e-resources at their disposal largely due to a lack of knowledge of the existence of these e-resources in their library. As a result, universities must implement strategies that make students aware of the e-resources and library services that are available to them, as well as the benefits they hold for their studies. The next chapter discusses the research methodology of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter focuses on the research methodology and the necessary steps undertaken to collect data to achieve the purpose and objectives of the study. In an attempt to achieve this, the research paradigm, research approach and design, research population and sampling techniques are explained in detail. Furthermore, this chapter covers data analysis, the reliability and validity of data collection instruments, as well as the study's ethical considerations and issues.

3.2 RESEARCH PARADIGM

A research paradigm is the general belief that guides the researcher's action in a particular study (Creswell & Creswell, 2014:6). Research paradigm places the researcher in relation to the philosophies and main ideologies of the phenomena under study. This study adopted the positivist paradigm, which supports quantitative methods and focuses on theory that can be measured from data collected. "Positivism maintains that knowledge development should be limited to what can be observed and measured, (Bhattacharjee, 2012:18)." Positivism favours theories that can be tested directly. The use of this research paradigm improved the use of both scientific and common sense thinking to develop better strategies for improving VTC students' utilisation of e-resources. The use of the positivist paradigm has helped the researcher in selecting an instrument of data collection. "Ontological, epistemological, and methodological prescriptions of social research are packaged in paradigms that drive everyday research" (Sarantakos, 2013:29). The positivist paradigm, which contains a realist ontology and an empiricist epistemology guiding the quantitative methodology strategy and so dictating fixed designs and quantitative procedures, informs the realist ontology. Positivism is based on the assumption that reality is objective and that universal truths about reality may be discovered (Spencer et al., 2014).

3.3 RESEARCH APPROACHES

Philosophical assumptions, design and approaches all play a role in the research approach in social research (Creswell & Creswell, 2014:17). Qualitative, quantitative and mixed methodologies research approaches are all available (Creswell & Creswell, 2014:12). To avoid misunderstandings, the various types of research approaches are explained in the subsequent sections.

3.3.1 Quantitative research approach

Quantitative research is an approach deployed in a study when testing objective theories; it examines relationship between variables (Creswell & Creswell 2014:4).

The quantitative approach was chosen for this study because the study planned to determine the utilisation of online resources by VTC students and the importance of these resources. After the researcher studied all possible research approaches, it was decided to use the quantitative research approach for this study, as it was the most suitable to address the research problem as stated earlier in this study. This study stemmed from the observation of the researcher that seeks answers from the problem statement. Again, to gain comprehensive insight into the research context, many academic researchers in social sciences and globally used this type of research approach (Creswell & Creswell, 2014; Ivankova, 2015; Maree, 2015).

3.3.2 Qualitative research approach

According to Bryman and Bell (2015), Qualitative research entails gathering non-numerical data through methods such as participant observation, phenomenology, and case studies, and then interpreting the findings in narrative or descriptive ways. Additional reasons for using the qualitative approach as identified by Creswell and Creswell (2014:18) are as follows:

- It allows the researcher to communicate with the respondents and assists the researcher to gain a complete understanding of the topic under examination.

- It allows the researcher to gather historical data on the subject under examination.
- It assists the researcher in presenting the findings in a narrative format, establishing and debating the important themes.

Qualitative researchers also have a hard time drawing conclusions that can be applied outside of the study. Similarly, Creswell and Creswell (2014) note that a qualitative study cannot accurately predict events or explain the distribution of some variables in a population.

3.3.3 Mixed method research approach

"A mixed methods research approach is defined as the process of gathering, analysing, and interpreting data in the research process combining quantitative and qualitative methodologies to gain a thorough understanding of the topic (Maree, 2015)." Advantages of using a mixed methods research approach in a research study include the following:

- Discussing the quantitative result before the qualitative outcome to provide the logic for the findings.
- Excessive data collection: In a mixed methods approach, data are acquired by a variety of approaches, including questionnaires, interviews, observations and document analysis, all of which require a significant amount of time and resources.
- Data gathering and analysis expertise: Adopting a mixed methods study approach necessitates an expert's knowledge of applicable data collection instruments and data analysis procedures.
- Contact with various populations: In a mixed methods study, multiple groups of research populations are contacted, which can take a long time.

This study adopted the quantitative approach to actualise the stated objectives. The study also adopted questionnaires as data collection instruments, which support the quantitative approach.

3.4 RESEARCH DESIGN

A research design is a way for gathering data during the research process (Creswell & Creswell, 2014:11). "Research design, according to Bhattacharjee (2012) and Gray (2014), entails the processes of data collection, instrument development, sampling, and data analysis in order to answer research questions." According to this definition, the research strategy, also known as the study design, is influenced by the researcher's philosophical assumptions, abilities and practice, and even data collection methods. A study design, according to Bhattacharjee (2012), is a process of data collection, instrument validation and development, sampling method and data analysis to discover solutions to the problems under consideration. A research design is a way for gathering data during the research process (Creswell & Creswell, 2014:11). According to Bhattacharjee (2012) and Gray (2014), "Research design entails the processes of data collection, instrument development, sampling, and data analysis in order to answer research questions."

A descriptive survey research design was utilised in this study. According to Creswell and Creswell (2014:13), descriptive survey research examines a sample of a population to produce a quantitative or numeric description of trends, attitudes or opinions. Structured questionnaires were employed in a descriptive survey design to collect respondents' thoughts, allowing the researcher to gain a full understanding of the phenomenon under study.

3.5 RESEARCH POPULATION

A population is a collection of people who share some common features that can be identified and studied by a researcher (Creswell & Creswell 2014:160). It is essential to describe the target population accurately. In this study, the population consisted of the registered students of NWU-VTC for the 2018 academic year. The overall number of students enrolled for the 2018 academic year was 7 821 across the seven faculties at NWU-VTC (NWU, 2018). The study targeted all students, irrespective of the level, in all faculties.

3.6 SAMPLING AND SAMPLING TECHNIQUES

Bhattacharjee (2012:65) defines sampling is the process of picking a subset of a targeted population in order to make observations and statistical conclusions about that population. The study used the probability sampling methodology, in this type of sampling method, any unit in the population has an opportunity of being chosen for the sample, and this opportunity can be properly calculated (Bhattacharjee 2012:67). The most basic sort of sampling method is simple random sampling, which was adopted in this study. Simple random sampling implies that each element of the population has the same or equal opportunity of being selected from the population (Du Plooy-Cilliers et al., 2014:1380). Creswell and Creswell (2014:161) also state that the researcher selects participants for the sample in such a way that every person in the population has an equal chance of being chosen for the sample.

The sample size for this study was determined using Research Advisor's (2006) sample size calculator and a 95 percent confidence interval with a 0.05 degree of accuracy/margin of error. The sample size for this study was 365 because the sample size calculator requires that for a population size of 7500, the sample size has to be 365. The total population of registered students was 7 821, using Research Advisor's (2006) sample size calculator. Therefore, the study used 365 students as its sample because the total population was 7 821.

3.7 DATA COLLECTION INSTRUMENTS

Kumar (2014:170) claims that the manner in which a given approach is used for data collecting impacts the study's classification to a great extent. The distinction, according to Kumar (2014), the freedom and flexibility in the structure and approach to data collecting, as well as the depth and latitude afforded to a researcher in exploring for answers to a research issue, are the primary determinants. Interviews, questionnaires, observation checklists and secondary sources were some of the approaches utilised to collect data (Kumar, 2014).

A questionnaire was used in this study, as it is the most cost-effective way to reach the sample required, thus saving money and time. According to Flick (2015:134), a questionnaire aims to receive comparable answers from all respondents. According to

Leedy (2013:191), questionnaires can be given to a huge number of people, including those who live thousands of kilometers away. In circumstances where the researcher is asking sensitive questions, questionnaires can help raise the likelihood of obtaining reliable information (Kumar, 2014). Maree (2015:157) states that questionnaires have the following benefits:

- Questionnaires are generally inexpensive, and they provide the requisite anonymity in the study because there is no face-to-face interaction.
- Because the researcher and the respondents do not interact personally, it makes for greater anonymity.
- Due to the fact that respondents complete the questionnaires anonymously, they are more inclined to give more accurate answers and share their feelings.
- Because it is so easy and convenient to administer questionnaires, the researcher saves much time.
- Respondents can easily answer the questions without being monitored by the researchers.
- Questions can be coded and analysed quickly to provide a full answer to the subject under examination.

According to Creswell and Creswell (2014), questionnaires are useful for gathering respondents' reactions and feelings in a study. According to Kumar (2014:181), self-administered questionnaires, on the other hand, have the following drawbacks:

- Because not all respondents are at the same level of literacy, a questionnaire can be very limiting.
- It cannot be utilised with those who are disabled, very young or very old.
- Because of various reasons, not many respondents return the questionnaires, leading to a low response rate.
- Any concerns that may occur cannot be resolved because there is no interaction between the researcher and the respondent.
- Questionnaires might be completed by groups of respondents, which might influence the answers.
- Respondents may share the questionnaire with others who are unfamiliar with the situation.

