



Information-seeking behaviour of Faculty of Agriculture and Natural Resources' students at Neudamm Campus, University of Namibia

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Dedication

The LORD is my shepherd; I shall not want: Psalm 23:01

This work is dedicated to my mother Andiamanga Amutenya, my siblings, and my beautiful daughter Namene Ngeendina Angula. Thank you for your love and support.

I have done this work in memory of my late grannies, late father Petrus Katutu Barnabas Uugwanga, late uncles and late sister Ndagwedha Retta-Liisa Uugwanga whom I miss dearly.

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Abstract

This study investigated the information-seeking behaviour of the Faculty of Agriculture and Natural Resources' (FANR) students at Neudamm Campus, University of Namibia (UNAM). It determined their information needs, information-seeking patterns, information use and information evaluation including preferences for information resources. In addition, it considered the challenges students encountered when accessing and using information at Neudamm Library. This was done in order to improve the delivery of information services. Taking a qualitative research approach, this study was guided by Kuhlthau's (2004) Information Search Process model which served as a theoretical framework.

Data were collected from a purposively selected sample through focus group discussions that were held with undergraduate students and interviews with postgraduate students and academic staff. The key findings from this analysis are that FANR students need information to write assignments, class tests, examinations and research projects. They value both printed and online resources. However, they are frustrated by the outdated resources, shortage of printed materials, and the limited and restricted access to e-resources. When in the library, they mainly browse for books on library shelves and search for information on the internet, and rarely use library electronic databases. There is a need to train students on the formulation of search strategies and the use of library e-resources. It transpired that students seldom use advanced search strategies, instead they either type short keywords or long sentences on Google search engine. Their challenges include very noisy library study area, ineffective interlibrary loan systems and fellow students' unwillingness to share facilities such as computers.

The findings indicate that the library needs to acquire the latest e-resources, provide robust information literacy training and redesign its space to increase study space that students can use to access quality information. Additionally, the university should source funds from external donors to build a state of the art library to accommodate the increasing number of FANR students.

List of acronyms and abbreviations

AGORA - Access to Global Online Research in Agriculture

AJOR - American Journal of Operations Research

CABI - Centre for Agriculture and Biosciences International

CD-ROM - Compact Disc-Read Only Memory

FANR - Faculty of Agriculture and Natural Resources

GDP - Gross Domestic Product

HINARI - Health InterNetwork Access to Research Initiative

HoDs - Head of Departments

ILL- Interlibrary loan

IT- Information technology

JSTOR - Journal Storage

MAWF- Ministry of Agriculture, Water and Forestry

OPAC - Online public access catalogue

SL-Short loan

TEEAL - The Essential Electronic Agriculture Library

UNAM - University of Namibia

UCT - University of Cape Town

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Chapter 1

Introduction and Background to the Study

1.1 Introduction

This study investigated information-seeking behaviour of Faculty of Agriculture and Natural Resources (FANR) students at the University of Namibia (UNAM) in order to guide the design of their information services. Hepworth (2007) establishes that information-seeking behaviour studies aim to ultimately guide and model information systems' design. At this juncture, it is important to explain the concept of information-seeking behaviour and its associated terms in the context of this study.

"Information-seeking behaviour is a broad term encompassing the ways individuals articulate their information needs, seek, select, evaluate, and use the needed information" (Majid, Anwar & Eisenschitz, 2010:146). Additionally, they indicate that individuals or groups often have to perform different work roles at different stages of their careers and often face various challenges and problems that require solutions. As a result, they encounter knowledge gaps that trigger information needs resulting in the information-seeking process (Majid, Anwar & Eisenschitz, 2010:147). According to Bates and Maack (2010:2381) "information needs arise whenever individuals find themselves in a situation requiring knowledge". A person seeks information to satisfy his or her information needs. Within information science, information needs have been understood as stemming from a vague awareness of something missing, culminating in the desire or urge to locate information that contributes to understanding and meaning (Kuhlthau, 1993). Belkin, Brooks and Oddy (1982:61) referred to this situation as an "anomalous state of knowledge", which Kuhlthau (2004) specifies to be triggered by a feeling of uncertainty. Therefore, it can be deduced that an information need is a result of an intense desire

to acquire information in order to fill in the knowledge gap, reduce uncertainties and acquire more knowledge.

Often, when human beings have information needs, they start to seek information. The manner in which they realise their information needs, seek information, and use the information is referred to as information-seeking behaviour (Wilson, 2000). In the context of this study, information-seeking behaviour is regarded as any human behaviour related to information needs, information-seeking, and information use. This behaviour happens as a result of an evaluation process that help to determine the relevance of information to the identified information need, by the UNAM students in the FANR, Neudamm Campus. Further clarification of these terms, as associated with the information-seeking behaviour concept, is discussed below.

1.1.1 Information need

Information need is a requirement that drives people into information-seeking. Information need develops from an awareness of something missing, situations that require information, uncertainties and challenges. These all necessitate the seeking of information that might contribute to understanding and meaning (Kuhlthau, 1993). When Belkin, Oddy and Brooks (1982) see information-seeking as a method used to solve problems, they regard the problem as "an inadequate state of knowledge" or "anomalous state of knowledge" These inadequacies can manifest as a gap, shortage, uncertainty or incoherence of information with one's knowledge and information seeking is used to address the inadequacy. Information needs are complex and vary with space and time. They are influenced by many factors such as role of the person, demographics and the context within which they operate (Fourie, 2004).

1.1.2 Information-seeking

Fourie (2004:70) describes information-seeking as "a complex process consisting of social, communicative and interactive behaviour" with information sources. Wilson (2002:50) defines it as "the purposive search of information in order to satisfy certain goals". Case (2002) states it is a conscious effort to acquire information in response to

a need or gap in one's knowledge. Although humans often seek information individually, there are times when they collaborate with others to seek information (Fisher et al, 2004; Hyldegård, 2006; McKenzie, 2003). They also seek information through proxy, using other people such as agents or gate keepers to seek information on their behalf (Hyldegård, 2006; McKenzie, 2003). The process of seeking information can be complex depending on the nature of information need, the urgency of the information needed and the availability and accessibility of relevant information sources. In a nutshell, information-seeking is the process humans take to get information in order to address their information needs.

1.1.3 Information evaluation

Once a person has found information that will address their information needs, they match what they have found with what they need and already know. In principle, there is a need to analyse or evaluate the relevance of information before it is used. This process requires people to critically think about the relevance, reliability, validity, accuracy, authority, timeliness, point of view or bias of information sources that they consult. Although most of the sources of information found in the library collection have already been evaluated for inclusion, this does not necessarily mean that these sources are always relevant to users' information needs.

1.1.4 Information use

Savolainen (2006:187) quotes Bouazza (1989:146) who stated that information use is "seeking behaviour that leads to the use of information in order to meet an individual's needs". Wilson (1997:589) notes that "general models of information behaviour suggest that information use begins when information sought or received from various sources is processed by the information seekers". This is perceived as the actual utilisation of information to address the information needs and may be a form of reducing or eliminating uncertainties, solving problems, and filling and normalising knowledge gaps.

Taking the discussion further, Mahajan (2009:05) points out that information-seeking behaviour differs from user to user. Therefore, libraries must understand the information needs of their users in order to re-engineer their services and provide information efficiently. Understanding users' information needs and their information-seeking behaviour would lead to the design and acquisition of appropriate information systems that would enable effective services (Chaura, 2015). Therefore, the aim of this study is to investigate the information-seeking behaviour of undergraduate and postgraduate students in the FANR at UNAM in order to inform the design and acquire meaningful information resources and services.

1.2 Background to the study

FANR students at UNAM operate in a country where the economy is based on mining, agriculture, fisheries, tourism, and manufacturing. The country has rich minerals deposits such as diamonds, uranium, gold, silver, zinc, copper, lead, tin, marble, and granite as well as semi-precious stones occurring exclusively under Namibian soil (African Economic Outlook, 2015:12). The mining sector's contributes 11.3% towards national gross domestic product (GDP) (Namibia Household Income and Expenditure Survey 2009/2010, 2011:58) which is one-fifth of the GDP.

The second important sector is agriculture. Even though it generates only 6.1% of the GDP (African Economic Outlook, 2015:04), more jobs are found in this sector than in other sectors such as health. As a result, agriculture remains important for national economic growth, job creation, and poverty reduction. Although Namibia is classified as a country with relatively low agricultural potential, agriculture plays a fundamental role in the livelihood of its 2.13 million population. It is estimated that 70% of the population depends directly or indirectly on farming as part of their income and/or livelihoods. This is often the case in rural households that depend on subsistence farming (National Training Authority, 2013:01). Livestock, crop farming,

and forestry dominate the sector, even though lately crop farming shows a decline due to climate change, particularly erratic rainfall and prolonged drought.

According to the Ministry of Agriculture, Water and Forestry's (2011) annual report, "Namibia has 200 000 skilled workers, small, well-trained professional and managerial class personnel who are involved in agricultural practice". Prior to that, the 2009/2010 *Namibia Household Income and Expenditure Survey* report showed that "agricultural workforce industry is comprised of 29.8% of population which is actively engaged in the primary agricultural sector".

There has been a huge concern that the agriculture sector has a shortage of skilled and well-trained professionals. This sector forms part of the backbone of the Namibian economy and has the potential to create a substantial number of jobs (*First National Development Plan 1995/96 – 1999/2000* (NDP1). Due to the lack of skills among personnel in this sector, the country initiated training programmes and established institutions such as the FANR at UNAM. In its development plans, the government stated they were driving the policy on training. UNAM, too, saw the need to establish a faculty to train agricultural scientists.

1.2.1 University of Namibia

UNAM, the first state-owned university, came into operation in 1992, under the Parliament Act 18 of 1992. It was reported (University of Namibia, 2015:03) that by the end of 2014, the university had a population of 1515 staff members. The institution statistician reported that the university had more than 23 000 registered students.

UNAM has become a multi-campus, with twelve campuses countrywide. It has eight academic faculties and four schools namely:

1. Faculty of Agriculture and Natural Resources
 - School of Veterinary Medicine

2. Faculty of Economics and Management Science
3. Faculty of Education
4. Faculty of Engineering and Information Technology
5. Faculty of Health Science
 - School of Medicine
 - School of Nursing and Public Health
 - School of Pharmacy
6. Faculty of Humanities and Social Science
7. Faculty of Law
8. Faculty of Science

The programmes offered by these faculties have been designed to meet national and international standards. Therefore, the university strives to provide quality higher education through strong teaching, research, innovation, consultancy and community service (University of Namibia, 2015: ix). The Faculty of Agriculture and Natural Resources (FANR) was established in 1996 with the aim of "promoting sustainable agricultural and natural resources development and management in Namibia and this is achieved through teaching, research and extension services to communal and commercial farming communities" (University of Namibia 2011:7).

Given the distinct areas of specialisation needed by the country, FANR has established departments in various agriculture facets which require resources in different geographical areas in Namibia. Consequently, the faculty is dispersed over four campuses that meet the specific needs of the areas; Henties Bay, Katima Mulilo, Neudamm, and Ogongo. Henties Bay teaches Fisheries and Aquatic Science because of its proximity to the ocean. Katima Mulilo is focused on Wildlife Management, Ecotourism and Animal Health as it is situated in a region with much wildlife. Neudamm has departments teaching Animal Science, Food Science and Technology, Agricultural Economics and Extension, and Veterinary Medicine. Ogongo's departments are Crop Science, and Integrated Environmental Science as it is in a

region that has arable land. Of the four FANR campuses, Neudamm is considered the headquarters of the university given that the executive office and the executive dean are at Neudamm campus. Moreover, this campus has the majority of the students doing their first degree at FANR. This study is conducted at Neudamm Campus which is situated at 40km east of Windhoek (University of Namibia, 2012:07).

1.2.2 University of Namibia: Neudamm Campus

Neudamm Campus is housed in an area stretching over 10 187 hectares. In 1897, the owner handed over the grazing license to the land council as he was unable to find water on the farm. During that time Albert Voights constructed the first large dam and named it "New Dam"- now referred to as Neudamm and this is where an agricultural school was established in February 1928. The campus is renowned for producing leading farmers and well-known agriculturalists in Namibia.

In order to promote quality learning, teaching, research, consultancy, and community service, UNAM has an academic library at all of its campuses. According to the University of Namibia Act (18 of 1992.s3), the university libraries were given the mandate to be national support systems for knowledge creation and management, and to provide access to the most relevant and suitable information. The UNAM library's mission statement is "to facilitate excellence in teaching and learning, create an appropriate study and research environment, anticipate and respond to the students' learning and research needs, contribute to positive graduate outcomes and provide an information infrastructure necessary for ground-breaking teaching, learning and research" (University of Namibia 2015:99). The library has taken up this task to provide the most outstanding information services to the university community possible. To carry out this mandate and mission, all campuses' libraries have to research and reflect on the needs and the services they provide to their students. This study was conducted at Neudamm Campus library, where the researcher serves as a subject librarian, and she is responsible for

providing information services to the undergraduate and postgraduate students, agricultural scientists, academic staff, and other agricultural users. The Neudamm Library's main objective is "to process, organise and disseminate the much-needed information on agriculture and natural resources to the users, be it electronic or in printed formats" (University of Namibia 2011:07).