Creswell and Creswell (2014) and Kumar (2014) state that there are disadvantages to the use of questionnaires. This was corroborated by this study as follows:

- The language used in the questionnaire was simple English to ensure that all respondents could understand it, whether in the semi-learned, learned or elite group.
- The researcher expected a large number of responses because she notified the respondents why the study was important for them and she requested them to be involved and did not hand out the questionnaires in person.
- By corresponding with the respondents at a personal level, the questionnaire administrators inspired respondents to be part of the study. The questionnaire administrators confirmed that respondents were the students from the VTC who made use of library resources.

3.7.1 Development of data collecting instrument

Maree (2015) affirms that a questionnaire should include questions that would help the researcher obtain the information they need to answer the research questions. The questionnaire was self-developed, structured in simple English and self-administered to the students of VTC. The researcher used both closed-ended questions and open-ended questions to develop the questionnaire. The questions were obtained from conceptual and empirical literature on the research topic. An introduction to the study was included in the questionnaire, as well as the ethical concepts guiding the research process. A five-point Likert scale, ranging from 5 = strongly agree to 1 = strongly disagree, was used to measure responses on the questionnaire items. The questionnaire consisted of seven sections. Section A sought the biographical information of respondents, section B focused on the use of e-resources, section C examined the knowledge of users regarding e-resources, section D identified the reasons of using e-resources, section E addressed the challenges of using e-resources, section F looked at the methods used by library staff to inform students of the availability of e-resources and section G focused on the types of e-resources and general comments.

3.7.2 Recruitment of respondents

The recruitment of respondents involves the ability to explain the significance of a study and get agreement to participate in a study (Creswell & Creswell, 2014). In the opening section of the instrument, the researcher informed the respondents about the study's major goal and objectives, and the study's contribution. The respondents were informed of the confidentiality and privacy of their comments, as well as the fact that their participation was completely optional and they could opt out at any moment. The researcher appreciated all the respondents for their cooperation and efforts during the questionnaire collection time.

3.8 RELIABILITY AND VALIDITY

According to Maree (2015:215), reliability refers to a research instrument's consistency in terms of dependability, stability, honesty and accuracy. Kumar (2014:215) emphasises that “dependability may be viewed from two perspectives: how dependable is an instrument and how unreliable is it.”

According to Kumar (2014), the first question should be about an instrument's ability to deliver reliable measurements. When a researcher gathers data, Kumar (2014) emphasises that an instrument is regarded reliable if it gives the same or similar results under the same or similar conditions. The second inquiry should be about the degree of inconsistency in an instrument's results, or the variation in measurements when a researcher collects the same set of data multiple times with the same instruments under the same or comparable settings. According to Kumar (2014), the degree of discrepancy in the various measurements indicates the level of the instrument's inaccuracy, and this 'error' shows the instrument's unreliability.

As a source of a pre-test in this study, the researcher used the pilot test, providing questionnaires to one set of people before applying the identical instrument to the complete population. In order to retain reliability, the pilot study included 19 questions that were straightforward, simple and easy to understand by the participants. About 17 questionnaires were given to the respondents at the NWU-VTC library and the results indicated that most respondents used e-resources and had knowledge of the

e-resources the library offers. The respondents were 10 undergraduates and seven postgraduate students of NWU-VTC. None of the respondents had trouble to understand and complete the questionnaire. The questionnaire took about 15 to 17 minutes to complete, which the researcher found to be acceptable.

Validity, on the other hand, relates to how well an empirical measure reflects the true meaning of the subject in question (Babbie, 2013:191). Kumar (2014:213) argues that there are two strategies available in social sciences that are used to institute the rationality of the research instrument. According to Kumar (2014), these approaches are founded on either logic that underpins the research tool's creation or statistical evidence acquired from data supplied by the instrument. According to Kumar (2014), proving validity through logic entails justifying each question in respect to the study's aims, whereas statistical processes give hard evidence by computing correlations between the questions and the outcome variables. The data collection tool should be of high quality and dependable in order to accurately gauge the respondents' thoughts. The content validity of this study was maintained by creating questions based on the prescripts of the literature review. The study ensured validity by administering questionnaires to only the students registered at the VTC and, to measure reliability and validity of the research instrument in this study, a pilot study was conducted.

3.9 DATA ANALYSIS

Data can be meaningless if it is not analysed and related to the study focus. The responses were analysed in connection with the study's objectives after the data had been collected through the questionnaire. Creswell and Creswell (2014) and Kumar (2014) support that data analysis entails an interpretation process in order to produce a thorough summary. The Statistical Package for Social Sciences (SPSS) was used to analyse the quantitative data gathered from the questionnaire (SPSS version 24). SPSS is a data management and analysis program, according to Sekaran and Bougie (2013:332). It can be used to perform advanced inferential and multivariate statistical processes such as analysis of variance (ANOVA), factor analysis, cluster analysis, and categorical data analysis, as well as descriptive statistics such as plots, frequencies, charts, and lists. For statistical analysis with SPSS, the data were coded. In this category, descriptive and inferential statistics were collected by several tests.

Data analysis for the quantitative component is outlined below for the purposes of this study:

a) Descriptive statistics

The summary of the set of data linked with the study's population was made easier by using descriptive statistics. Descriptive statistics in this study was dedicated to describing and summarising all quantitative data to pinpoint trends and patterns revealing the connections among variables. It computed the frequency of occurrences by combining distinct responses in each part into tables, graphs and charts.

3.10 ETHICAL CONSIDERATIONS

Flick (2015:32) states that research ethics address the questions pertaining to the impact of the research on the study subjects or participants. The aim of ethical consideration is to ensure that the participants understand their own role in this study. UNISA and NWU Ethics Review Committees gave ethical clearance to the researcher to continue conducting the study.

3.10.1 Confidentiality

Confidentiality is concerned with the steps taken to protect those who participated in the research, if necessary (Flick, 2015:32). The respondents were assured that their responses would be treated with the utmost confidentiality (refer to the Appendix A). The research participants' information was not disclosed in or attached to the questionnaire in the study.

3.10.2 Anonymity

The responders' identities were kept anonymous, as they were not requested to disclose their identities on the questionnaires (Appendix B).

3.10.3 Voluntary participation and exit

The researcher informed the respondents that participation was voluntary and that they could quit when they felt like it. Respondents had the right to agree to complete the questionnaire or opt out by not completing it. Voluntary participation in the study did not do any harm to the respondents of the study. A letter (Appendix A) and a consent form (Appendix C) were attached to the questionnaires distributed to the respondents.

3.10.4 Data reporting

The researcher avoided the use of inaccurate information by the respondents, unclear reports or attempts to conceal findings from the various respondents. All sources of information used in this research were duly credited.

3.11 SUMMARY

This chapter described the suitable research approach used to accomplish the study's purpose. The positivist paradigm was adopted, which emphasised true observation and logical reasoning. Again, positivism enhanced the collection of data through questionnaires and the testing of the relationships that exist among interacting variables. The quantitative research approach was employed, which facilitated efficient data collection through questionnaires, and descriptive survey research design was used. Furthermore, the population of the study was clearly stated, and sampling techniques, validity and reliability of the measuring instruments were discussed, as well as the ethical practices guiding the study. The next chapter discusses data analysis emanated from data collections instruments in this chapter.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF DATA

4.1 INTRODUCTION

This chapter is mainly concerned with the presentation and analysis of data collected by means of self-administered questionnaires. A total of 365 questionnaires were distributed and 303 were returned, thus giving a response rate of 83%. The data collected were presented and analysed in tables by employing statistical methods. It is important to note that in this study, the words 'respondents' and 'students' were used interchangeably. The presentation of the data follows the order of research questions and is in line with the research objectives. The research objectives were as follows:

- To determine how e-resources are used by students.
- To establish the level of knowledge of students in the use of e-resources
- To identify the particular e-resources used by students.
- To understand students' reasons for using e-resources
- To find out which methods were used by library staff to inform students about the availability of e-resources.
- To find out what challenges faced students when accessing e-resources.
- To recommend measures to enhance students' use of e-resources.

4.2 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

Table 1: Levels of study of respondents (N=303)

Levels	No. of responses	Percentage
1 st Year	74	24.4%
2 nd Year	59	19.5%
3 rd Year	77	25.4%
4 th Year	58	19.1%
Honours	20	6.6%
Master's	11	3.6%

PhD	4	1.3%
Total	303	100%

The study revealed that the undergraduate students were the ones who participated most in this study because out of the 303 respondents, the majority of 268 (88.4%) were undergraduates and 35 (11.6%) were postgraduate students. Third-year students participated more than other undergraduates with a total number of 77, representing 25.4% of all the students, whereas 58 (19.1%) of the students were fourth-year students. For the postgraduate students, there were 20 (6.6%) honours students, 11 (3.6%) master's students and 4 (1.3%) PhD students. Undergraduate students were the most in terms of the number of respondents who participated in this study

Table 2: Gender of respondents (N=303)

Gender	No. of responses	Percentage
Males	148	48.8%
Females	155	51.2%
Total	303	100%

Table 2 indicates that there were more female students (155) with a percentage of 51.2% than male students (148) with a percentage of 48.8% of all the students.