This study was conducted in a context of a country whose livelihood depends on agriculture. Namibian government recognised the shortage of skilled agricultural scientists and saw the need to establish a university that would offer specialised agriculture programmes in geographical regions that will realise optimal utilisation of its resources.

1.3 Research problem

To fulfil the library mission, the UNAM Library expanded its 2014 budgetary allocation in priority areas as articulated in the University Strategic Plan (2011 - 2015) and the Library Management Action Plan for the 2014 academic year. This was done in order to provide appropriate information facilities, services and resources that would contribute to students' learning and academic achievements, the teaching and research productivity of the university, as well as to meet any other needs of the users. Subject librarians work tirelessly in educating, training and creating awareness of the library services and resources through information literacy programmes. The university often creates and expands support services and programmatic interventions, with the hope that these services will yield positive returns such as increase in access to library resources.

In 2012 the University of Namibia invested in information and communication technology infrastructure to access easy and fast internet connectivity. The university now has wireless facilities in all its campuses with the aim of improving and increasing internet connection, and improving access to electronic resources remotely. With all these improvements, the library saw wireless facilities as another

breakthrough in increasing usage of and accessibility to library services and resources. In other words, the library's expectations were to see the students utilising these resources, and making the library either physically or virtually their major source of information. The researcher is a subject librarian to the Faculty of Agriculture and Natural Resources at Neudamm campus and from the researcher's observation coupled with reports such as LIBQual+ (2012 & 2014), there is a low usage of the library's facilities, services, and resources. The study therefore seeks to establish the information-seeking behaviour of the students on this campus to determine their information needs, information-seeking patterns, information evaluation and information use, including preferences for information services in order to improve or redesign the delivery of information services.

1.4 Objectives of the study

The university library's purpose and objectives is to deliver client-focused innovative information products, services, and programmes of the highest quality that are integrated with, and central to, the university's teaching, learning, research and community services (University of Namibia, 2015:99). To achieve this, the library is required to offer effective library services and promote the use of library information resources. The study seeks to investigate the information-seeking behaviour among students in the Faculty of Agriculture and Natural Resources (FANR), Neudamm campus library. This will be achieved through the following research objectives and questions:

- (i) To ascertain the information needs of FANR students at Neudamm campus pertaining to their studies.
- (ii) To establish the information resources preferred by FANR students.
- (iii) To determine FANR students' process of seeking information needed for their studies.

- (iv) To identify the challenges encountered by FANR students when accessing and using information at Neudamm library.
- (v) To solicit students' and academic staff inputs on how to improve the Neudamm Campus library services, facilities, and resources.

1.5 Research questions

- (i) What are the information needs of FANR's students at Neudamm Campus?
- (ii) Which information resources do FANR students prefer to use?
- (iii) What are the information-seeking patterns adopted by FANR students?
- (iv) Which challenges and barriers are encountered by the FANR students while accessing and using Neudamm campus library?
- (v) What can Neudamm campus library do improve its services, facilities, and resources?

1.6 Significance of the study

There are many studies carried on information-seeking behaviour of various groups of people, particularly of undergraduate and postgraduate students, but few studies have been conducted in Namibia. This study acknowledges Mabhiza (2016) investigated the information-seeking behaviours of veterinary scientists in Namibia. Matsveru (2013) studied the information need and information-seeking behaviour of Namibian pastors. Mnubi-Mchombu and Mostert (2011) studied orphans and vulnerable children and their caregivers in Ohangwena, Okavango and Karas regions. Later on, still in Namibia, Mnubi-Mchombu (2013) researched the information needs and information-seeking behaviour of orphans and vulnerable children and their caregivers; and the role of service providers in the livelihoods of these children. From the literature, one notes Chiware (2008) and Chiware and Dick (2008) survey on information needs and information-seeking patterns of small, medium and micro enterprises in Namibia. In an academic environment, there is

Mabhiza, Shatona and Hamutumwa's study (2012) on information-seeking behaviour of the academics in the Faculty of Economics and Management Science, University of Namibia, and Syvalahti and Katjihingua's study (2012) on law students at the same university. However, none of them were either on agricultural students; the closest was on Veterinary scientists.

From the literature reviewed, lack of evidence of studies on information-seeking behaviour of agricultural students is apparent. This is despite the fact that these students are the much-needed future agriculture experts to address the most critical aspect of food security in the country and Africa continent at large. Consequently, this study investigated the information-seeking behaviour of FANR students as they are the group engaged in research and development in the field of agriculture, one of the pillars of Namibia's economy. Although information needs and information-seeking activities differ from one profession or field to another, adequate knowledge of the information behaviour of undergraduate and postgraduate agricultural students is vital for agricultural libraries to support their research activities.

The findings and suggestions from this study add further knowledge to the existing body of literature on information-seeking behaviour. This could also lead to the provision of current and up-to-date agricultural information and materials to enable opportunities for improved research. In addition, it is deemed that the study is valuable to the Neudamm Campus library management as it will assist management in gaining knowledge of the users' needs and to the country as a whole. Hopefully, management will respond to this insight by acquiring the needed resources, rendering preferred professional information services and, in consultation with students, developing new strategies that would improve library services.

1.7 Limitations and delimitations

According to Du Plooy-Cilliers, Davis, and Bezuidenhout (2014:275), limitations of a study refer to factors that are usually beyond the researcher's control, but that could

possibly impact the results of the study. These could include time, financial resources, and access to information and participants.

Limitations to this study were that while the researcher had planned to use NVivo software, the researcher found it to be very cumbersome to use. Therefore, the researcher ended up using the software partially.

The study also had delimitations; Du Plooy-Cilliers, Davis and Bezuidenhout (2014:275) state that these are parameters or borders that a researcher puts in place. As it was earlier pointed out, students of the faculty are housed at different campuses countrywide depending on the courses they are studying. Owing to limited time, that nature of the research (a minor dissertation) as per the university requirements, the study targeted primarily fourth year and postgraduate students as well as a handful number of academic staff. Therefore, it might be difficult to generalise the findings. As the studied was conducted at the Neudamm Campus only, the findings may not be generalised to other FANR campuses. In addition to that while Kuhlthau's Information Search Process (ISP) model has six stages, the present study only concentrated on the ISP three realms of experience: the affective (feelings) the cognitive (thoughts) and the physical (actions).

One should also point out that because the researcher is a librarian at Neudamm Campus, some participants may have not wanted to voice criticisms of the library.

1.8 Research report outline

Chapter 1 introduces the purpose of the study and the context for information-seeking behaviour of FANR students at University of Namibia. It provides a background to the study. It outlined the research problem, research objectives and questions for the study as well as the limitations and delimitations. Chapter 2 covers the theoretical framework and its contribution to the study as well as a review of related literature. Chapter 3 outlines the overall research methodology and the procedures used in the study including research design, data analyses, validity and

reliability, and the pilot study. Chapter 4 presents the data and Chapter 5 is the discussion and interpretation of the findings leading to conclusions and recommendations.

1.9 Summary

This chapter presented the context of the study through providing an introduction to a detailed background of Namibia, UNAM and its FANR as well as the Neudamm Campus. It shared the research problem, research objectives and questions, the significance of the study, and the limitations and delimitations. The next chapter is the theoretical framework and literature review.

Chapter 2

Theoretical Framework and Literature Review

2.1 Introduction

There has been much research on information-seeking behaviour and this has resulted in various models that could frame this research. In this chapter, the researcher presents the chosen theoretical framework that guided the study and literature review of the current study based on the research questions outlined in Chapter One.

2.2 Theoretical framework

Theoretical framework is a “logically structured representation of the concepts, variables and relationships involved in a scientific study with the purpose of clearly identifying what will be explored, examined, measured or described” (Desjardins, 2010). The development of theories unique to information studies is essential for the growth of the discipline. This is because a study's major significance includes its theoretical contribution to the field of study (Koh, 2013:37). According to du Plooy-Cilliers, Davis and Bezuidenhout (2014:55), theories assist researchers to identify the relevant key variables or aspects to include in the investigations of phenomena. Wilson (1991) reveals that studies in information-seeking behaviour date back to the 1940s when studies were presented at the Royal Society Scientific Conference of 1948. He observes that the masses of papers and reports produced by the information scientists resulted in constant complaints that researchers have not built upon prior research in such a way to cap a body of theory and findings to serve as a starting point in the field (Wilson, 1999:250).

As a result of the complaints, information behaviour researchers made efforts to work towards theory development. Therefore, information-seeking studies that continued to be carried into the 1980s have resulted in a number of models.

A model is described by Wilson (1999:250) "as a framework for thinking about the problem and may evolve into a statement of the relationships among theoretical propositions". Wilson (1999:250) further elaborates that "models in information behaviour field are statements in a form of diagrams that attempt to describe the information-seeking activities, causes, consequences and relationships among stages in the information-seeking behaviour." In addition, Wilson (1999) argues that models can be used as theoretical frameworks while they are still evolving into theories.

Some of the well-established information-seeking behaviour models include

- (i) Ellis's (1989 and 1993) Information-seeking model
- (ii) Kuhlthau's (1991 and 2004) Information Search Process model
- (iii) Leckie, Pettigrew and Sylvain's (1996) Model of Information-seeking behaviour of professionals
- (iv) Radical change theory of the 1990s

Going through the literature, it is clear that various studies have used different information-seeking behaviour models as theoretical frameworks. For instance, Douglas et al. (2015) used Kuhlthau's (2004) model in a study where they compared the beginning and advanced Engineering students' description of information skills when completing an engineering design process.

A study by Chaura (2015) on information behaviour of final year students of Mzuzu University in Malawi used Kuhlthau's (1991) Information Search Process model as a guiding theoretical framework. Leckie, Pettigrew and Sylvain's (1996) general model of information-seeking behaviour of professionals was used by du Preez (2008) when studying the information needs and information-seeking behaviour of consulting engineers.

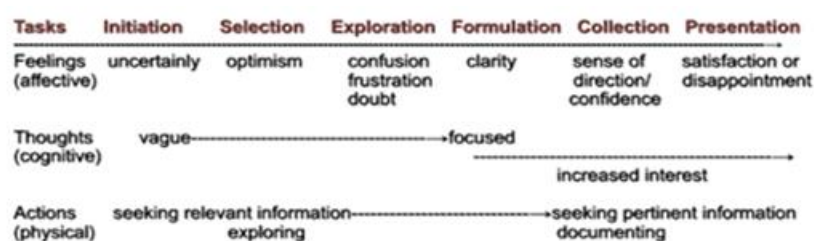
Ellis's model (1993) was used by Ingwersen and Jarvelin (2005) for information-seeking behaviour and research needs of extension workers towards tasks' completion and use of technology. Furthermore, Wilson's general model of

information behaviour (1996) was used by Chiware (2008) on information needs and information-seeking patterns of small, medium and micro enterprises in Namibia. Matsveru (2013), too, used Wilson’s model in studying the information needs and information seeking behaviour of Namibian pastors. Dresang and Koh (2009) adopted the Radical Change theory of the 1990s in their study on Radical Change theory, youth information behaviour and school libraries.

This study used Kuhlthau’s (2004) Information Search Process model as its theoretical framework after considering several factors. These factors included the study’s objectives and research questions and the fact that Kuhlthau developed this model from studying students and this study also has students as its primary subjects. This is appropriate to the focus of this study. Therefore, Kuhlthau’s model was found to be the most appropriate model. Furthermore, the focus was on the affective and cognitive aspects of information-seeking behaviour which Kuhlthau’s model encapsulates adequately. In particular, the model was used to guide the design on the research instruments.

2.2.1 Kuhlthau's (2004) Model of the Information Search Process

Figure 1: Model of Information Search Process



Source: Kuhlthau (2004:82)

Kuhlthau's Information-seeking Process Model (2004) takes into account the information seekers’ emotional, cognitive and physical experiences at different stages of the process. It is believed that this model was developed with an interest in investigating why students behave the way they do towards their information-

seeking process. Kuhlthau aimed to address a recognised gap between information systems and users' natural process of information-seeking so as to improve information system design and guide the encountering process made by intermediaries.

To develop the model, Kuhlthau examined the role of emotions, specifically uncertainty in the information-seeking process, as experienced by many students. She concluded that many searches are abandoned due to an overwhelmingly high level of uncertainty. The model has six stages: initiation, selection, exploration, formulation, collection and presentation. In addition, it is associated with feelings, thoughts and actions which clearly show that it is more a phenomenological than a cognitive process (Wilson, 1999). In many accounts, students' information-seeking processes resume with the interaction cycle consisting of identifying an information need. This is followed by the activities such as query formulation and specification, examination of retrieved results, and if the retrieved result is information that is not needed, there is reformulation of the query and repeating of the information-seeking cycle until the satisfactory result is found. Students experience doubts, confusions, and frustrations which are evident at all stages of Kuhlthau's model. The researcher was eager to establish if these feelings existed amongst FANR students.