Table 3: Age distribution of respondents (N=303)

Age	No. of responses	Percentage
18-20 years	65	21.4%
21-30 years	181	60%
31-40 years	50	16.5%
41-50 years	7	2.3%
Over 50 years	0	0.0%

Total	303	100%
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As depicted in Table 3, the majority (181, 60%) of the respondents fell within the age bracket of 21-30 years, 65 (21.5%) belonged to the age category of 18-20 years, 50 (16.5%) were within the age category of 31-40 years and the lowest number was 7 (2.3%) of the students in the age category of 41-50 years. There were no respondents older than 50 years. In conclusion, the study showed that the majority of the participants were younger than 41 years, and the most participants were in the age range 21-30 years.

Table 4: Faculties of the respondents (N=303)

Faculties	No. of responses	Percentage
Humanities	39	12.9%
Education	60	19.8%
Theology	36	11.9%
Economics	56	18.5%
Natural and Agricultural Sciences	45	14.9%
Health Sciences	41	13.5%
Law	26	8.6%
Total	303	100%

As indicated by the findings in Table 4, 60 (19.8%) respondents came from the Faculty of Education, followed by the Faculty of Economics with 56 (18.5%) and the Faculty of Law was the lowest with 26 (8.6%) of the students that responded to the questionnaire.

4.3 USE OF E-RESOURCES

The following section provides the findings based on the first objective of the study, which was to understand students' rate of use of e-resources. To achieve this

objective, the researcher asked the respondents the following questions: “How long have you been using e-resources?”, “How frequent do you use the e-resources?”

Table 5: Percentage of length of time for which students’ have been using e-resources (N=303)

Length of time	No. of responses	Percentage
Less than six months	37	12.2%
Between six months and a year	69	22.8%
Between one and two year(s)	75	24.8%
Between two and three years	61	20.1%
More than three years	61	20.1%
Total	303	100%

Table 5 shows that 75 (24.8%) of the students have been using e-resources for between 1 to 2 years and 61 (20.1%) of the students have been using e-resources for between 2 and 3 years. The findings also revealed that 61 (20.1%) of the students have been using e-resources for more than 3 years, 69 (22.8%) have been using e-resources for between 6 months and a year, and 37 (12.2%) could selected less than six months. The study showed that most (24.8%) of the respondents have been using e-resources for 2 years.

Table 6: Frequency of the usage of the e-resources by the respondents (N=303)

Options	No. of responses	Percentage
Daily	63	20.8%
2-3 times a week	167	55.1%

Once or twice a month	59	19.5%
Once or twice a year	14	4.6%
Total	303	100%

Table 6 shows that 63 (20.8%) of the students used e-resources daily, 167 (55.1%) students used e-resources 2 to 3 times a week, 59 (19.5%) of the students used e-resources once or twice a month and 14 (4.6%) of the students used e-resources once or twice a year. This study revealed that e-resources were used by most students 2 to 3 times a week.

4.4 KNOWLEDGE OF USERS REGARDING E-RESOURCES

The second objective of this study was to establish the level of knowledge of students in using e-resources. To achieve this objective, the researcher asked students the following questions: “Do you have access to internet facilities?”, “How do you rate the level of your knowledge in using e-resources generally?”, “How do you rate your level of knowledge in using specific e-resources?”

Table 7: Percentage of students’ access to internet facilities (N=303)

Options	No. of responses	Percentage
Yes	243	80.2%
No	60	19.8%
Total	303	100%

Table 7 shows that the majority (243, 80.2%) of the students had access to the internet, whereas 60 (19.8%) of the students did not have access to the internet.

Table 8: Students' level of knowledge in using e-resources generally (N=303)

Ratings	No. of responses	Percentage
Excellent	93	30.7%
Good	145	47.8%
Fair	52	17.2%
Poor	13	4.3%
Total	303	100%

Table 8 reveals that the majority (145: 47.85%) of the students were good and knowledgeable in using e-resources, 13 (4.29%) had poor knowledge of the use of e-resources, 93 (30.69%) had excellent knowledge of the use of e-resources and 52 (17.16%) had a fair knowledge of the use of e-resources. Generally, the findings revealed that students had a good knowledge of the use of e-resources

Table 9: Level of students' knowledge in using specific e-resources (N=303)

Options	Ratings	No. of responses	Percentage
Online databases	Excellent	131	43.2%
	Good	94	31.0%
	Fair	23	7.6%
	Poor	4	1.3%
	No response	51	16.8%
E-books	Excellent	106	35.0%
	Good	76	25.1%
	Fair	34	11.2%
	Poor	10	3.3%
	No response	77	25.4%
E-journals	Excellent	128	42.2%

	Good	35	11.6%
	Fair	18	5.9%
	Poor	16	5.3%
	No response	106	35.0%
Institutional repository	Excellent	99	32.7%
	Good	32	10.6%
	Fair	22	7.3%
	Poor	36	11.9%
	No response	114	37.6%
E-theses	Excellent	95	31.4%
	Good	40	13.2%
	Fair	20	6.6%
	Poor	31	10.2%
	No response	117	38.6%
LibGuides	Excellent	112	37.0%
	Good	34	11.2%
	Fair	16	5.3%
	Poor	32	10.6%
	No response	109	36.0%
Library web page	Excellent	138	45.5%
	Good	36	11.9%
	Fair	16	5.3%
	Poor	25	8.3%
	No response	88	29.0%
CDs & DVDs	Excellent	65	21.5%
	Good	35	11.6%
	Fair	62	20.5%
	Poor	28	9.2%

	No response	113	37.3%
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Table 9 reveals that 138 (45.54%) of the students rated their level of competency in using the library web page as excellent, and 25 (8.3%) of the students had a poor level of competency in using the library web page. On the other hand, the students did use online databases, as 131 (43.2%) of them rated their level of competency as excellent and only 4 (1.3%) rated their level of competency as poor. From Table 9, 128 (42.2%) of the students rated their level of competency in using e-journals as excellent, 35 (11.6%) of the students stated that their competency was good, 18 (5.9%) of the students rated their competency as fair and 16 (5.3%) rated their level of competency as poor. Table 9 also indicates that 106 (35.0%) of the students stated that their level of competency in using e-books was excellent, while 10 (3.3%) of the students agreed that their level of competency was poor. The findings further revealed that 117 (38.6%) of the respondents did not respond to the e-theses option and about 51 (16.8%) of them did not respond to online databases. The findings revealed that the students had excellent knowledge of the use of online databases and e-journals.

4.5 IDENTIFYING PARTICULAR E-RESOURCES USED BY STUDENTS

The third objective of this study was to identify the particular e-resources used by students. To achieve this objective, the following questions were asked by the researcher: “Which formats of library resources do students prefer to use?”, “Which types of e-resources you use often?”, “When you visit your library, which specific e-resources do you often use?” and “Which of the following online databases do you use most often?”

Table 10: Formats of library resources used by students (N=303)

Formats	No. of responses	Percentage
Print resources	63	20.8%
E-resources	189	62.4%
Both resources	51	16.8%

Total	303	100%
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The findings in Table 10 indicate that the majority (189: 62.4%) of the students preferred e-resources, 63 (20.8%) of the students preferred print resources and 51 (16.8%) of the students preferred both resources. The findings revealed that most students preferred to use e-resources to print resources.

Table 11: Types of or specific e-resources often used by students (N=303)

Options	Ratings	No. of responses	Percentages
Online databases	Very often	174	57.4%
	Often	93	30.7%
	Sometimes	12	4%
	Never	2	0.7%
	No response	22	7.3%
E-books	Very often	118	38.9%
	Often	67	22.1%
	Sometimes	39	12.9%
	Never	3	1.0%
	No response	76	25.1%
E-journals	Very often	131	43.2%
	Often	26	8.6%
	Sometimes	11	3.6%
	Never	17	5.6%
	No response	118	38.9%
E-theses	Very often	84	27.7%
	Often	35	11.6%
	Sometimes	16	5.3%
	Never	32	10.6%

	No response	136	44.9%
Others	Very often	0	0 %
	Often	0	0 %
	Sometimes	0	0 %
	Never	0	0 %

The findings showed that more than half (174: 57.4%) of the students used online databases very often and 131 (43.2 %) of the students used e-journals. The findings also showed that only 2 (0.7%) of the students had never used online databases and 3 (1.0%) of the students had never used e-books. Furthermore, 22 (7.3%) of the respondents chose not to respond to the question on online databases and 136 (44.9%) did not respond to e-theses. The findings revealed that the specific e-resources used very often by students included online databases and e-journals.

Table 12: Specific online databases often used by students (N=303)

The researcher sought to determine the frequency in which students used particular databases in the library.

Options	Frequency	No. of responses	Percentage
LexisNexis	Very often	50	16.5%
	Often	37	12.2%
	Sometimes	41	13.5%
	Never	48	15.8%
	No response	127	41.9%
Emerald insight	Very often	42	13.9%
	Often	34	11.2%
	Sometimes	55	18.2%
	Never	31	10.2%
	No response	141	46.5%

Google scholar	Very often	189	62.4%
	Often	77	25.4%
	Sometimes	25	8.3%
	Never	1	0.33%
	No response	11	3.6%
Jstor	Very often	112	37.0%
	Often	31	10.2%
	Sometimes	13	4.3%
	Never	13	4.3%
	No response	134	44.2%
SABINET	Very often	58	19.1%
	Often	45	14.9%
	Sometimes	22	7.3%
	Never	30	9.9%
	No response	148	48.8%

The findings in Table 12 showed that 189 (62.4%) respondents used Google Scholar very often, whereas only 1 (0.3%) student had never used Google Scholar. It was also deduced from the table that about 3.6% respondents did not respond to the question about Google Scholar. The findings also showed that 112 (37.0%) of the students used Jstor very often, 13 (4.3%) used it sometimes and 13 (4.3%) had never used Jstor. The table also showed that 42 (13.9%) respondents used Emerald Insight very often, whereas 31 (10.2%) of the students had never used Emerald Insight. A total of 58 (19.1%) students used SABINET very often, 22 (7.3%) used it sometimes and 148 (48.8%) indicated that they had never used SABINET. The study also showed that 50 (16.5%) of the students used LexisNexis very often, these were likely to be law students. Overall, more respondents used Google Scholar than other e-resources.

4.6 REASONS FOR USING E-RESOURCES

The fourth objective of this study was to understand the students' reasons for using e-resources. To achieve this objective, it was important for the researcher to ask questions that included perceived reasons for general use of e-resources by students: "What are reasons for specific use of e-resources by students?"

Table 13: Perceived reasons for general use of e-resources by students (N=303)

Options	No. of responses	Percentage
Lot of information	23	7.6%
Save time/space/ easy to carry	47	15.5%
Inexpensive to share/multi-access	24	7.9%
Long lifespan	6	2.0%
Recent information	11	3.6%
Easy navigation/browse	81	26.7%
Less eye straining	7	2.3%
No need of computer/internet	17	5.6%
Cheap to access/availability of titles	10	3.3%
User-friendly in paging	30	9.9%
Both user friendly and effective	37	12.2%

Availability of information in both resources	10	3.3%
Total	303	100%

The study showed that 81 (26.7%) of the students preferred e-resources because they are easy to browse or navigate. Again, 47 (15.5%) of the students stated that they preferred e-resources because they are easy to carry (e-resources) and they save space; the space may be in their residence or in the library. Furthermore, 37 (12.2%) of the students indicated that they preferred both print and e-resources because they find them user-friendly. Generally, the findings of this study revealed that the respondents' opinions or perceptions varied on the reasons for their general use of e-resources.

Table 14: Reasons for specific use of e-resources by students (N=303)

Options	No. of responses	Percentage
Research	59	19.5%
Studies/Assignments	222	73.3%
Gain knowledge	22	7.3%
Total	303	100%

Table 14 shows the reasons for students' use of e-resources. The findings showed that 222 (73.3%) of the students used e-resources for their assignments, which implies that most of the students were undergraduates. On the other hand, 59 (19.5%) of the students used e-resources for their research, which suggests that they may have been postgraduate students and fourth-year students. Furthermore, 22 (7.3%) of the students used e-resources to gain knowledge. These findings indicated that about 92.5% of the students used e-resources for research and assignments, whereas gaining knowledge constituted the least of the reasons for students' use of e-resources. Most of the respondents used e-resources for their studies/assignments.

4.7 METHODS OR STRATEGIES EMPLOYED TO INFORM STUDENTS ABOUT THE AVAILABILITY OF E-RESOURCES IN THE LIBRARY

The fifth objective of this study was to find out which methods were used by library staff to inform students about the availability of e-resources. To achieve this objective, the researcher asked the respondents the following question: “How did you know about the availability of e-resources in the library?”

Table 15: Methods by which students are informed of the availability of e-resources in the library (N=303)

Methods of awareness	No. of Responses	Percentages
Librarians	153	50.5%
Friends	130	42.9%
Lecturers	151	49.8%
Self-help	124	40.9%
Displays within library	102	33.7%
Trainings by librarians	111	36.6%
Library website	99	32.7%

The respondents were asked to provide channels through which they found out about the availability of the e-resources in the library. Table 15 revealed that 153 (50.5%) of the students knew about the availability of e-resources that are in the library through the librarians and 151 (49.8%) of the students indicated that they learnt about e-resources through their lecturers. The findings also showed that 130 (42.9%) of the students learnt about e-resources through their friends, 124 (40.9%) learnt about e-resources' availability through self-help and 111 (36.6%) of the students learnt about e-resources through training by the librarians. Finally, 102 (33.6%) of the students were informed about the availability of e-resources through library displays within the library and only 99 (32.7%) of the students were informed about their availability

from the library website. The findings revealed that the students were informed about e-resources through their librarians, lecturers and friends.

4.8 CHALLENGES FACED BY STUDENTS WHEN ACCESSING E-RESOURCES

The sixth objective of this study was to find out which challenges were faced by students when accessing e-resources. In order to achieve this objective, the researcher asked the respondents the following question: “Which challenges have you encountered when using e-resources?”

Table 16: Challenges encountered by students in accessing e-resources (N=303)

Challenges	No. of responses	Percentage
Slow Wi-Fi/Network problems	66	21.8%
Shortage of computers/ computer illiterate	35	11.6%
No challenges	97	32%
Downloading/retrieval/searching skills	91	30%
Referencing	14	4.6%
Total	303	100%

The findings showed that 97 (32%) of the students did not experience any challenges in accessing e-resources while 91 (30%) of the students experienced challenges with searching skills and retrieval of information, as well as problems with downloading information. In conclusion, the findings showed that while 32% of the respondents did not experience any challenge using the e-resources, 30% of the respondents encountered various challenges such as downloading, retrieval and searching skills, and slow Wi-Fi or network problems. Most of the students did not encounter challenges when accessing e-resources according to the findings.

4.9 MEASURES TO ENHANCE STUDENTS' USE OF E-RESOURCES

The seventh objective of this study was to recommend measures to enhance students' use of e-resources. In achieving this objective, the researcher asked the respondents the following questions: "Which strategies can help to enhance access and use of e-resources by users?", "Are users trained in how to access e-resources?", "Which of the following skills do you think are needed to use e-resources effectively?"

Table 17: Strategies or measures to enhance the use of e-resources as perceived by the students (N=303)

Strategies/Measures	Ratings	No. of responses	Percentages
Information literacy	Very likely	182	60.1%
	Likely	50	16.5%
	Unlikely	5	1.7%
	Never	1	0.3%
	No response	65	21.5%
Institutional repository	Very likely	122	40.3%
	Likely	24	7.9%
	Unlikely	21	6.9%
	Never	8	2.6%
	No response	128	42.2%
Library orientations	Very likely	205	67.7%
	Likely	24	7.9%
	Unlikely	1	0.3%
	Never	2	0.7%
	No response	71	23.4%
Open Access	Very likely	136	44.9%
	Likely	27	8.9%
	Unlikely	4	1.3%
	Never	3	1%
	No response	133	43.9%
	Very likely	94	31.0%

OPAC	Likely	42	13.9%
	Unlikely	13	4.3%
	Never	7	2.3%
	No response	147	48.5%

Table 17 shows the measures for the effective use of e-resources by students. The findings revealed that 205 (67.7%) of the students stated that a library orientation strategy would most likely help them to use e-resources effectively and 182 (60.1%) stated that information literacy would most likely help them to use e-resources effectively. The findings also showed that 1 (0.3%) student was of the opinion that information literacy never helped them to use e-resources, whereas 2 (0.7%) students stated that library orientation never helped them to use e-resources. Also, 50 (16.5%) of the students were of the view that information literacy would likely help them to use e-resources and the other 42 (13.9%) stated that OPAC might likely help them to use e-resources. About 65 (21.5%) did not choose information literacy, whereas 147 (48.5%) did not choose OPAC. The study also revealed that for 136 (44.9%) students, open access was very likely to help them to use e-resources, whereas 122 (40.3%) felt that institutional repository was very likely to help them to use e-resources. Eight (92.6%) students mentioned they had never used institutional repository and 3 (1%) said they had never used open access as measure to assist in using e-resources. The findings showed that measures such as library orientation, information literacy and open access were very likely to enhance students' use of e-resources.

Table 18: Training on how to use e-resources (N=303)

Options	No. of responses	Percentage
Yes	204	67.3%
No	99	32.7%
Total	303	100%

Table 18 revealed that the majority of 204 (67.3%) students had received training in how to use e-resources, whereas 99 (32.7%) of the students did not receive any

training. The findings have shown that the majority of students did receive training on how to use library e-resources in this study.