According to Case (2002), in the 1990s, there was an estimation of 10 000 published papers on information-seeking behaviour. One may wonder why this study is being conducted while there is so much literature already available in this field. This is because of the distinctiveness of user groups; the peculiarity of their information needs; and the uniqueness of their information-seeking behaviour — the kind of behaviour that is highly influenced by context (Anderson & Fourie, 2015). Therefore, it is not surprising that there is a considerable body of literature that has been published dealing with information needs and information seeking behaviour of both individuals and groups in a variety of contexts (Anwar, Al-Ansari & Abdullah, 2004). Furthermore, a significant amount of research has revealed that information

needs, information-seeking and information use are highly complex and therefore must be determined uniquely for different user groups prior to any information system or service design (Anderson & Fourie, 2015; Hepworth, 2007).

2.3 Literature review

A literature review is a process that "involves searching for, reading, evaluating and summarising as much as possible the available literature that relates both directly and indirectly to the research topic under study" (du Plooy-Cilliers, Davis, & Bezuidenhout, 2014:101). This helps to determine what previous scholars have written on the topic as well as to identify the main models and theories that could be relevant to the research topic. The literature review is important for the researcher to familiarise him or herself with the current state of knowledge regarding the research problem and to establish how others have delineated similar problems (Ravhura, 2010:10). Ultimately, the researcher will be informed of the influential researchers in the field of study.

Thus far many studies have been conducted to investigate information-seeking behaviour of library users based on their subject interests, occupation, information environment and geographic locations. Despite the growing number of studies on information-seeking behaviour among students, little research has been carried out on agricultural students in Africa or elsewhere and yet food shortage is a serious crisis in many parts of the world including Africa. This explains the lack of literature reviewed on information needs and information-seeking behaviour of agriculture students. Nonetheless, some of the identified studies on the topic of information-seeking behaviour of students and other groups have examined the ways in which scholars articulate their information needs, as well as how they seek and use information. These include:

- Chaura's research (2015) on information-seeking behaviour of final year students of Mzuzu University in Malawi;
- Okite-Amughero, Makgahlela and Bopape's (2014) study on the use of electronic information resources for academic research by postgraduate students at Delta State University.
- Bitso and Fourie's (2014) study on the information-seeking behaviour of prospective geography teachers at the National University of Lesotho.
- Oluwafemi, Adeniyi, Oluseun and Olatunde's (2013) focus on the information-seeking behaviour of graduate students of University of Agriculture, Abeokuta, Nigeria; and
- Onuoha and Obiako's (2013) comparative analysis of student's information-seeking behaviour in Adventist Universities.

2.3.1 Information-seeking behaviour

Information-seeking behaviour is a term used to describe the many ways in which humans interact with information. In particular, the ways in which people seek and utilise information, which is an important aspect in an information society and to the Library and Information Science discipline (Bates & Maack, 2010:2381). Very often, as a result of a recognition of an information need experienced by users, it is believed that in order to satisfy the information need, users actively undergo the information-seeking process which ends when it is perceived that the needed information has been found.

Wilson (1999) notes that factors influencing information-seeking include human personal needs; such as physiological, affective and cognitive needs; making it the root of motivation towards information-seeking behaviour. In the same vein, Prasad (2000:09) indicates that a user has to go through the following information-seeking behaviour processes: identifying the objective, defining the information need,

accessing information systems, establishing sources of information, information acquisition, use of information, and concluding with satisfaction or dissatisfaction.

Anwar (2007) defines information-seeking behaviour of the students "as active or purposeful information seeking resulting from the need of students to participate in class discussions, seminars, workshops, conferences or to write final year research paper". Although Wilson (1999:839) highlights that each individual experiences the same stages in the resolution process, moving from uncertainty to increasing certainty, he, however, has underlined the fact that, graduates' information-seeking behaviour may differ amongst other ordinary people.

Korobili, Malliari and Zapounidou (2011:155) argue that in different fields of studies, the curriculum and personal characters have an influence on the information-seeking process. Although Barret (2005:234) applauds undergraduate students and considers them as smart and expected to be successful in information-seeking, it appears that they are still faced with many challenges when seeking information to address their information needs. Barret described them as slow, haphazard and serendipitous when searching for information. It is believed that students often find information through browsing the shelves and chasing index citations. They rarely consult librarians when they require assistance and prefer the advice from their instructors, lecturers or friends.

However, on a separate study by Pareek and Rana (2013:05), it was discovered that undergraduate students make use of subject experts, the library and the internet in their information-seeking. Therefore, Chaura (2015) emphasises the need for libraries to understand their students' information-seeking behaviour, as it is of paramount importance in the design of appropriate information service delivery in any academic library. When a library is aware and understands the information behaviour of its students, it can develop a more meaningful library collection, upgrade facilities accordingly, re-design and improve services that effectively meet

the information needs of the students and ultimately match the information-seeking behaviour of its students.

2.3.2 Information needs of students

Information need is a complex term that has been defined differently by various researchers. The prominent information scientist Wilson, (1999) defines it from a historical and current overview of the concept in information science, as a motivation people think and feel to seek information. Traditionally, information needs denote the start of state for someone seeking information. This involves all sorts of information-seeking (purposive information behaviour) and human information behaviour; also including non-purposive information behaviour (Wilson, 1999). Additionally, Kuhlthau (1993) defined information needs as evolving from a vague awareness of something, a lack of understanding and meaning as well as uncertainty that culminates in locating information that contributes to restoration of understanding and meaning. The authors have limited the definition to information searches involving user interaction with information systems such as search engines, for example Google, online databases and electronic library catalogues and metadata and any of the scholarly or research-oriented retrieval systems, that are relevant and in line with the study.

For academic or any libraries to address the demands posed by changing information environment of their library users adequately, there is a need to persistently examine the type of information different users need and utilise (Hepworth, 2007). Chaura (2015), and Onuoha and Obiako (2013) believe that understanding library users' needs can enable a library to produce and provide services and collection that will meet the needs of the users. Therefore, identifying information needs is essential to the design of information systems in general and, particularly, to the provision of effective information services. Although it is believed and it has been found to be a difficult task, research of this kind will help in identifying and determining users' information needs. In affirmative, Devadason

(2008) indicates that there is no single or universal method or tool which will serve entirely or any adopted methods to gather information on various factors that influence the information needs. Higher education institutions are established with the goal "to develop well-educated and skilled citizens who are able to compete in a sustainable, diversified and knowledge-intensive international economy, which meets the development goals of the country" (Department of Higher Education and Training, 2014:17). It is through the above-mentioned arguments that the information needs of the academic community need to be unearthed so as to be satisfactorily met by libraries and information services. As mentioned by Kwadzo (2015:02) "university libraries spend large amounts of money on building up collections to satisfy the teaching and learning, as well as research needs of its faculties and students".

A study on information needs and information-seeking behaviours of Social Science Graduate students at Malaysian public universities by Thani and Hashim (2011) reveals that graduates seek information because they need to solve a problem at hand or need new information to expand what is presently obtained in order to validate their knowledge and clarify misinformation or uncertainties. In addition, it was also found that graduates seek information to increase the current stage of knowledge and to fulfil research requirements. In a similar study conducted in India by Natarajan (2013), students seek information to keep abreast with the current developments, to develop competencies, for improving knowledge, for presentations at workshops and seminar, as well as to support their research.

Several studies on information-seeking behaviour of students including Wijetunge (2016, 2015), Anyaogu (2014), Fasola and Olabode (2013), Oluwafemi et al. (2013), Onuoha and Obiako (2013), Khan and Shafique (2011), Onuoha and Awuniyi (2011), Baro, Onyenania and Osaheni (2010) and Ndinoshiho (2010), revealed that students sought information mainly for the purpose of updating their knowledge, preparing for examinations, contributing to the assignments, job interviews in their course of

study, writing articles, and preparing for class discussions. Oluwafeni et al.'s (2013) study found that graduates need information that is mostly scientific and technical, methodological or procedural information, and mainly from patents, standards, conference proceedings, and technical reports.

Considering that information needs of students are linked to scholarly work, personal development, health education, and employment purposes; it is important for libraries to provide their users with career and personal development and to continue to play a key role in fulfilling the educational needs of the students. Thus, the next section discusses information resources that could possibly help to address the information needs of students.

2.3.3 Information resources preferred by students

People in society and those serving various professions use information resources to address their information needs and to gain knowledge about personal interests.

A study by Sternberg (2001) highlights the important role of information professionals in the learning environments to carry out assessments of information needs of their users and to plan well for their information provision. Information houses should play an important role in ensuring that information is not restricted for access and use, and at all times, they should respond to and meet the information needs of their users.

In an academic environment, Gunasekera (2010:43) has described academic libraries as the "heart" of the learning community, providing a place for students and faculty to conduct their research and advance their knowledge. Since research plays a central role in the academic work of students and to the entire faculty of the university, university libraries should be considered the most important resource of an institution of higher education. Therefore, it is important for any information professional working in an academic or any other library to know and understand the information resources preferred and used by the targeted group or the users they

serve. This should help build the library as an institution to select, preserve and make available information resources that are essential to users' academic activities.

It is believed that if students are aware of the information resources available in the library, and have the ability to search and obtain information through the library collection it adds substantial value to their learning process (Wijetunge, 2016:77).

The study by Okite-Amughero, Makgahlela, and Bopape (2014) indicates that, globally, today's academic libraries provide online services to their users. They highlighted the current popular library services, which are access to online databases that consist of electronic resources such as electronic journals, e-books, e-theses, and dissertations. It has also been noted by Tyner (2014) and Ji, Michaels and Watermen (2014) that electronic resources provide many advantages over traditional printed based resources.

Similarly, Ileperuma and Mudannayake (2008) found that there is an increasing trend to use the internet among agricultural students at University of Peradeniya. It was also discovered by Peiris and Peiris (2012) in their study on postgraduate students at the same university that the use of electronic information resources, specifically web pages, has become the highest accessed resources and this is followed by online databases. Furthermore, Wijetenga (2015; 2016) shows a significant improvement on the use of information resources by students and further indicates that the most often used resources were the digital resources such as search engines, Wikipedia and that only few turn to full-text databases frequently. This was followed by human resources including their peers, scholars in the field, friends and family members. Lastly, students preferred printed resources which were recommended readings from their lecturers, library collections and their personal collections.

A study by Dilrukshi (2014) on the usage of online journals by agriculture undergraduates in their fourth year of study at Rajarata University of Sri Lanka,

confirmed that the majority preferred using online journals while few students favoured print journals. In a similar study conducted in India by Natarajan (2013), it is shown that students prefer the internet, followed by e-journals and e-books, textbooks and finally printed journals as sources to address their academic information needs.

A study on information-seeking behaviour of graduate students of Abeokuta Agriculture University, in Nigeria conducted by Oluwafeni et al. (2013) revealed that graduates rely more on electronic resources when searching information for their projects. They consulted variety of the library collection's subject-based e-journals such as AGORA (Access to Global Online Research in Agriculture), HINARI (Health InterNetwork Access to Research Initiative), JSTOR (Journal Storage), Emerald, EBSCOHOST, National Virtual Library in Nigeria, AJOR (American Journal of Operations Research), and CD-ROMs (Compact Disc-Read Only Memory) including TEEAL (The Essential Electronic Agriculture Library). CAB Abstract, CABI (Centre for Agriculture and Biosciences International), e-granary and e-books (depending on students' disciplines and levels) were also consulted. They pointed out advantages of the electronic resources in that they provide access to information that might be restricted to the users because of geographical location or finances. Other than that, they also provide access to current information as these sources are often updated frequently.

Printed library resources such as handbooks, reference materials, and previous students' projects were also consulted. A study by Lee, Paik and Joo (2012) on information resources selected by undergraduate students during their academic search tasks revealed that undergraduate students prefer online resources accessed via search engines, individual and organisational web pages, scholarly databases, institutional repositories, and social question and answer services. This preference is followed by their colleagues or friends, academics and experts in the field, family members. Librarians were seldom consulted. Thereafter, printed publications such

as books, research reports, magazines, and lecturer notes were also referred to. The mass resources such as internet and television broadcasting were the least consulted resources.

Factors that were involved and influenced the information resources selections by the undergraduates were because of credibility, timeliness, and easy and quick access to information resources. In addition to a preference for using a library collection for their projects, students believed that the library validates the information from the internet; it has a proven authority in relation to what is stocked. Moreover, the library is able to track developments of its resource subscriptions. Another study by Adio and Arinola (2012) on information-seeking behaviour of senior agricultural students at Ladoke Akintola University of Technology (LAUTECH) in Ogbomoso, Nigeria established that students preferred the internet, followed by textbooks, theses and dissertations, and CD-ROM databases. Ndinoshiho (2010) indicated that some libraries have introduced and advanced in information and communication technology (ICT), and this has thus changed the way in which information for academic research is accessed and disseminated. He concluded that the academic world has reached an era where printed materials for research are being gradually replaced by electronic materials that can be accessed via the internet.