Table 19: Skills needed in using e-resources (N=303)

Options	No. of respondents	Non-respondents	No. of responses	Percentages
Information literacy skills	303	93 (30.7%)	210	69.3%
Computer literacy skills	303	57 (18.8%)	246	81.2%
Information retrieval skills	303	108 (35.6%)	195	64.4%
Digital literacy skills	303	184 (60.7%)	119	39.3%
Other	303	302 (99.7%)	1	0.3%

Table 19 revealed that the majority of 246 (81.2%) students needed computer literacy skills to enable them use e-resources on their own. A total of 210 (69.3%) of the students said they needed information literacy skills and 195 (64.4%) of the students said they needed information retrieval skills to use e-resources. Fifty-seven (18.8%) respondents did not respond to computer literacy skills and 184 (60.7%) did not respond to digital literacy skills. Overall, computer skills, information literacy skills and information retrieval skills were found to be the skills needed by students to use e-resources.

4.10 SUMMARY OF MAJOR FINDINGS

The major findings of this study included the following:

- a) The length of time of e-resources use by the students was found to be 2 years and more, and the frequency of use of e-resources among the students was found to be 2 to 3 times a week.

- b) Generally, the findings revealed that students had a good knowledge of the use of e-resources. Specifically, the students were found to have excellent knowledge of the use of online databases and e-journals.
- c) The findings revealed that the majority of the respondents preferred to use e-resources. In specific terms, the results also showed that the students used online databases and e-journals very often. Furthermore, Google Scholar was found to be the only online databases that students used very often.
- d) In general, the findings of this study revealed that the respondents' opinions or perceptions were varied on the reasons for their general use of e-resources. Specifically, the students used e-resources for their studies/assignments.
- e) The students learnt about e-resources from their librarians, lecturers and friends.
- f) Approximately 68% of the respondents encountered different challenges while using e-resources such as downloading, retrieval and searching skills, and slow Wi-Fi or network problems.
- g) The findings showed that measures such as library orientation, information literacy and open access were very likely to enhance students' use of e-resources. Furthermore, computer skills, information literacy skills and information retrieval skills were found to be the skills needed by students to enhance their use of e-resources.

4.11 SUMMARY

This chapter dealt with the presentation of the findings of the data collected through questionnaires from the NWU-VTC students. The findings were presented in the order of the research questions in relation to the objectives of this study, or by using the following themes or headings derived from the research questions: demographic and information of the respondents, usage of e-resources, knowledge of users regarding e-resources, identifying the particular e-resources used by students, reasons for using e-resources, methods used by library staff to inform students of the availability of e-resources and types of e-resources, and measures that enhance students' use of e-resources. The next chapter discusses the findings of this study that emanated from this chapter.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 INTRODUCTION

This chapter provides a discussion of the findings in the order of the research objectives of the study. All the findings were corroborated with the extant literature or previous findings in this area of research. This chapter is organised around the following specific research objectives of the study:

- To determine how students use e-resources
- To establish the level of knowledge of students in using e-resources
- To identify the particular e-resources used by students
- To understand students' reasons for using e-resources
- To find out which methods or strategies were used by library staff to inform students about the availability of e-resources
- To find out which challenges were faced by students when accessing e-resources
- To recommend measures to enhance students' use of e-resources

5.1.1 Demographic information of the respondents

Out of the 303 students who responded to the questionnaire, the majority of 268 (88.4%) were undergraduate students. Olatoye et al. (2019:94) study observed that the undergraduate students were in the majority in the utilization of e-information resources. The study revealed that majority of female students 155 (51.3%) constituting the bigger number of respondents against 148 (48.7%) male students. According to Samson (2014:3), female students increase their usage more than male students. The study also revealed that about 181 (59.6%) students were between the ages of 21 and 30 years and the majority of first-year students participated in this study. In the study done by Nair and Ts on the awareness and domain of specific e-resources, the majority of the respondents were younger than 30 years; therefore, there is relationship between the study of Nair and Ts (2020) and this study. Gakibayo and Okello-Obura (2013) analysis indicated that the age range of the respondents were between 21-30 years were majority of respondents (119,55.1%) and 70 (32.4%)

of them were 20 years and below together with 31-40 years age. This study focused on the effectiveness of e-resources and the majority of the respondents were below the age group of 30 years. According to Ani et al. (2015:4), most respondents came from the Faculty of Education and Economic Sciences, which supports this study, as most of the respondents were from the Faculty of Education with 60 (19.9%) students, followed by the Faculty of Economics. The findings of the study were expected as the university accepted students from 18 years and older.

5.1.2 Use of e-resources

This study found that 75 (24.8%) of the respondents have been using e-resources for 1-2 years. The findings showed that the majority of these students were relatively inexperienced in terms of using e-resources; therefore, emphasising the importance of teaching them how to access these resources. The study also revealed that most respondents accessed e-resources 2 to 3 times a week, which was expected because they have studies to do and they need information. Khowaja and Fatima (2019:8) found that the majority of students used e-resources occasionally, followed by those who used them daily. Dwivedi (2022:9) study investigated frequency usage of e-resources and revealed that majority of the respondents were utilising e-resources on daily basis. Students used e-resources often but not on the daily basis, as they have classes to attend in different subjects. Respondents accessing e-resources 2 to 3 times a week showed that they did use them and they were aware of them.

5.1.3 Level of students' knowledge on use of e-resources

This study also tried to rate the knowledge of students in using e-resources. The responses obtained from the study showed that the majority (80.2%) of students had knowledge of using the databases. The revelation of the study was very positive, which was expected, as users had knowledge of the e-resources in the library. The basic function of any university is to conserve the existing knowledge, transmit knowledge through teaching and create new knowledge through research (Daramola, 2016). Girakaduwa (2019) states that the majority of library users (students) are aware of the usefulness of e-resources and services provided by the library.

The study also revealed that the majority of the respondents knew about e-resources such as library web page, online databases and e-journals. This was expected, as students had knowledge of e-resources and utilised the library webpage. Anyim (2020:108) study revealed that majority of the students were very satisfied with e-journals. This shows that individuals prefer different e-resources. It was also revealed that students were aware of the resources and 138 respondents utilised the resources from the library webpage. Girakaduwa (2019) also states that students mostly use library web resources (website) and OPAC. Furthermore, the study sought not only to determine their level of knowledge about these available databases, but also to assess the frequency with which they used these resources.

The proliferation of the awareness of the value of information in human activities necessitated the provision of more diversified, easier and upgraded services to meet the growing information needs of the users (Alegbeleye, Madukoma & Sahabi, 2019). In their study on 'knowledge and use of e-resources by medical students at Al-Jouf University in Saudi Arabia'. Ahmed and Al-Reyayee (2017) found that many students were aware of the availability of the e-resources in the library. This current study also revealed that the majority of the respondents were aware of the e-resources available at the NWU-VTC library.

5.1.4 Identifying particular e-resources used by students

The findings revealed that 174 respondents used online databases more often than other e-resources. Sahabi et al. (2020:83) found that most students preferred to access information from Google Scholar and other internet-based and web-based databases, and they use these methods more frequently. The e-resources are the main sources of information that deliver the collection of information in the form of full-text databases, e-journals, image collections, multimedia in the form of CDs, tape, the internet and web technology. Yuan et al. (2018) analysed e-book usage at a university campus and found that the availability of scholarly books in an electronic format did not replace the use of their printed versions.

According to Kumar et al. (2019), patrons found e-resources so much easier and faster to use that they may reject the use of print documents as a means of access. Singh

(2018:24) also states that e-resources have several advantages over print resources, but Samzugi (2019:9) found that respondents would prefer print over the electronic formats for all courses when they want to achieve deeper learning outcomes, with only a few preferring e-resources. The findings showed that Google Scholar was the most frequently used database with 189 respondents having reported using Google Scholar very often. The findings indicated that printed resources still formed the core of academic research, despite the evolution of e-resources. In contrast, this study found that the majority of VTC students prefer e-resources to print.

5.1.5 Students' reasons for using e-resources

This study attempted to find out why the students used e-resources and found that 222 (73.3%) of the respondents used e-resources for their assignments; meaning they used it for academic or personal reasons and to update their knowledge with new information in their fields and for online application or registration. The study revealed that students need information to complete their assignments. Ankrah and Acheampong (2017) agree that students are fairly aware of e-resources and use it to conduct their own research and perform their assignments. Singh et al. (2018) state that the reason for using e-resources is that it will help students to keep abreast of the latest information. Kundu (2018:269) stated that respondents were asked to give reasons for using e-resources, and majority of 207 (52%) respondents in the study said that they utilised e-resources to prepare for their class notes. This shows that students had many reasons for using e-resources and that support them in learning. The fact that many students move away from printed materials and rather use e-resources showed that they realised that e-resources are very important to assist them to find the information they need and in instructional delivery that supports learning, teaching and research activities. Most undergraduate students use e-resources to do their assignments and to obtain relevant academic materials through personal searches. The previous studies above support the findings of this study, as the majority of students use e-resources to do their assignments.

Many library users prefer e-resources to printed resources for varying reasons, including that they are easier to search, access, store, retrieve, share and use information. Therefore, it is important for the library to encourage the library users to

use the e-resources more to derive the most benefits from them. According to Al-Shboul and Abrizah (2014), many scholars in humanities did not want to use e-resources in their studies and research because they did not yet trust ICTs. However, overall, scholars see the benefits that e-resources could hold and realise that these resources could improve their research productivity (Ani et al. 2015).

5.1.6 Methods or strategies used by library staff to inform students about the availability of e-resources

The study found that 153 (50.5%) of the respondents knew about the availability of the e-resources from their librarians. This showed that librarians are the most important component of the library in the provision of information services and resources to the students. Librarians played a role in informing students about e-resources, which was expected as they offer information literacy to students. The study also showed that library orientation (205: 67.7%) and information literacy (182: 60.1%) could assist students to obtain easier access to and use of e-resources. Azhar and Hanib (2019) state that librarians must emphasise to students the aspect of how to search for information. The emphasis can be through consultation in identifying their problem when searching the e-resources using the right search tools and techniques. To have effective access to the rapidly increasing number of e-resources, Makgahlela and Bopape (2014:6) mention that it is important for students to acquire the necessary skills to locate, select and use the different e-resources. Orientation and training in the use of ICTs and how to access the various databases should be extended to newly registered students in every field of study at the institution.

5.1.7 Challenges faced by students when accessing e-resources

This study investigated the challenges that students faced when accessing e-resources. The findings indicated that 91 (30%) of the respondents experienced challenges with searching skills and retrieval skills and, therefore, need training from librarians. Ganesh and Rajendran (2021:9) state that the majority of the respondents experienced challenges in finding the relevant details, possibly due to a lack of searching skills. Baro-Emmanuel, Edewor and Sunday also state that a lack of skills is one of the challenges of using web-based tools to create awareness in the academic

libraries. Again, this study found that 35 (11.6%) of the respondents felt they needed computer literacy skills for them to be effective in using e-resources. It is clear from this study that librarians must be at the forefront of educating their users in how to use e-resources effectively. According to the study conducted by Akuffo and Budu (2019) on the use of e-resources by students in a premier postgraduate theological University in Ghana, students encountered multiple problems in accessing e-resources. Such problems included access problems, literacy and search problems and other problems. These authors also found that ICTs skill sets and assistance were not adequate to ensure easy access. Ugwu and Orsu (2017) revealed that obstructing factors on effective utilisation of e-resources by students include a large amount of irrelevant information, the need to filter search results, download delay, failure to find information, insufficient or lack of search skills, high cost of access, inaccessibility of some electronic resources, and difficulties. Some other students were not able to filter the results that they retrieved from their information they searched. These findings indicated that there is a great need for information literacy training given to students by librarians in how to use library e-resources.

5.1.8 Measures to enhance students' use of e-resources

The findings of this study revealed that the majority of respondents felt that they require computer literacy (81.2%) to be able to utilise e-resources effectively. Kwaghga et al. (2019:4) mention that the responsibility of university libraries is not only to provide e-resources, but also to provide the necessary skills that are demanded in this information age through programmes such as the use of library and study skills. Information cannot be fully retrieved if students are unfamiliar with how to operate the information system. Students must have adequate skills in using library e-resources.

5.2 SUMMARY

This chapter discussed the findings of the study that were obtained from the respondents through self-administered questionnaires. All the responses were discussed and corroborated with the findings in the order of the research objectives. The study revealed that most respondents were aware of e-resources but library professionals have to market library services to users, especially e-resources. The

study gathered that the lack of use of e-resources in the library is because of the conditions of the infrastructural facilities such as not enough computers, slow internet and a lack of information technology skills. The next chapter presents an overview of the study, a summary of the study, conclusions and recommendations, as well as areas for future research.

CHAPTER SIX

OVERVIEW, SUMMARY OF THE MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

Chapter five presented the discussion of the findings obtained in the empirical study. This chapter presents an overview of the study and the summary of the main findings of the study and recommendations are made for the improvement of the use of e-resources by students in the academic library of the NWU-VTC. The conclusions were drawn from the findings of the study. Suggestions for future studies or research are also made.

6.2 OVERVIEW OF THE STUDY

Chapter one of this study focused on the introduction and background of the study. It was mentioned in the problem statement that the NWU offers e-resources collection in its library and little or no effort is made by the students to use it, and this served as the motivation for conducting this study. Other topics such as the purpose of the study, research objectives and research questions, the motivation of the study, research methodology, delimitations of the study, definitions of key terms, dissemination of research findings and chapter exposition were explained vividly.

In chapter two, the literature review was presented. The chapter presented topics such as types and use of e-resources, knowledge of users, and reasons for using e-resources, challenges of accessing e-resources, and strategies to enhance students' use of e-resources.

Chapter three presented the research methodology of the study. The study followed a post-positivist paradigm, which led to new knowledge being created by breaking ideas up into smaller pieces, and this was tested through research questions. A quantitative research approach and a descriptive survey research design were adopted. Other topics presented in this chapter included the research population and sampling

technique, data collecting instruments, data analysis, reliability and validity of data collecting instruments, and all ethical considerations applied to the study.

Chapter four presented the findings of the empirical data collected from the respondents through the questionnaires. The chapter presented the biographical information of the respondents, which was followed by the findings obtained in the order of the research questions or objectives. In this regard, the descriptive statistics were presented. The descriptive statistics presented the set of data associated with the population of the study, and the responses in each section were presented in tables and charts. The frequencies of occurrences were also calculated.

Chapter five presented the interpretation of the findings. The findings were presented in the order of the research questions/objectives, which had to determine how students used e-resources, find the level of knowledge of students in using e-resources, identify the particular e-resources used by students, understand students' reasons for using e-resources, find out which methods were used by library staff to inform students about the availability of e-resources, find out what challenges students faced when accessing e-resources and recommend measures to enhance students' use of e-resources.

Finally, the overview of the study was presented in chapter six, as well as a summary of the main findings and conclusions. Thereafter, a recommendation was made to the NWU and the students to enhance the use of e-resources by students at the academic library of the NWU-VTC. Finally, suggestions were made for future or additional studies to improve the use of e-resources.

6.3 SUMMARY OF MAIN FINDINGS

This section strictly presents the summary of findings obtained from the seven research objectives of this study. The summary is based on the following seven themes:

- Students' use of e-resources
- Level of students' knowledge of the use of e-resources

- Identifying the particular e-resources used by students
- Students' reasons for using e-resources
- Methods or strategies used by library staff to inform students that e-resources are available to them
- Challenges faced by students when accessing e-resources
- Measures to enhance students' use of e-resources

6.3.1 Usage of e-resources by students

This objective investigated how students at the NWU-VTC use e-resources in their studies. This objective was included in this study to verify the claims as stated in the problem statement, which revealed that there is low usage of e-resources by students at the NWU-VTC. The findings obtained in this section indicated the following:

- It was deduced from the study that 20.1% of the students have been using e-resources for more than three years, but at a very low pace.
- Regarding the use of e-resources, the findings indicated that few (12.2%) students used e-resources frequently and this demanded the attention of the university to implement measures to promote the adoption of e-resources.
- Finally, the findings showed that 24.8% of the students were inexperienced in using e-resources in their academic endeavours and this emphasised the importance of encouraging all the students on the relevance of e-resources in academia.

6.3.2 Level of students' knowledge of the use of e-resources

The second objective investigated the level of knowledge of students in using e-resources. This objective was included to investigate whether the low level of knowledge of students in using e-resources is compounded by their lack of knowledge about the significance of e-resources. Findings obtained from this section indicated the following:

- Most (80.2%) of the students had access to internet facilities and relatively good knowledge of how to use e-resources for their academic pursuit.

- Furthermore, as students in the study indicated that they had good knowledge of using electronic materials in their academic pursuit. This will make it easy for NWU-VTC library to encourage students to utilise e-resources.

6.3.3 Identifying the particular e-resources used by students

The third objective measured the particular e-resources used by students in their academic endeavours. This objective was included to investigate the particular e-resources used by students and the reasons behind the use of these.

- Findings from this section affirmed that more than half of the students (57.4%) used online databases more often than others.
- Other e-resources used frequently by students included e-journals (43.2%), e-books (38.9%) and e-theses (27.7%).
- The respondents further indicated that they used more (62.4%) e-resources than printed materials (20.8%).
- Some of their reasons for adopting e-resources included that e-resources are easy to navigate or browse, they save time and space, they are easy to carry and its ability to possess user-friendly qualities or functionalities and its effectiveness.
- Regarding the frequency in the use of electronic materials, the findings indicated that Google Scholar was the (62.4%) database that was most frequently used by the students (62.4%); this was followed by Facebook and the library's web page.