While most of the information needed by the students was related to scholarly content, the researcher has noted that there was no steadiness pattern on preferred information resources. By comparing the following studies with the above-mentioned literature, studies such as by Chaura (2015), Fasola and Olabode (2013), Onuah and Obiako (2013), Khan and Shafique (2011), and Ndinoshiho (2010), revealed that students were still relying on the traditional library resources. From these studies, one deduced that students rated textbooks, newspapers, lecturers' notes and hand-outs highly, and it is surprising to note that printed thesis or

research reports, e-databases, CD-ROMs and audio-visual materials, government publications, and annual reports were less preferred.

Although there has been exponential growth in electronic resources, and significant budget cuts in many academic libraries; they have been allocating a substantial amount of their annual budgets on subscriptions to online resources in the interest of meeting users' information needs. Mapulanga (2012) conducted a study on adequacy or inadequacy of budgets for the University of Malawi's libraries, and he noted that university libraries in the country were heavily underfunded, resulting in libraries failing to procure needed resources and to subscribe to latest resources. This was also noted by Chaura (2015) on the study of information-seeking behaviour of final year students at Mzuzu University in Malawi. As a result of a serious shortage of essential and prescribed textbooks, students rely on few printed library resources that are mostly on a reservation at short loans desk. It was disheartening to learn that Mzuzu University Library was burned in December 2015, thus exacerbating the shortage of essential resources at this institution.

The researcher has discovered that studies conducted in developed countries have shown that electronic resources have become popular as preferred resources. This is unlike in Africa, where students were still relying on printed materials recommended by either their lecturers or colleagues, with a very low usage of electronic resources. These findings may be a result of university libraries in Africa still being heavily underfunded and having to operate in countries with poor internet infrastructure. These factors can result in libraries failing to procure needed resources and to subscribe to the latest resources as noted by Mapulanga (2012). Moreover, a concern was raised by Malekani (2006) that many of the information services offered in African academic libraries were not used effectively due to lack of awareness among many students. Hence, the next section will discuss the information-seeking patterns adopted by students in searching for the information to address their academic information needs.

2.3.4 Information-seeking patterns adopted by students

This section looks at the way students seek information to address their information needs. Pareek and Rana (2013) indicated that information is very important to every aspect of today's information society or to human beings. The process of acquiring, using and implementing information is known as information-seeking behaviour. In the case of academics, researchers and students it is even more important because they need accurate and current information for their academic and general activities. As Wilson (2000) describes information-seeking as a way individuals seek, evaluate, select, and use information. In the course of seeking new information, the individuals are expected to interact with different people, and use various information retrieval tools and computer-based information systems (Bhatia & Venkata, 2011).

With information-seeking considered as a basic activity in the academic world, it is often an aspect of scholarly work of most interest to academic librarians. Therefore, academic libraries and librarians should strive to develop collections, services, and organisational structures that will facilitate and offer relevant information to their users to boost their academic performance and achievements. This was also noted in Ndinoshiho's (2010) study where he indicates that library collections comprise of electronic and printed resources. For this reason, he notes and applauds some libraries on investing sufficient time and resources to orientate their students. On the other hand, he observes that there are libraries which provide only perfunctory training and expect the students to know and improve their skills on their own. Therefore, Ndinoshiho (2010) appeals to libraries and librarians, in particular, to make sure that these libraries' resources are optimally utilised to contribute to the academic achievement of students and academics.

Since students ought to be interested in keeping up with the current developments in their concerned fields of study and elsewhere, Fasola and Olabode (2013), Nwobasi et al. (2013), and Onuaho and Awoniyi (2011) discovered that students visit

their university's or faculty's libraries to satisfy their information needs. With students making use of libraries to access information for their academic activities and for general knowledge, variety of resources and multi-purpose study space is essential. A study by Bhatia and Venkata (2011) on information-seeking behaviour of graduate students in digital environment indicates that students' principles were based on the least effort, and they aimed to retrieve resources that are easy and have the simplest methods of use, rather than accessing advanced databases with difficult search requirements. Studies by Baro and Fyneman (2009), Melvin (2006), and Callinan (2005) discovered that undergraduate students locate resources through browsing the library collection on the open shelves without making use of the library catalogue.

The above literatures reveal a calibre of users that do not know the items or answers they were searching for. They did not feel comfortable with formalised resources and thus found it difficult to formulate a query to the information retrieval tools or systems. They rather opted for resources that are easy and fast to use. Taking into consideration the above-mentioned findings, Wijetenga (2016) raises concerns that most students are believed to lack basic knowledge and skills in using resources available in the library. That is the reason why most students opt for internet searching because they believe that is the most effective and easy method of obtaining information. Ogba (2013) also shared a similar discovery that students lack knowledge on finding quality materials to use and do not have organisational skills for their research needs.

The interesting part to know is Oluwafemi et al. (2013), Khan and Shafique's (2011) findings that the most important thing to students when they have information need, is to have a general idea of their topic. In addition to that, they use leading scholars, lecturers, peers, colleagues in face to face discussions, and casual discussions among peers and research groups because they are considered organised and reliable. It was believed that academics shape students' information-seeking and

learning approaches which are the foundations of their research works. Students also admitted to investing trust in academics as they showed cooperation and willingness to assist.

Nicholas et al. (2009) provide evidence on the actual information-seeking behaviour of students in a digital scholarly environment. They showed that their undergraduates and postgraduates were the most likely users of library links to access scholarly databases.

There are concerns in literature raised by scholars such as Pareek and Rana (2013) and Foster (2010) that references to relevant materials are identified through following the citations from journals in hand rather than utilising indexing and abstracting services. The researcher has noticed academic scholars have different ways for searching information when compared to their students. Seemingly, both academics and students do not view librarians as useful in their information-seeking process. Ossai's (2009) study on Nigerian students revealed that students do not make use of retrieval tools such as OPAC in accessing library resources. Students opted for going directly to the shelves, by moving around until they find any book related to their area of study. In this case, students avoid seeking any form of relationship with library staff.

Furthermore, the study by Brindesi, Monopoli, and Kapidakis (2013) on information-seeking and searching habits of Greek physics and astronomy undergraduate students revealed that majority of students use search engines, and browse library shelves with low usage of OPAC.

Since students are interested in keeping up with the current developments in their fields of study, Natarajan (2013:108) suggests that libraries should "employ [the] latest techniques for educating and disseminating of current awareness services such as short message services (SMS), instant messaging, bulletin boards, and use of social media platforms". The above-mentioned platforms should be used in educating the

importance of accessing and using library-subscribed resources, and on the vital role library services and products play towards their academic work. At the same time, the intense education to library patrons will discourage students in using the unreliable resources which mostly lack authority. The following section tackles the challenges and barriers experienced by students when accessing the library collection.

2.3.5 Challenges and barriers experienced by students when accessing and using library collection

Access to information resources, facilities, and services in any academic libraries is of huge importance. This section highlights the barriers and challenges encountered by university students when accessing and using libraries' collections, facilities, and services. These could be viewed as "physical or immaterial obstacles hindering, delaying or preventing access to information, which is, information-seeking, searching and using" (Swigon, 2011:475). The barrier to information search is also defined by Ogba (2012) as an obstruction and limitation which impacts a person who is seeking information or who intends seeking information. All these can be aligned to limited access to information resources and the ability to satisfactorily access and use information resources given that academic library users need information for education, training and research to address their information needs. It is believed that students were overwhelmed with the number of units they have to cover when completing their projects and, therefore, students are expecting easy retrieval of resources and smooth access to library services, resources and facilities to access the resources.

While countries worldwide are plagued by social-economic and political problems; the education sector, which includes libraries, suffers neglect and ends up being given little attention by governments. As a result, the provision of library services is hampered as libraries are failing to meet their target goals. With the explosion of new information and communication technologies, trends regarding access to information resources are changing. New information providers are emerging and

libraries can no longer continue assuming that they are the only information providers. They should focus on creating a barrier-free information access and retrieval. However, looking at the literature, the fact of the matter is that academic libraries have not provided adequate services that ensure maximum access and retrieval of their information resources as will be shown in the following paragraph.

Okile-Amughor, Makgahlela and Bopape (2014) show that postgraduate students are aware of the library resources, especially electronic resources, but that they are hindered by the lack of skills, limited space in the library, poor internet connection on campus and the unreliable power supply when accessing these resources. Similarly, Fasola and Olabode (2013), Nwobasi et al. (2013), Natarajan (2013), Syvalahti and Katjihingua (2012), Bhatia and Venkata (2011), Khan and Shafique (2011), Korobili, Malliari and Zapounidou (2011), and Onuaho and Awoniyi (2011) reveal that barriers and challenges facing students when seeking and accessing library collections are a lack of internet facilities and connections, lack of time among students, and inadequate and irrelevant library materials. The library staff are criticised for being unsupportive, having negative attitudes towards their patrons, and lacking training in and knowledge of using e-resources. The studies further indicate that information is scattered in too many sources. The libraries are also noted to contain outdated information and library patrons are unable to use retrieval tools. Students also raise their concerns about their lack of awareness of existing resources in the library, the unavailability of full-text articles, lack of full-text access to older journal articles, and difficulties in accessing electronic information from home. Therefore, libraries should develop better tools and techniques for organising and managing library materials for easy access. They should also try to acquire electronic resources because electronic resources are invaluable given that they complement print-based resources in any traditional library.

Colon Aguirre and Fleming-May (2012) gave several reasons for students' low use of the library resources such as lack of time, confusion over how to begin the search for

resources and how to locate materials, and also being intimidated by library staff when seeking assistance from them. Adio and Arinola (2012) equally discovered that the unwillingness of the library staff to assist students, the inadequacy of library opening hours and lack of relevant books influences the use of the library by the students.

Similarly, Ogba (2013) conducted a study on information-seeking behaviour of final year law students in south-western Nigerian universities and revealed that students do not have adequate organisational skills for their research needs. They experience difficulties in constructing research search queries and are unable to select the right resources and lacked information skills in the area of evaluation of resources. All these led to students' struggle to correctly use the information due to limited information literacy skills. Additionally, law students complained about a lack of indigenous Nigerian material available online since they are expected to study local content. The above-mentioned barriers were also noted in studies conducted in the 2000s such as Baro and Fyneman (2009), Melvin (2006), and Callinan (2005). In the absence of computer systems, libraries were possibly still relying on manual tools in information retrieval which may have led to poor and slow retrieval also contributed.

Although studies had indicated the emergence of the popular use of electronic resources among students, it is worrying that accredited, digital resources, which were made available after significant expenditure by libraries, are the least used resources in many libraries. It was noted by Wijetenga (2016) that during the time s/he conducted his/her study their library subscribed to agricultural subject-based resources such as CABI in CD-ROM format, AGORA, and JSTOR online journals. Even though the resources were meant to be accessed by students, Wijetenga identified the low use due to factors such as CABI requiring frequent change of CDs to search and that the CDs are only for in-house use. Access to JSTOR is provided only through IP authentication which means that students have to use the database

within the university premises, and access to AGORA requires a password which is only known by library staff.

2.4 Summary

Reviewing related literature to this study has proved that much has been written on the information-seeking behaviour area. Nevertheless, findings derived from the reviewed literature revealed that among the targeted academic library users, there is a need for the libraries to develop information skills training that will enable students to identify, evaluate and use information effectively. Studies conducted in the African continent illustrated the struggle users experience due to computer shortage and unreliable internet connections in some university libraries. It has been noted in some institutions, which have improved with the current upgrade of information communication technologies, that students now have their personal computers and therefore do not rely heavily on campus computers. It is strong systems with suitable information resources that will match and address the information needs of users and hopefully resolve challenges faced by the library's patrons. Considering the above research, the value of establishing the current context at the Neudamm Campus Library is apparent.

Chapter 3

Research Methodology

3.1 Introduction

This chapter gives a detailed description of research methods and design that was followed to collect data, the population under study, sampling procedures and the research instruments used in the study.

3.2 Research approach

According to Creswell (2014:03) research approaches are "plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation". Therefore, when a researcher is selecting or choosing a research approach, s/he should consider the research problem and questions for study, their personal experiences, resources and the target audiences (2014:03).

The research process can take quantitative, qualitative or mixed methods approach. Quantitative studies test numbers and mostly use open-ended questions in data collection. Creswell (2014:04) indicates that "it tests objective theories by examining the relationship among variables" with an emphasis on greater sample size making it possible for generalisation of findings.

Qualitative studies are inductive and exploratory in nature and they seek to establish the meaning of phenomena from the perspective of the participants (Creswell, 2014:19). Mnubi-Mchombu (2013:85) indicates that a qualitative approach aims "to reveal the nature of certain situations, processes, relationships, systems or people". It has more flexible guidelines and the outcome is not predetermined. Therefore, the researcher may not generalise from the findings.