6.3.4 Students' reasons for using e-resources

This fourth objective sought to understand students' reasons for using e-resources. This objective was included in this study to investigate the students' main reasons for adopting the use of e-resources in their academic pursuit. In this section, the students were asked to indicate the e-resources they are likely to consult whenever they go to the university library.

- Most of the students (26.7%) stated that they preferred e-resources because they are easy to navigate or browse (e-resources) and some (15.5%) said they save space; the space may be in their residence.
- Other studies revealed that students used e-resources to prepare for the coming lectures and this study findings obtained from the investigation revealed that the majority of the students' main reason for using e-resources is to engage adequately with their studies.

6.3.5 Methods or strategies used to inform students about the availability of e-resources

The fifth objective investigated the methods used to inform students about the availability of e-resources. This objective was included in this study to understand the methods or strategies adopted by the university to inform students about the adoption of e-resources provided.

- The outcome of this investigation disclosed that librarians and the lecturers were able to alert students about e-resources.
- Other measures adopted to inform students were through friends (42.9%), friends also played a role on sharing the experience of e-resources awareness.

6.3.6 Challenges faced by students when accessing e-resources

The sixth objective of this study investigated the challenges faced by students when accessing e-resources at the NWU-VTC. This objective was included to understand the challenges faced by the students in using e-resources and to know the skills needed to access e-resources.

- Searching skills was a challenge to some students according to the findings of this study.
- Other challenges identified included slow Wi-Fi or network problems (21.8%), shortage of computers/computer illiteracy and referencing issues (11.6%).
- The study identified that the most important skills needed to access e-resources are computer literacy skills (11.6%), information retrieval skills (64.4%) and digital literacy skills (39.3%).

6.3.7 Measures to enhance students' use of e-resources

This was the last objective and it investigated the measures to enhance students' use of e-resources at the NWU-VTC. This objective was included to make recommendations on how to enhance the effective use of e-resources provided by the university.

- The major findings obtained from this section revealed that most students (67.7%) needed library orientation to be able to excel in their knowledge and use of e-resources.
- Other measures to enhance the use of e-resources as indicated by the students included enhancing their information literacy skills (60.1%).
- Findings also indicated that most (67.3%) students are trained in how to use e-resources and this has increased their competence in using e-resources.

6.4 CONCLUSIONS

The research objectives were used to reach the conclusions of the study, as indicated by the findings.

6.4.1 Usage of e-resources by students

The first objective of the study was to investigate the use of e-resources by students at the NWU-VTC library. The study concluded that the use of e-resources at the NWU-VTC library was not adequate as most of the students were inexperienced in using e-resources. The NWU-VTC library invested in a service that was not used as often as it had to be.

The investment made by the library was not very effective as students were not utilising e-resources that much.

6.4.2 Level of students' knowledge of the use of e-resources

The second objective of the study was to investigate the students' knowledge in the use of e-resources at the NWU-VTC library. The study found that students had a lot of knowledge in the use of e-resources and they had access to the internet in order to access e-resources in the NWU-VTC library. The NWU-VTC library must invest in providing computers in the library laboratory for students as they have knowledge in using e-resources.

6.4.3 Identifying the particular e-resources used by students

The third objective of the study was to identify particular e-resources used by students at the NWU-VTC library. The study found that some e-resources were identified and students indicated the ones they were most familiar with, which were online databases, e-journals, e-books and e-theses. Students did mention certain e-resources which the NWU-VTC library have subscribed to for years, which indicated that the study was related to their needs academically.

6.4.4 Students' reasons for using e-resources

The fourth objective of the study was to discover the reasons why e-resources were used at the NWU-VTC library. The study concluded that one of the reasons why most students used e-resources at the NWU-VTC library was to be able to do or complete their studies and to gain knowledge in their field of the study. Students reason have shown that they were keen to do their studies and NWU-VTC library had e-resources that support them.

6.4.5 Methods or strategies used to inform students about the availability of e-resources

The fifth objective of the study was to investigate the methods or strategies used to inform students about the availability of e-resources at the NWU-VTC library. The findings concluded that students were fully informed of which e-resources the NWU-

VTC library had. Library staff played their role in informing students regarding the e-resources but they still need to come up with other strategies to inform students.

6.4.6 Challenges faced by students when accessing e-resources

The sixth objective of the study was to investigate challenges experienced by students regarding e-resources at the NWU-VTC library. The study concluded that students did not face many challenges. Even though there were not many challenges, there was still a need to provide training in the use of computers for students at the NWU-VTC library, as other students struggled to download or retrieve resources online. The NWU-VTC library staff, together with information technology, can collaborate in training students on computer literacy to empower them.

6.4.7 Measures to enhance students' use of e-resources

The seventh objective of the study was to investigate measures used to enhance students' use of the NWU-VTC library. The study concluded that certain measures had to be put in place to enhance students' use of e-resources, and these measures were orientation in library use and library information literacy training. Library staff also need to enhance the effectiveness of current awareness of students regarding e-resources.

6.5 RECOMMENDATIONS OF THE STUDY

The recommendations of this study are made to the librarians and the students of the NWU-VTC library.

6.5.1 Recommendations to the NWU library

The recommendations made to the NWU library are as follows:

- The NWU library should always create awareness in and educate the students through different measures on the relevance of using e-resources in their academic pursuits.

- The NWU library should use different communication dynamics to educate students on the merits of using e-resources.
- During the orientation of new students, librarians should conduct seminars that should be aimed at training the students to acquire skills such as computer and information literacy skills, information retrieval skills and digital literacy skills.
- When assessing e-resources used by students, librarians should guide the students and direct them on the necessary steps to follow.
- The NWU library should ensure that all technical issues such as Wi-Fi or network problems are fixed by the library ICT specialists.
- The NWU library should provide more computers to enable students to gain more access to the internet in order to complete their academic works.
- The study recommended that the use of e-resources by students could be enhanced by creating awareness through various communication dynamics and technically organising seminars and orientations regularly.

6.5.2 Recommendations to students

The recommendations made to the students were as follows:

- Students should always use the e-resources provided by the university to enhance their academic performance.
- Students should constantly use e-resources to enhance their knowledge and capacity in the use of e-resources.
- Students should diversify their use of e-resources by accessing e-resources other than e-journals, e-books and e-theses.
- Students should try to acquire information literacy skills to enable them to access e-resources proficiently.
- Students should always consult a librarian when they lack competencies and skills to access the e-resources.

6.6 SUGGESTION FOR FURTHER STUDIES

This study only focused on the use of e-resources by the students in an institution of higher learning. Having been limited to investigate only the rate of adoption and the

measures to improve the adoption of e-resources, this study recommends that future studies should investigate the various measures or communication dynamics to promote the use of e-resources in institutions of higher learning in South Africa using two or more institutions as case studies.

6.7 CONCLUSION

The NWU offers an e-resources collection in its library and little or no effort is made by the students to use it. In this regard, this study investigated the use of e-resources by the students at the academic library of the VTC. A quantitative research approach and a descriptive survey research design were adopted, which enhanced the findings of this study. Data were collected from 303 students at the Vaal campus and analysed using SPSS (Version 24). In this study, the literature review conducted supported the answers to the problem statement. Major findings obtained from the study indicated that the students (20.8 %) do not make sufficient use of the e-resources, as required, and do not have adequate knowledge to assess e-resources, which demands the assistance of the librarians. Librarians were also required to resolve all internet issues and provide more computers to enable students to gain more access to computers. The study concluded that the poor use of e-resources by students of the NWU-VTC was caused by the inability of the librarians and lecturers to create adequate awareness among students of the merits of using e-resources, but this could be resolved if the recommendations made by this study are applied.

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APPENDIX A: LETTER TO PARTICIPANTS

University of South Africa

PO Box 392

Unisa

0003

Dear respondent

My name is Glenda Moloto Makate. I am a final year student at the University of South Africa (UNISA) doing a Master's Degree in Information Science. I am carrying out a survey on the usage of electronic resources by students at the academic library of the North West University (Vaal Triangle Campus). I am kindly requesting you, as a North-West University student, to assist me in this research by answering the questions in the attached questionnaire. Your answers will be treated with utmost confidentiality and they are only meant to help me in collecting the relevant data for academic purposes as well as assisting NWU library to improve its provision of electronic resources to its users.

Thanking you in advance.

Moloto Glenda Makate

Contact no.: 0720827719

**APPENDIX B: QUESTIONNAIRE FOR STUDENTS TO COMPLETION STUDENTS
 TOPIC: USAGE OF ELECTRONIC RESOURCES BY STUDENTS AT THE
 ACADEMIC LIBRARY OF THE NORTH WEST UNIVERSITY, VAAL TRIANGLE
 CAMPUS**

INSTRUCTIONS:

PLEASE INDICATE YOUR RESPONSE BY MARKING THE APPROPRIATE BLOCK WITH A CROSS (X). FOR QUESTIONS THAT REQUIRE COMMENTS OR YOUR SUGGESTIONS, PLEASE USE THE SPACES PROVIDED.