Both approaches have strengths and weaknesses. Consequently, the mixed methods approach emerged in the 20th century. This is "an inquiry involving collecting both quantitative and qualitative data" as a way of complementing each other (Creswell, 2014:04). According to Ngulube (2015:124), mixed methods research is "the realm of multi-paradigms" because it employs both the positivism and the interpretivist paradigms. It combines the strengths of the qualitative and quantitative methodology and produces a comprehensive broad-based research. Combining two approaches empowered researchers in social sciences to go beyond the qualitative - quantitative approach so as to answer various research questions in a more effective manner.

This study took the qualitative approach and deals with the underlying qualities of subjective experiences and the meanings associated with information-seeking behaviour of FANR students at Neudamm Campus, UNAM. In using this approach, the researcher obtained in-depth information because this approach gives the opportunity to understand the "why", "what" and "how" of phenomena (du Plooy-Cilliers, Davis & Bezuidenhout, 2014). Alternatively, one may say it explores experiences, meanings, perceptions and feelings. The qualitative approach concentrates on fewer cases, covers multiple issues and assembles the required information from fewer respondents (Kumar, 2011). Creswell (2014) adds that in this research approach, the sample is purposively selected, data collection is done in the participants' setting, and the outcome of the study may not be generalised.

Creswell (2014:185) highlights some of the characteristics that define qualitative research such as natural setting, researcher as the key instrument, multiple sources of data, inductive and deductive data analysis. The researcher considered the naturalistic setting and multiple sources of data; as such data were collected in the field at the site where participants experience problems under study. More importantly, data collection involved interviews with postgraduates and academic staff, and focus group discussions with undergraduate students. Seeing students

behave and act within their context is one of the major characteristics of qualitative research. The aim of these focus group discussions and interviews was to see how students behave and interact with each other. Each focus group discussion consisted of seven to twelve students from the departments of Agricultural Economics and Extension, Animal Science, and Food Science and Technology.

Furthermore, most of the information-seeking studies had either used the mixed method or quantitative approach. Examples are Mabhiza (2016), Chaura (2015), Nel (2015), Anyaogu (2014), Matsveru (2013), Oluwafeni et al. (2013), Bitso (2012), Mnubi-Mchombu and Mostert (2011), Chiware and Dick (2008). Most of the studies that used mixed methods involve surveys research design. Case (2000) opines that survey research methodology has been the dominant method in information-seeking behaviour studies. However, studies conducted in the 2000s such as Kurupu (2006) and Case (2002), raised concerns about the reliability of surveys because they depend on the respondents' honesty and accuracy. They point out that by gathering data on information needs or information-seeking behaviour of users through surveys, can be described as the disconnect between the type of questions asked in the surveys, the respondents' understanding of questions and the investigators' interpretation of responses. In light of the above, a purely qualitative approach was followed because it was envisaged this would assist the researcher to get sufficient and more contextually detailed data that would include student's experiences, understanding, and feelings given the theoretical framework of this study. Studies that used a similar approach include Chataira (2014), Ogba (2013), Oluwafeni et al (2013), Liew and Ng (2006).

3.3 Ethical considerations

Ethical conduct is a fundamental aspect of research integrity especially where humans, animals and the environment are involved. As part of the ethical conduct, the researcher was issued with ethical clearance certificates from the host institution

of study, the University of Cape Town, and the data collection institution, University of Namibia. As the study involved human subjects, ethical clearance meant examining the instruments and research procedure to make sure that no harm would be done to the respondents either physically, emotionally or otherwise; and that the researcher would conduct the process with integrity, respect and awareness of the dignity of the participants. The participation of respondents was voluntary and no penalty was imposed for refusal to participate or stopping participation in the process. Information gathered was treated with confidentiality and only used as a guideline for improving the library information services.

At the beginning of interviews and focus groups, the researcher allocated pseudonyms to each respondent so that their real names remained anonymous. The recordings for the data collected were used for research purposes only and the researcher safely stored the voice audio recorded during the interview and focus group discussions.

3.4 Population and sampling

According to Keyton (2011:121), a population is all "units, or the universe - people or things possessing the attributes or characteristics in which the researcher is interested". Similarly, du Plooy-Cilliers, Davis and Bezuidenhout (2014:132) indicate that all the people or the social artefacts in the population should share at least one specific characteristic that relates to the research questions. The study's universe is all FANR students at the University of Namibia. UNAM 2016 registration statistics showed that FANR has 811 undergraduates, 22 postgraduates, and 71 academic staff (University of Namibia, 2016). In view of the title and focus of the study, the population of the study is FANR students at Neudamm campus which formed the sample of this study.

Kumar (2014:24) proclaims that the accuracy of a study's findings depends upon the way the researcher selects a sample. The present research did not cover the entire

faculty (FANR), but rather focussed on 35 fourth-year undergraduate and 7 full-time postgraduate students at Neudamm Campus.

The decision to focus only on Neudamm Campus was based on the fact that the researcher is a subject librarian on this campus. The population of the study at Neudamm Campus is taken as specific reference that forms the purposive sample of the study worthy to called a case.

de Vos et al. (2011:232) call purposive sampling "judgemental sampling". Purposively sampling technique "ensures that each element of the sample will assist with the research because it fits with the population parameters of the study" (du Plooy-Cilliers, Bezuidenhout and Davis, 2014:136). The researcher feels that as a sample, the Neudamm Campus is composed of elements that contain the most characteristics, representative or typical attributes of the population that serve the purpose of the study best.

As earlier stated, 35 full-time final year undergraduates, five masters, and two doctoral students formed the sample. The final year students at the University of Namibia do research projects, and the postgraduate students do more intensive research. It was envisaged that students who engage in research are likely to use the library and will be able to share their views on library facilities, services, and resources. Therefore, the inclusion of fourth year students in the study was considered by the researcher because of their maturity and level of experience; and as they would be in a strong position to make suggestions and recommendations on how to improve the information service delivery of Neudamm campus library on behalf of their peers.

For the benefit of the study and the Neudamm campus library management, the researcher included a handful of academic staff. This was meant to verify and add weight to the students' responses. The Neudamm campus is made up of a team of 33 academic staff, who are involved in research, teaching and supervising students on

undergraduate and postgraduate levels. One academic staff member from each of the four academic departments was invited to participate in the study with the aim to solicit their inputs on how to improve the Neudamm Campus library services, facilities, and resources.

The table below shows the number of Neudamm students, their year of study, and their registered departments.

Table 1: Description of the study population sample - students

Departments	No. of undergraduate and their year of study		
	2 nd	3 rd	4 th **
Agricultural Economics and Extension	5	6	4
Animal Science	24	33	17
Food Science and Technology	14	12	14
Veterinary Medicine	16	25	-
Totals	59	76	35
Postgraduate students			
Masters Students	5**		
Doctoral Students	2**		
Totals	7		

**The group that made a sample to the main study

Since the study included academic staff on campus as respondents, the following table shows the number of academic staff as per their working departments.

Table 2: Description of the study population and sample - academic staff

Departments	Number of Neudamm Campus academic staff and their working departments	
Agricultural Economics and Extension	6	1**
Animal Science	9	1**
Food Science and Technology	7	1**
Veterinary Medicine	11	1**
Totals	33	4

**The group that participated in the study

Although the researcher wished for all 35 final year undergraduates' students to participate in the study, only 28 students managed to be part of the study. The first two focus groups each comprised of 12 students and the last one of only four students. The study recorded the attendance of 16 students from Animal Science, 11 from Food Science and Technology, and 1 student from Agricultural Economics and Extension. All seven targeted postgraduate students and four academic staff members participated.

3.5 Data collection

Data collection is one of the most important aspects of any research study and researchers are urged to take great care when conducting this exercise, because if the data is collected incorrectly it will lead to invalid results. Thus, Neumann (2011:47) states that "it takes a skill, practice, and creativity to match a research question to an appropriate data collection technique".

3.5.1 Data collection instruments design

The focus group discussion schedule for undergraduate (Appendix A2) and one-on-one interview schedule for postgraduate students (Appendix B2) respectively were

designed according to the main theme of the study coupled with guidance from the theoretical framework. They addressed issues on information needs, information use, and students' preferred information resources and information-seeking patterns; and the inputs on how to improve Neudamm campus library facilities, services, and resources. Challenges and barriers encountered by students when accessing and using Neudamm library were not left out. Additionally, the themes used in the design of the academic staffs' interview schedule (Appendix C2) served to gain insight into the information needs, information use and information-seeking patterns of the students. This included insight into the limitations and challenges faced by students when using and accessing information in the campus library. The questions were also informed and guided by Kuhlthau (2004) Information Search Process model.

3.5.1.1 Focus group discussions

A focus group is one of the qualitative data collection techniques that Kumar (2011: 127) refers to "as a form of strategy in which attitudes, opinions or perception towards an issue, service, or a programme are explored through free and open discussion between members of a group and the researcher". In this process, it is not an alternate question and answer as in the traditional interview. Instead, the researcher becomes the facilitator, moderator, monitor and also a recorder of the group members' interactions. It is noted that a well-facilitated group's interaction can assist in bringing to the surface aspects of a situation that might not otherwise be exposed (Punch, 2014:147). Moreover, de Vos et al. (2011:341) conclude that focus groups could be meaningful because opinions or ideas that are not likely to emerge in the one-on-one interview are more likely to come out in focus groups. This is because group dynamics can be a catalytic factor in bringing information to the fore. This is important in a study that is investigating the information-seeking behaviour. Punch (2014:147) noted that a group's situation does stimulate members in making explicit their views, perceptions, motives and reasons. Therefore, focus group

discussions were preferred as the researcher wanted to probe aspects of people's behaviour.

The advantages of using focus groups discussions are that they are economical, data-rich, flexible, encouraging, cumulative and elaborative (Punch, 2014:146). Peers, when they are in groups, are more comfortable in voicing opinions in each other's company than on their own with the researcher. Participants were provided with an opportunity to reflect or react to the opinion of the others that they may disagree with or of which they are unaware. The researcher had an opportunity to ask the respondents to elaborate on the parts of the discussion that interested the researcher and that were not clear.

Focus group discussion is not really favourable to reserved or quiet participants. The researcher worked hard to control the domineering members and encouraged quieter participants to share their opinions. Kurupu (2006) raises a concern that if the facilitator is affiliated with the institution, participants may not be free to share criticism or negative impressions in order to avoid hurting the feelings of the facilitator. Similarly, the facilitator may be biased and concentrate on positive contributions from participants and deliberately ignore recording negative impressions. In this case, the researcher prepared open-ended questions (Appendix A2) used as a guide during focus group discussions. It guided the researcher throughout the entire discussions. All the discussions were recorded with an audio recorder.

3.5.1.2 Interviews

As stated by de Vos et al. (2011:65), a qualitative researcher needs to gather multiple forms of data from different data sources. In this study, the researcher also conducted interviews as a tool in the data collection process. De Vos et al. (2011:342) define an interview "as a social relationship designed to exchange information between the participant and the researcher". Interviewing is considered as a preferred mode of data collection in qualitative research. This method enables the

interviewer to involve the interviewee in discussion and explore his/her perspective on a particular idea, programme or situation. Interviews allow the researchers to get the first hand information directly from some knowledgeable informants. In this study; this was achieved through seven postgraduate students and four academic staff who were the informants. Interviews allow the researcher to interpret and understand the meaning of respondents' answers to questions. During an interview, the respondent can clarify and provide a more detailed explanation.

Matsveru (2015), Chaira (2015), Mchombu and Mostert (2011), and Chiware (2008) use this technique in their studies. The semi-structured interview with open-ended questions was used in order for the researcher "to gain a detailed picture of a participant's beliefs about, or perceptions or account of, a particular topic" (de Vos et al., 2011:351). The semi-structured format allowed the interviewer to ask several broad questions regarding each participant's experience in finding, utilising and accessing library services and information. This engaged participants in conversation and allowed them to best express their views and experiences.

This technique was selected and used with the academic staff and the postgraduate students with the aim of learning more about their views, opinions and attitudes towards their information-seeking process. During these one-on-one interviews, the researcher was in possession of an interview schedule comprised of open-ended questions.

3.5.2 Data collection process and administration of instruments

The researcher was issued with ethical clearance certificates from both the host institution, the University of Cape Town, (Appendix D), and the University of Namibia (Appendix E) where data collection occurred. Upon arrival at the University of Namibia' Neudamm campus, the researcher briefed the Neudamm campus's deputy dean about the study and all the intended activities. A general communication (via email) was sent by the deputy dean to Neudamm campus academics and students leaders representing the academic affairs as an introduction

of the study to the participants so that they know that the research has been granted permission. The researcher then consulted undergraduate students' class representatives to assist in gathering their peers for the intended activities. In the case of postgraduate students, the researcher contacted them telephonically and appointments were secured. Emails were sent to individual academic staff requesting their voluntary participation in the study, and the consent forms were given to all participants prior to participation.

Data collection process commenced on the 7th September 2016 and ended on the 29th September 2016. The exercise was completed as scheduled. The undergraduate students were grouped per department for them to be comfortable with each other. Due to the low number of Agricultural Economics' students, they were combined with a group of Food Science students. Postgraduate students and academics staff attended one-on-one interviews. The study recorded 77% attendance from undergraduates, and 100% from postgraduate students and academic staff respectively. Before any of the meetings resumed, the researcher briefed all the participants about the main objectives of the study, and the consent forms (Appendices A1, B2, & C2) were distributed among the participants and signed upon agreement. Unique identifications were given to the participants to hide their identifications. Undergraduate students were identified as UG1 to UG28, postgraduate students as PG1 to PG7, and academic staff was AC1-AC4. Meetings were conducted in the library for the undergraduate and postgraduate students, with the shortest meeting lasting for 55 minutes and the longest one for 65 minutes. Interviews for academic staff were conducted in their offices. The shortest and longest meeting durations were 20 and 47 minutes, respectively. All parties agreed to be recorded.

3.6 Pre-testing of research tools

The researcher conducted a pre-testing of the research instruments to determine whether the respondents understood, and would be able to make meaningful responses to the questions in the interview and focus group discussion schedules. This exercise was relevant to the study for the researcher to identify any omissions, redundancy, ambiguity and if there were any irrelevant items in the instruments. Of utmost importance, the pre-testing allowed the researcher to test her aptitude and agility in conducting interviews and focus group discussions.

Third year Veterinary Medicine, Food Science, and Animal Science students at Neudamm campus and FANR postgraduate students who were based at Windhoek main campus were requested to be part of the pilot study. Furthermore, an academic staff member from the Department of Food Science and Technology, at Neudamm campus participated in the pilot study. Third year undergraduate students were selected due to their intensive commitment towards their studies. These groups also use the library facilities, services and resources extensively. Therefore, they were considered to be in a good position to make a sound judgment. There were six students that participated in the pilot study. It was clarified beforehand that participants were not part of the main study, but were participating in a pilot study that aimed to pre-test research instruments. Participants were asked to comment on the appropriateness, language, length and the setup of the schedules. The pilot study's findings could not be shared in this paper due to word limit of this dissertation. The feedback was put into consideration before commencing with data collection of the main study.

3.7 Triangulation

Triangulation is the act of bringing more than one source of data to bear on a single point (Marshall & Rossmann, 2016:262). This can be used to collaborate or elaborate on the research in question and to strengthen the study's usefulness in other settings.

The present study used two instruments, focus group discussions with undergraduate students and interviews with postgraduate students and academic staff. These presents three different groups of respondents, and the instruments were designed with similar themes derived from the research main objectives of the study.

3.8 Data analysis

De Vos et al. (2011:397) define qualitative data analysis in research "as a process of bringing order, structure and meaning to the mass of data". It typically involves reducing the volume of raw information, sifting significance from trivia, identifying significant patterns and constructing a framework for communicating the essence of what the data reveals.

In the world where information technology is rapidly advancing, and with limited time available, the researcher identified NVivo software - a computer-based software that analyses qualitative data – as a tool for analysis. Unfortunately, the researcher found NVivo cumbersome to use and, therefore, after the completion of field work, the researcher transcribed all the discussions by herself. In the process, she made notes of all the new issues that emerged and also that occurred frequency in the discussions. Themes that linked to the research questions and those that emerged were identified and grouped accordingly. The basic use of NVivo Software partially contributed to the process of arranging data into themes for proper analysis.

3.9 Validity and reliability

Although validity can be applied to the entire research process, the researcher looked at the validity concept as applied to research instruments used in collecting data for the main study. This is needed because researchers are asked if they had established the appropriateness, quality and accuracy of the procedures adopted in finding answers to the research questions.

The study is qualitative in nature and researchers embrace their involvement and role within research but what is needed is for them to test and demonstrate that their studies are credible, and that the researcher has the ability and effort to conduct such studies. In ensuring the "ability of a research instrument to demonstrate and acquire the desired finding as what is designed to" (Kumar, 2011:184), the study used two prominent qualitative data collection tools: interviews and focus group discussions which consisted of semi-structured open-ended questions. These were designed with the similar themes as those of research objectives, and guided by Kuhlthau's (2004), Information Search Process Model. This ensured the validity of the information because it offered a guideline about the constructs that the researcher intended to measure.

3.10 Summary

This chapter gave a summary of the research approach adopted by the study. It discussed the qualitative approach and how it was suitable for investigating the information seeking behaviour of FANR students. It further gave an overview of the study population and the sample that participated in the study, as well as how the data were collected and analysed. Ethics, pre-testing, validity and reliability were also highlighted. The following chapter presents the finding of the study.

Chapter 4

Data Analysis and Presentation of Findings

4.1 Introduction

This chapter presents data and findings of the study that emerged from the participants' responses in the focus groups and individual interviews. (Appendices A2, B2, & C2). A description of the respondents' profiles is also presented because of the importance of understanding the context in which the researcher gathered data and formulated her findings.

4.2 Participants' profiles

4.2.1 Undergraduate students

A total of 28 out of 36 fourth year undergraduate students participated in the study through focus group discussions. The meeting took place in the librarian's office, free from any form of disturbance and interruptions. The first discussion group consisted of 12 students; the second group had 10 and the last had 8 students who turned up. The longest discussion lasted for 65 minutes and the shortest was 55 minutes.

Students were asked to share their research areas and stages of their research projects. Majority of them were busy with intensive data collection in the laboratories as well as data analysis; and expected to submit their final reports in October 2016.

Students were focusing on a variety of research areas. As this research discusses access to resources within the library, these areas are listed here. This is because they are the subject areas that students would be hoping to be able to access information at the library. The focus areas are:

Animal Science: Animal feeds and nutritional contents, nutrient profiling in legumes, animal genetics, food supplementation of livestock animal nutrition, consumer acceptances towards game products, reproductive performance of dairy cattle, Q-fever among small ruminants, growth rate of chicken breeds, effect of powder milk on piglets, pharmaceutical screening of indigenous medicinale plants.

Food Science and Technology: Food-borne diseases, chemical compositions and cause of instability in sour milk, sensory properties and food quality, anti-oxidant stability, sensory evaluation, value addition to local food products, product developments, and Micronutrients.

Agricultural Economics and Extension: Determining the cost of farm products

4.2.2 Postgraduate students

All seven postgraduate students participated in the study through one on one interviews. They were comprised of five masters and two doctoral fulltime students. The longest interview lasted for 66 minutes and the shortest was 25 minutes. Some interviews meetings took place in the librarian's office, while one took place in the respondent's office.

The study found that most students were writing up their dissertations and hoping to complete and submit at the beginning of 2017. There was one masters' student working on his research proposal and planning to present it to the faculty before the end of 2016 academic year. Furthermore, all doctoral students indicated that they were also hoping to submit their work in mid-2017. It transpired that one of the postgraduate (doctoral) students was not based at Neudamm Campus but regularly visits the campus because the supervisors were based at Neudamm Campus.

In the same note, postgraduate were also asked to share their research areas. Interesting enough, all the masters students were from Food Science and Technology and doctoral were from Animal Science department respectively. Food Science master student's research areas were on foodborne diseases, sensory and food

quality, anti-oxidant stability, chemical compositions and cause of instability in sour milk, and sensory evaluation; while Animal Science students research topics were focussing on tick-borne diseases, and animal feeds and nutritional contents.

4.2.3 Academic Staff

The academic staff that participated in the study are involved in teaching and supervising both undergraduate and postgraduate students. The university also stipulates that they conduct academic research. They serve Neudamm campus academic departments such as Agricultural Economics and Extensions, Animal Science, Food Science and Technology, and Veterinary Medicine. In addition, they indicated that they served the faculty for 18, 15 and 3 years respectively and each supervised up to three research students per year.

All the meetings happened at their respected offices, the shortest interview was 20 minutes and the longest lasted for 47 minutes.

4.3 Information needs

The findings revealed that students are triggered by various information need to seek information. The study discovered that undergraduate students need information to write assignments, prepare for class tests and examinations, and complete their research projects. They further indicated that they need information to be abreast with current news.

I seek information to answer to my assignments, prepare for class tests and semester examinations (UG4)

I seek information to upgrade my knowledge (UG20).

On the Postgraduate students require information for their research projects. This includes information on how to write research proposals, research methodology for dissertations, how to write applications for funding, as well as how and where to publish their research.

I seek information to address my academic queries, I am busy with my research projects, therefore I familiarise with what other scholars wrote related to my field (PG4).

A student of my level, apart from seeking information related to my research projects, I seek information on how to apply for funding, and also find out which reputable journals in my field for publishing (PG7).

4.4 Information seeking patterns

4.4.1 Online searches

Data shows that undergraduate students, in this study, first search Google for general understanding as they find it easier to use and understand information therefrom because it is presented in simple language. Undergraduate students reported that information accessed via Google paves their way in formulating the search query using appropriate keywords. They use the information they find through Google to expand their search in other databases such as JSTOR, Science Direct and CAB Abstracts using terms that emerged from the original Google search. In the process of searching databases, some students said that they use keywords or formulate a question based on the information they hope to retrieve. It was also found that others write the search query plus a suffix PDF or PPT so that they retrieve pdf documents or PowerPoint slides. In explaining their approaches to search process, students reported the following:

I write the whole research topic into the Google search column for better understanding (UG10).

In most cases I read those related to my topic and concentrate on the part of the article e.g. methodology or findings and discussions sections (UG24).

First I scan the first page of the listed records and select those relevant to my topic (UG7).

I consider those in PDF and PPT, especially the first listed (UG26).

In my case if I retrieve lots of hits, I narrow my search or re-formulate my query or try another database (UG10).

In the case of postgraduate students, students were accessing online resources through the databases that the library subscribes to. The most accessed databases were Google Scholar, Science Direct, JSTOR, SA-publications, AGORA, and CAB Abstracts. Unlike undergraduate students who start their search through Google search, postgraduate students formulate their queries according to their information statements. They break down the research statement into keywords. One respondent mentioned that she combines keywords with Boolean operators:

I break down my search query into keywords and also use Boolean operators e.g. Nutrients AND Pearl Millet (PG4).

4.4.1.1 Retrieval of volumes of hits during online search

While majority of students indicated that they experience limited and restricted access to relevant and up-to-date information, students indicated that they were not bothered by retrieving too much information or lots of hits. Rather, they selected relevant and recently published articles. Even though majority of postgraduates have confidence in information searching, they expressed the need for the library to assist them through group sessions or as individuals with extensive searching of databases. A similar plea was raised by undergraduate students. They suggested that the library offers regular group or individual training depending on the level of students' understanding. Some students suggested that the library produce videos for them to watch at their own pace. They expressed that they would like this training to start when they are in second year of study because that is when assignments gets more intensive. They would like lessons on different topics such as what resources are available in the library and how to find resources relevant to their research. The intensity of library training sessions should increase further into third and fourth year. Students were clear in requesting assistance:

Yes, indeed I still need additional assistance or lesson or sessions like the one that was organised with CABI team. It was useful (PG5).

Yes, the assistance is needed more specifically on the database's search; to be guided on how I do it. Library should carry out training sessions per semester (PG6).

I want to be taught by a librarian in front of a computer just like our lecturers give us lessons, librarians should be at liberty to guide a student on resources suitable for their research e.g. books or databases (UG14).

4.4.1.2 Involvement of other people in the information-seeking process

Students were asked to share with the researcher their approach when seeking information that would meet their specific needs. The researcher asked if they work alone, collaborate with others, or request other people to find information on their behalf; and what influences their decision when seeking information.

The majority of students indicated that they were responsible for their own information searches. Students only consulted supervisors and peers doing the same modules if they failed to find the needed information individually. In group assignments, undergraduate students collaborate by sharing responsibilities among each other. For individual assignments, students assume responsibility for their own information-seeking. They indicated that they do not trust others to search for information on their behalf. Postgraduate students expressed varying approaches they take to source information.

Yes, I work alone, PhD students are told that as a student you have to become an independent thinker and analyser, therefore other people (such as supervisors) are just there to facilitate the process (PG5).

It is part of my personality, I like doing things myself (PG7).

If I fail to get relevant information, I ask my supervisor because of his expertise in the field (PG2).

There are times I am forced to consult my peers in the same department, maybe they have a better way of doing it while I am struggling. My peers are always available and reachable (PG1).

4.5 Information resources use

4.5.1 Student's perspectives

4.5.1.1 Printed materials

Undergraduate students raised mixed feelings on the type of resources preferred for effective and efficient study process. This study found that undergraduate students' usage of library resources depends on the task assigned to them. They mainly consult library books for daily lesson activities because they believe that books give more details and better explanations than articles in electronic journals. However, the majority of the undergraduates, consult online databases for their research projects because they believe that these offer the best contribution to a research need in terms of literature review, selecting research methodology, and informing the data analysis process.