SECTION A: DEMOGRAPHIC INFORMATION

Please mark with an **(X)** where appropriate.

1. Please indicate your level of study

1 st	2 nd	3 rd	4 th	Honours	Master's	PhD
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2. Please indicate your gender

Gender	Please tick
Male	
Female	

3. Please indicate your age category

Age	Please tick
18-20 years	
21-30 years	
31-40 years	
41-50 years	
Over 50 years	

4. Indicate your faculty

Faculty of Humanities	
Faculty of Education	
Faculty of Theology	
Faculty of Economic and Management Sciences	
Faculty of Natural and Agricultural sciences	
Faculty of Health Sciences	
Faculty of law	

SECTION B: USAGE OF ELECTRONIC RESOURCES

5. How long have you been using electronic resources? Mark with an X

How long have you been using the electronic resources?							
Less than six months		Between six months and a year		Between one and two year(s)		Between two and three years	More than three years

6. How frequently do you use the electronic resources?

Daily		2-3 times a week		Once or twice a month		Once or twice a year	
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SECTION C: KNOWLEDGE OF USERS REGARDING E-RESOURCES

7. Do you have access to internet facilities?

Yes	No

8. How do you rate the level of your knowledge in using electronic resources?

Excellent		Good		Fair		Poor	
-----------	--	------	--	------	--	------	--

9. Which of the following online databases do you use most often?

Online database	Very Often	Often	Sometimes	Never
LexisNexis				
Emerald Insight				
Google scholar				
JSTOR				
SABINET				
Others, please specify				

10. How do you rate your level of competency in using the following e-resources?

Electronic resources	Excellent	Good	Fair	Poor
Online databases				
e-Books				
e-Journals				
Institutional repository				
e-Thesis				
LibGuides				
Library Webpage				
CDs and DVDs				
Facebook				
Twitter				

SECTION D: REASONS FOR USING E-RESOURCES

11. When you visit the library, which of the following e-resources are you likely to consult? Use the scale below:

1 = very likely 2 = likely, 3 = unlikely 4. Never

Electronic resources	1	2	3	4
Online Databases				
E-books				
e-Journals				
Institutional repository				

e-Thesis				
Others, please specify,				

12. What do you use electronic resources for? Use spaces provided

SECTION E: CHALLENGES OF ACCESSING E-RESOURCES

13. Which challenges have you encountered when using e-resources?

Use spaces provided

14. Which of the following skills do you think are needed in order to use e-resources effectively? Tick as many options as you can.

Skills	
Information literacy skills	
Computer literacy skills	
Information Retrieval skills	
Digital literacy skills	
Others, specify	

SECTION F: METHODS USED BY LIBRARY STAFF TO INFORM STUDENTS ON THE AVAILABILITY OF E-RESOURCES

15. How did you know about availability of e-resources in the library? Tick as many options as you can.

Options	
Librarian	
Friend	

Lecturer	
Self-help	
Displays within library	
Trainings by librarians	
Library website	

16. Which strategies can help to enhance access and use of e-resources by users?

1 = very likely 2 = likely, 3 = unlikely 4. Never.

Options	1	2	3	4
Information literacy				
Institutional repository				
Library orientations				
Open access				
OPAC				

17. Are you trained in how to access e-resources?

Yes	No

SECTION G: TYPES OF E-RESOURCES

18. Which types of e-resources do you use often?

1 = Very often, 2 = Often, 3 = Sometimes, 4. Never.

Electronic Resources	1	2	3	4
Online databases				
E-books				
E-journals				
E-thesis				
Other, please specify				

GENERAL COMMENT

19. Which version of resources you prefer to use and explain why?

Resources	
Print resources	
Electronic resources	
Both resources	
Explain:	

Thank you for your participation

APPENDIX C: CONSENT TO PARTICIPATE IN THE QUESTIONNAIRE

Consent to participate in the questionnaire

1. I hereby confirm that the researcher, Moloto Glenda Makate, about the nature, conduct, benefits and risks of this study, has informed me.
2. I have the opportunity to ask any questions related to this study, and I have received satisfactory answers to my questions.
3. I have received, read and understood the above written information (participant letter of information) concerning the study.
4. I understand that all information to be gathered is confidential and will not prejudice me in any way.
5. Therefore, I voluntarily agree to take part in this research.

Please tick the box below to indicate your consent.

I have read the consent form and hereby agree to participate in this study.

APPENDIX D: UNISA ETHICS LETTER



DEPARTMENT OF INFORMATION SCIENCE ETHICS REVIEW COMMITTEE

12 August 2019

Dear Ms Moloto Glenda Makate

Decision:

Ethics Approval from 12 August 2019 to 12 August 2024

DIS Registration #: Rec-120819

References #: 2019-DIS-0029

Name: MG Makate

Student #: 54033977

Researcher(s): Moloto Glenda Makate
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0720827719

Supervisor(s): Dr CI Ugwu

&

Dr SM Mojapelo
mojapsm@unisa.ac.za
012 429 4165

Usage of electronic resources by students at the academic library of the North West University, Vaal Triangle Campus.

Qualifications: Masters Study



Thank you for the application for research ethics clearance by the Unisa Department of Information Science Research Ethics Committee for the above-mentioned research. Ethics approval is granted for five years.

The **low risk application** was reviewed and expedited by the Department of Information Science Research Ethics Committee on 12 August 2019 in compliance with the Unisa Policy on Research Ethics and the Standards Operating Procedure on Research Ethics Risk Assessment. The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy of Research Ethics.
2. Any adverse circumstances arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Information Science Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards the protection of participants' privacy and the confidentiality of the data should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no. 4 of 2013; Children's Act no. 38 of 2005 and the National Health Act, no. 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date of **12 August 2024**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **2019-DIS-0029** should be clearly indicated on all forms of communication with the intended research participants, as well as the Committee.*



Yours sincerely



Dr Isabel Schellnack-Kelly
Department of Information Science: Ethics Committee



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APPENDIX E: NWU ETHICAL CLEARANCE LETTER



Private Bag X6001, Potchefstroom
South Africa 2520

Tel: +2718 299-1111/2222

Web: <http://www.nwu.ac.za>

Research Data Gatekeeper Committee

NWU RDGC PERMISSION GRANTED / DENIED LETTER

Based on the documentation provided by the researcher specified below, on 10/10/2019 the NWU Research Data Gatekeeper Committee (NWU-RDGC) hereby grants permission for the specific project (as indicated below) to be conducted at the North-West University (NWU):

Project title: Usage of electronic resources by students at the academic library of the North West University, Vaal triangle campus.

Project leader: Dr C Ugwu and Dr S Mojapelo

Researcher/Project Team: M.G. Makate

Ethics reference no: 2019-DIS-0029

NWU RDGC reference no: NWU-GK-2019-040

Specific Conditions:

- The Researcher may request the request demographic information of students and not any personal information of willing participants.

Approval date: 10/10/2019

Expiry date: 09/10/2020

General Conditions of Approval:

- The NWU-RDGC will not take the responsibility to recruit research participants or to gather data on behalf of the researcher. This committee can therefore not guarantee the participation of our relevant stakeholders.
- Any changes to the research protocol within the permission period (for a maximum of 1 year) must be communicated to the NWU-RDGC. Failure to do so will lead to withdrawal of the permission.
- The NWU-RDGC should be provided with a report or document in which the results of said project are disseminated.

Please note that under no circumstances will any personal information of possible research subjects be provided to the researcher by the NWU RDGC. The NWU complies with the Promotion of Access to Information Act 2 of 2000 (PAIA) as well as the Protection of Personal Information Act 4 of 2013 (POPI). For an application to access such information please contact Ms Annamarie De Kock (018 285 2771) for the relevant enquiry form or more information on how the NWU complies with PAIA and POPI.

The NWU RDGC would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the NWU RDGC for any further enquiries or requests for assistance

Yours sincerely

Prof Marlene Verhoef
Chairperson NWU Research Data Gatekeeper Committee

Original details: (22351930) C:\Users\22351930\Desktop\lest 2.docm
13 November 2016

Current details: (22351930) M:\DSS\18533\Monitoring and Reporting Cluster\Ethics\Applications RDGC\Updated RDGC Permission Letter.docm
15 November 2018

APPENDIX F: LANGUAGE EDITOR CERTIFICATE

LETITIA GREENBERG
LANGUAGE SPECIALIST

Cellphone: 084 077 1580
Email: lgletitia@gmail.com

31 Aland Road
Valhalla
0185


29 November 2021

To whom it may concern

With this letter, I confirm that I have language edited the thesis entitled *Usage of electronic resources by students at the academic library of the North West University, Vaal Triangle Campus, South Africa* by Moloto Glenda Makate with student number 54033977.

With a relevant degree and honours degree, I am fully qualified to undertake such editing.

Yours faithfully



Letitia Greenberg