In the case of postgraduate students, very few expressed dissatisfactions with printed materials and indicated that books have been very helpful in meeting their academic needs.

Both groups of students were heavily critical of the library stating that it had outdated publications, a shortage of books, and insufficient books with relevant local and regional content. Students pointed out that the library does not have printed resources to cater for their research topics. Undergraduates' student also shared their frustration that often when the curriculum is revised, there are no books that cater for these revisions and new modules. The students' frustration are clear:

Some books in the Neudamm campus library were printed as early as the 1980s. This is even against the university policy for me as student to use information published five (5) years back (UG11).

From my 1st year of study, books were always available, but now for my research projects, the collection is very limited" (UG9).

There is nothing much on printed resources catering for my research topic...but luckily, enough, magazines have been very helpful since they arrive on weekly basis (PG5).

4.5.1.2 Online resources

The study revealed that the majority of both undergraduate and postgraduate students preferred electronics resources to other resources. Postgraduate students specifically applauded the library for its online resources collection. They indicated that the library had made a breakthrough in acquiring greater access to electronic resources. Since students at any level of study are entitled to access the latest information for their research, they congratulated UNAM library for creating this access. Both student levels revealed that most of their lecturers and research supervisors encouraged them to use the latest, peer reviewed articles for their assignments and research projects. They were told to access the most reputable, accredited journals and articles written by reputable scholars in the field.

With this encouragement from lecturers, students are making use of electronic resources via the library's subscribed databases such as AGORA, CAB Abstracts, Science Direct, JSTOR and Google Scholar. Students revealed that these resources have played a major role in contributing to their research proposals, to stronger literature reviews, in their selection of methodological approaches, and in their approach to data analysis. They value that electronic resources can be accessed at anytime and anywhere; there is no need to physically go to the library. This appreciation is evident from the large number of participants who praised the role of electronic resources:

I prefer e-resources because library books are not enough to accommodate the growing student population (UG20).

I read fast on computer, thus I prefer online resources (UG1).

E-resources are really helpful, library staff trained us on how to access and even issued us with username and passwords to the databases that require login credentials. Again my lecturer advised me to use the e-resources because they have current and up to date information (UG5).

Currently, on my PG level, I hardly use printed resources. I just have this believe that the library has outdated resource. Therefore I prefer online resources (PG4).

I have been accessing databases such as AGORA, HINARI, Science Direct, SA-publications, JSTOR and Google Scholar and many databases have led me to FAO publications (PG5).

JSTOR, CAB Abstracts, and AGORA databases have been very helpful towards my research – which is on animal nutrition (PG3).

I prefer online resources because they are easily and anytime accessed, I can save them in my flash drive to refer to them in future at my own pace (PG1).

Despite the library being applauded for their online collection, both undergraduate and postgraduate students raised some limitations. They shared their concerns about limited and restricted access to crucial information relevant to their studies, as often only abstracts are available.

Whenever I searched on Google Scholar I am always referred to other databases such as Science Direct and JSTOR, but in most cases, the information is partially accessible. I only have access to the abstracts and asked to pay a certain amount to have access to the full article. It is very frustrating to get such message because many of this article have the latest information that is relevant to my study (UG25).

There are not many databases that address our needs related to food science.... therefore, most of the crucial and relevant databases to our field, are very limited with restricted access (UG11).

I use database such as AGORA but it does not have searching block like other databases, therefore I do not find it user-friendly (UG5).

Furthermore, they indicated that most of the databases do not contain local information.

4.5.1.3 Additional information sources consulted during the information resources use

Students were asked to share with the researcher which people they consult when seeking information, and which factors they considered in selecting these people. The majority of the undergraduate students indicated that they prefer to consult their friends, classmates, peers, lecturers, research projects supervisors and library staff. There were very few undergraduate students that do not consult with the above people but prefer to carry out individual online searching or browsing for books in the shelves by themselves. It was discovered that if their information needs were related to their class tests, assignments or small tasks; undergraduate students consulted one another or their lecturers if friends were unable to assist. For research projects, students consulted their supervisors.

Postgraduate students provided similar feedback. They are, however, unlikely to request assistance from friends and peers as undergraduate students do, because postgraduate students have focused and individual research topics. They mainly consult their supervisors and lecturers who teach modules related to their research topics. There were also few who prefer individual information-seeking. Research supervisors were consulted due to their expertise in their fields and also because of their willingness to guide them.

The study found that librarians were less utilised less than other human resources. Students only consulted librarians if they experienced difficulties in accessing electronic information or in locating a book. This narrative is supported by the following statements:

I consult my supervisor if it is related to my research project (PG1).

I consult my supervisor because I am on early stage of my research; she is an expert in the field. I believe my supervisor have access to other universities' databases (PG2).

I prefer to do my own search unless if it is critical then I consult my co-supervisor and he has been very helpful (PG7).

Those who turned to librarians indicated that librarians have always been available and are very quick to respond and attesting that librarians know their collections and are well-trained in information-seeking. PG5 praised librarians saying:

Librarians will never let you down and will always check on you if they were helpful (PG5).

4.5.2 Students' ability to use the APA referencing style

The majority of the undergraduate students indicated that they were still experiencing difficulties when using the APA referencing style. They explained that they do not know if they should cite the whole paragraph or only some sentences.

Sometimes I access information with no publisher's information, journal titles, information from the newspaper or magazines, or article with DOI. So how should I cite in that case? (UG21).

How do I cite personal interviews? (UG27).

While only a few undergraduate students confirmed their ability to use APA, postgraduate students were confident that they were able to reference very well. Some postgraduate and undergraduate students also indicated that they apply Microsoft Word's latest version which provides an option for built-in referencing. Both undergraduate and postgraduate students informed the researcher that during

their first year, they were offered a module by the Language Centre called English for Academic Purposes. The centre also provides assistance to postgraduate students through a module entitled Academic Writing for Postgraduate Students.

APA become part of me and as a PG student, I have mastered it well (PG4).

I am good at that, I did a course during my undergraduate first year and were taught how to write scientifically, and how to reference different sources (PG5).

However, undergraduate students who were unable to reference very well, requested the library to offer them individual or group lessons.

Despite the majority of postgraduate students expressing pride in being able to reference very well and not needing any additional assistance, academics indicated that some students (undergraduate and postgraduate) were still struggling with APA. They informed the researcher that they are very strict in enforcing the use of APA. Some pointed out that they go to the extent of printing the APA manual for their students. They appealed to the library to offer APA lessons to students. They suggested to the researcher that if there is a need for the academic staff to work with the library in assisting the students, they would be willing to assist.

There are times students citing abbreviations, therefore, I suggest for intense training to students on the use of APA style (AS1).

4.5.3 Academic staff perspectives

The academic staff were asked to share their views on the current library collection in meeting their information needs and student's information needs. Among the four respondents, only one academic staff was satisfied with the library collection:

I am pleased to say that most of the books have been purchased; the department has the largest collection in the library. Journals in the field are also enough and useful to both students and academics. This has helped and will continue to help our students to be abreast of new and current research (AS4).

However, the other three academic staff were not impressed with the library collection. They raised their frustration that the library has failed both academics and students of Neudamm Campus. They had expected that at the time of this study, the library would have been a well-established collection that would meet their academic community's information needs. They stated that as with the students, they have been negatively impacted by the limited access to information. They said they have access to a very low-level online package and that sometimes, even the journals they thought the library has subscribed to, could not be accessed.

On a positive note, academic staff relayed that the current library publications were easily accessed; there is no need to seek assistance from librarians nor OPAC. Nonetheless, the above-mentioned challenges have hampered their academic performance especially in the area of publishing research papers.

It is unfortunate that the campus library has been around for quite some years but the collection has a long way to meet our needs.....My publication rate has decreased because of unavailable relevant information to my field (AS1).

The study discovered that academic staff get frustrated when accessing online resources and not able to retrieve the relevant information. They reported that searching for online information was a time-consuming activity because of limited access. In addition, it takes time to conduct the searches because of very slow and unreliable internet connectivity on campus.

Although some departments have very few registered students on campus, the library resources are just viewed inadequate. This was noted in the area of project planning and management and also on agricultural policies and analysis. In the same vein, Food Science department appealed to the library to acquire books on Standards Methods. It is a basic manual for microbiology, and also most common online journals in the field. Furthermore, the journal on Livestock Production and Stock-farm magazines were also identified by the Animal Science department for the

library to acquire. Although majority could not specifically state the names of the most wanted journals, databases or books, they indicated to the researcher that the library needs to be agile in its collection development and acquisition of resources. The dire need of resources is clear from these quote:

The library should commit itself to acquire these resources, they are a must have in the library (AS3).

4.6 Information evaluation

4.6.1 Factors considered when consulting information sources

In selecting sources of information, students considered a number of factors in making these selections. These factors are outlined in the following table:

Table 3: Factors considering when consulting information resources

Sources and information resources	Factors considered
Peers, classmates, and friends	<ul style="list-style-type: none"> ■ They were believed to know better than others peers. ■ They were always willing to assist and were readily available to consult. ■ They communicate easily in their home language.
Lectures and research supervisors	<ul style="list-style-type: none"> ■ They are experts in the field. ■ Students believed that their educators have access to information resources at other universities' libraries that are available to UNAM students. ■ Research supervisors give guidance on the best sources to consult.
Library staff	<ul style="list-style-type: none"> ■ They were always willing to assist and are friendly. ■ Library staff knows the library collection very well. ■ They have a better and fast way of finding information.
Individual Google search	<ul style="list-style-type: none"> ■ Google is a means of obtaining information immediately.

4.7 Existing Library Services and Facilities

4.7.1 Library services

Findings derived from this section indicated that majority of the students lack knowledge of the library services available. Library services were listed as follows: Interlibrary (ILL), Short-loan (SL) and one-on-one chat with the librarian.

4.7.1.1 One-on-one chat with a librarian

Students who were aware of the possibility of the one-on-one chat with the librarian service, expressed their appreciation of the subject librarians for their willingness to assist, answer their search queries, and provide information-seeking guidance. This appreciation was clear in conversation with the students who were aware of this service being available.

Yes, I consult librarians if I am unable to retrieve relevant information for my assignments, so far they helped me with all my queries (UG28).

They go out of their way to answer any queries, even showing and walking you straight to the shelves to show those relevant books. In many occasions, she showed me on the relevant databases to find information related to my assignments and research (UG2).

Librarians do not need an appointment, I show up anytime. If my question involves lengthy research and maybe she is busy at the moment, I leave her with my questions and she calls me once free to show me and help to find information on a topic (UG12).

Yes, librarians, have a way of getting information, I think their search strategies are more advanced than ours (UG11).

When I was busy with my research proposal and literature review, they were really helpful. They referred me to different resources in electronic and printed formats. They really guided me (UG6).

I consult library staff because they know how, and they know the availability of resources in the library. These are trained personnel in information delivery.... I did not yet come across the situation where librarian refused or failed to assist (UG6).

Despite the appreciation from some students, the researcher noted that the majority of participants were not aware of this platform. Many of them blamed the library for not creating awareness of this important service because of how it could have assisted them during their course of the study. This is clear from UG4's comment:

I never heard of it, I thought librarians were just there to help if I am borrowing and returning library books. If I knew this before I could have used such service, now it's too late (UG4).

4.7.1.2 Short loan service

The short loan service was found to be a popular service and all respondents were aware of it. The majority of undergraduate students confirmed using it frequently. They indicated that all the books in that section were useful and served their academic needs. However, the majority of the postgraduates indicated that at their level of study, there were no items or resources in the short loan collection that served their needs.

While it was praised, undergraduate students still expressed that it was not an ideal system, as the number of copies available on short loan is limited; so not all students could access them. Although the borrowing time for short loan items, was recently increased to four hours, students felt that this was still insufficient, as is evident from this feedback:

It is very frustrating especially in critical times such as having a test, assignments, or an exam, with this limited copies on short loan. It creates tensions that could cause fights among students (UG1).

Sometimes the library has only one copy to that specific module and we are many. There is also a tendency of some students who are very selfish when it comes to short loan, they borrow a book and they keep on renewing or circulating among a group of friends (UG28).

4.7.1.3 Interlibrary Loan (ILL)

The study found out that the majority of the students are unaware of this service. Students criticised the library for not creating awareness of important services that could be helpful during their studies. Students were frustrated at not having known about this service:

If I knew about ILL before, I could have requested resources that Neudamm library does not have. I thought to myself that those items at other campuses cannot be loaned to others, unless if I go there myself (PG4).

If I knew about ILL, I could have requested online articles that I did not have access (PG6).

Very few of those with knowledge of ILL indicated that there were no reference books at other library campuses. Others were not convinced if the books will be delivered on time as the library staff were not effective enough. These quotes from the students refer:

I once requested a book on medicinal indigenous plants by Prof Kanzila which is at main campus library but I did not get anything until now (UG17).

Our library should just try by all means to have all the relevant especially the local published in their collection to avoid the ILL since it is not reliable (UG20).

This ILL is not effective, the time the book is delivered, the need has lapse already. Therefore, the waiting period is too long (UG15).

4.7.2 Library facilities

4.7.2.1 Usage of the library study space

From the focus group discussions, the researcher deduced that both undergraduate and postgraduate students frequently use the library study space. They view it as the central place for completing assignments and research projects, as well as a

venue for studying for tests and examinations. The following quotes from undergraduate students are a testimony:

The library study space allows me to concentrate when studying for class tests, examination and doing my assignments (UG4).

The library provides me with conducive environment to conduct my academic activities, in particular when performing information search for my research projects(UG1).

In addition, the library space is also used as a facility for relaxation and for catching up with current affairs. As one of the undergraduate student stated:

I mostly use the library study space for relaxation such a reading newspapers and magazines (UG15).

The majority of postgraduate students highlighted the importance of having their own space within the library. However, there was both negative and positive feedback regarding this library study space. Some postgraduate students applauded the library for allocating them a reserved and conducive study space that has computers. They stated that this allows for high levels of concentration with little distraction. The following quotations illustrate this positive feedback:

I use the library study space to attend to my research activities such as search information for my research projects, when I was writing up my research proposal, search information on how to write application for funding and also seek information on where to publish articles (PG5).

In the past three years, I have been allocated study carrel to myself. Therefore my space is quite and convenient (PG5).

I use the library often because I do not have my own personal computer. Therefore I make use of the study carrels allocated to postgraduates. So far, the space has been okay to say (PG2).

Although majority of undergraduate students praised the conducive library environment, and the furniture and the design of the library; other students raised

serious concerns regarding the library space. In particular, they conveyed their dissatisfaction with regards to overcrowding which they attributed to the increasing number of students. Students reported that overcrowding is greater when assignments are due and during tests and examinations' periods.

There are times you find all the desks in the library occupied, including those in the discussion room and computer lab. Everyone wants to sit in the library for information searching and studying (UG3).

There are students who prefer to use their hostel rooms as an alternative to the library space. This is either as a result of personal preference (regardless of what library space is available) or not being able to find a space in the library where they will not be disturbed by their peers:

I hardly use the library study space because there are lots of distractions from my peers. I personally prefer to not see people when studying and thus tend to study in my hostel room (UG8).

I do not use the study area because I like to be in my own area ... studying while listening to music and so on (UG12).

Even if I want to use this space, students are always in and out, with some of them looking for books on the shelves, which is quite disturbing as there are no demarcated individual study spaces (UG4).

There is no control etiquette at the study space, students are discussing among themselves, distracting others badly in the process (UG5).

Due to limited study space and noise in the library, I hardly utilise the library space and instead I opt to study in my hostel rooms (UG7).

Sometimes the study space was used for group discussions, causing a disturbance to other students who preferred studying in a quiet environment (UG19).

Some postgraduate voiced similar sentiments. They expressed their frustration with the library's infrastructure as it does not meet the needs of every postgraduate student. A further complaint from the majority of postgraduates was that the library does not have suitable study space for them. While the library strives to provide the much-needed study space, services and resources to their valuable users; majority of postgraduate students were critical of the current space. The following are direct quotes from some of the students that conveyed their frustrations:

I am a senior student on campus, but there is no pleasant space for me in the library (PG4).

I prefer using my hostel room because the library does not have stable space for postgraduate students (PG7).

I only use the library study area when I am reading for fun, taking a break, reading newspaper (PG1).

I only come to the library when I am borrowing books (PG3).

The study found that the library has four study carrels which are strictly reserved for postgraduate students and visiting researchers and are equipped with working computers. However, it was found that only two carrels were available to students. One carrel is shared among five masters' students, a second one has been allocated to a doctoral student, and the remaining two are used as offices by university personnel. As a result, some postgraduate students felt robbed of their privileges. They indicated that the current library study space is always overcrowded, noisy and they get easily distracted by uncontrolled movements by other students.

In addition to that, they indicated to the researcher that there is no booking system for the carrels. They are available on a first come first served basis and, often, an individual student will occupy the carrel for a full day without considering the plight of others. Therefore, they have opted to use their hostel rooms to conduct their academic activities. Students believed that when the FANR introduced postgraduate

programmes, all universities' facilities, including the library, were supposed to have been ready to accommodate and cater for their needs.

4.7.2.2 Use of the library computer laboratory (computer lab)

The study found the majority of the undergraduate students rely heavily on the lab for typing their assignments and laboratory reports, searching for electronic information, and printing. Students also use the computers to listen to music and also to access their social media platforms. UG6's comments reflect this narrative:

I visit and use the computer lab every day. I search for information to complete assignments, and during my relaxation, I access Facebook and read online newspapers (UG6).

While the computer lab is popular among undergraduate students, they highlighted several challenges. Firstly, as a result of the increasing number of students on campus, there are not sufficient computers available. Secondly, despite this shortage which decreases students' ability to use the computers for research and assignments, there are students who use computers for non-academic purposes such as accessing social media sites and listening to music. The study also found that there is no active booking system in place and no restrictions on the time a student can spend using a computer. These factors all limit the number of students who have access to computers for completing assignments and research. UG3's comment indicates exactly this:

A fellow student can sit on a computer just accessing social media sites, watching soccer and doing other unnecessary things while I am here want to search for information or type my assignments (UG3).

Students reported that the campus experiences frequent electricity cuts and this causes extended internet connectivity interruptions. They further stated that the campus internet connection is very slow and on many occasions, the campus' Wi-Fi does not work. Students also indicated that the Microsoft package installed on the

computers in the lab is not up-to-date, and there are no statistical data analysis software on the computers and yet they often do quantitated research.

Our campus experiences power outages on a weekly basis and in the process this causes internet interruption (UG14).

Computers that are in the computer lab have outdated software and sometimes they can corrupt our documents that were typed on personal laptops (UG25).

Since we are busy with final year research projects, I think there is a need for the library to install the statistical software packages for data analysis usage (UG18).

While the lab was found to be a popular spot among undergraduate students, this facility was less utilised by postgraduate students, because they indicated that they have personal laptops. The postgraduate students informed the researcher that if they use the computer lab, they feel as if they are intruding on undergraduates' space, as there are many more undergraduates who have limited resources. The study found that postgraduate students only use the computers in the lab when they want to connect to the printers because the computers in the study carrels are not connected to the printers. This is illustrated by the postgraduates' feedback:

I am mostly relying on my laptop and the computers in the study carrels; therefore I do not use the computer lab (PG4).

I am employed, so I have a computer in my office and a private laptop too. I only use the lab if I need to print something (PG6).

4.7.2.3 Printing and photocopying facilities

Undergraduate students reported that the printing and photocopying machines are working very well, despite the printing room gets crowded if there are many students printing or making photocopies. They informed the researcher that for a student to print any document, he or she has to log in the computers in the lab. Students are frustrated because the campus has only one vending machine for

buying printing credits. The machine gets full quickly and sometimes students have to wait for days for the machine to be cleared and this causes a lot of delays in printing their assignments. The same delays also happen if the printing machine experiences technical faults as there is no fulltime person on campus to assist with major issues. It was also found that the vending machine only allows the Namibian dollar notes with a diamond sign or mark. As with computers, power outages mean that the printing cannot occur.

Postgraduate students expressed unhappiness with facilities. They indicated that computers in the study carrels are not connected to printers and this makes it difficult for postgraduate students to use the printing and photocopying facilities. Two participants expressed such challenges:

There are just too many protocols around printing, therefore I told my supervisors to only expect electronic versions from me (PG4).

If I have something to be printed I am required to log in the computers in the lab, and in most cases the computers in the lab are all occupied. I would expect the library together with IT department to connect our computers to the printing machine to avoid all these delays and inconveniences (PG1).

4.7.3 The use of library services, facilities, and resources among academic staff

The respondents were asked if they use the library facilities, services and resources at Neudamm campus and how do they feel whenever using them. The study discovered that academics were underutilising the library facilities and its services.

4.7.3.1 Library services

Academics felt that there is a need for the library to create awareness on library services such as ILL and one-on-one chat with librarians. They have not been using these services as they state that the library has not promoted them, so they have limited knowledge of their existence. They indicated that they knew that they could

borrow printed resources from other libraries, but were not aware that they could also acquire electronic resources. In terms of chats with librarians, they were of a similar opinion. They said that they had experienced difficulties with accessing online resources and had not known that they could ask a librarian for assistance with this. Therefore, they urged the library to create awareness among its users.

They viewed short loan services as a service offered for students specifically. They stated that resources are placed on short loan section due to limited copies and to enable more students to have access to these resources. Therefore, they did not see a need to compete with students.

4.7.3.2 Library facilities

The majority of the respondents indicated they wished there was a suitable library space to use, but that Neudamm campus library does not have the facilities academics require. Therefore, they only come to the library when borrowing printed materials or to read the daily newspapers. They indicated that they would like to be able to carry out their research in the library. To achieve this, they shared their ideals for the library to have a special space for academics, equipped with suitable research support resources. This is evident from AS1' statement:

Sometimes I want to sit in the library but with the current library space; there is no conducive or quiet place where I would carry my research (AS1).

As a result of limited facilities, academics carry out their research activities in their offices. They seldom use the printing and photocopying facilities because each department is allocated its own machines. When they have used the printing room, they report that it is crowded but that all machines appear to be in working order. All the academics indicated that they do not use the computers in the library computer's lab because they have their personal computers in offices.

4.7.3.3 Library information resources

In as much as agricultural students were using the Neudamm campus library collection, this does not spare the academics on campus. They indicated to the researcher that they access printed resources such as books, printed journals, daily newspapers and subject related weekly magazines from the library. They also access the online resources that the library subscribes to, but they do this remotely.

Academic staff raised their frustration regarding the library collection which they say only partially meet their information needs. They complained that the library books were outdated and that the library had a limited online package and that sometimes there was only limited access to journals that formed part of the library's online package. The above-mentioned struggles have significantly hampered their academic activities, particularly their ability to publish. The majority of those participated in the study voiced their concerns about poor and limited resources that the library offer, believe that the library has failed both academics and students. They would have expected that the library house a well-established and relevant printed collection and sufficient online databases without restricted access to some of the journals.

4.7.4 Students' awareness of available channel of communication services

The study found that majority of the students were not satisfied with the way the library communicates with its users. They feel that it is doing nothing to make students aware of new resources or developments in the library. PG3 articulate this clearly:

There is nothing new coming from the library especially to students who are not frequently on campus (PG3).

Students reported that most of the information that appears on the UNAM library homepage does not apply to Neudamm campus library but rather to the Windhoek main campus library. As PG5 stated:

The current modes of communicating to students is not working, the library homepage is dormant, or of no use to others. It is for students in Windhoek. (PG5).

Another criticism that students had was that they were unaware that the Neudamm campus library has display units for new books. UG2 and UG9's comments illustrated this lack of knowledge:

I thought those books usually placed there are for decoration purposes, I did not know if they are new books (UG2).

I only hear of new arrival library books from friends or discover new books upon shelf visit, and in most cases I find relevant books already borrowed by my classmates (UG9).

There are undergraduate students who are aware of the display units, but felt that there was ignorance of such facilities among their peers. They believe that it is the responsibility of every student to be more attentive to new developments in their library as it is a key resource in enabling them to fulfil their academic requirements.

In addition, postgraduate students made suggestions for the library about their preferred channel of communication. They indicated that since they are very few postgraduates in the faculty and on campus, the library should communicate with them via email and through student portal to communicate news. Students also recommended that Neudamm Campus Library news should feature strongly on the UNAM library homepage as this is a starting point for searching for information. Establishing such communication channels would allow students to be informed of the newly acquired publications and titles. This information could also be printed placed on notice boards and at the library entrance doors.

4.7.4.1 Student's preferred channels of communication

Students suggested the following communication strategies for their users whenever there are new developments:

- Printing out a list of all titles received and placing it on library doors, departmental notice boards, and the computer lab door.
- Emailing information to all students and class representatives.
- Placing notices on student portal.
- Specifying the campus for which the information is relevant to when it is posted on UNAM library homepage.

4.7.4.2 Academic staff perceptions of Neudamm Library current awareness services

While students were not impressed with the library communication channels in place, the majority of the academic staff described the channels of communication positively, especially in terms of communicating with those who do not visit the library on a regular basis. They indicated that displaying new materials in the display units is helpful, not only to the academics but to all library users.

It was noted that not all academics read emails from the library. Therefore, they suggested that when the library obtains new books, library staff should highlight book titles per departments and directly inform the lecturer who recommended the title.

While academic staff applauded the library for trying to keep its users abreast with the latest news, they are aware that students are not benefiting from these communications. They suggested that the library place the lists of new books at the library entrance and on departmental notice boards. The library should also make use of social media platforms to communicate to the users.

As with students, academic staff indicated that the library homepage is currently under-utilised and should be better managed by the library as a means to communicate to its users.

4.8 Barriers to accessing library facilities, library services and information resources

4.8.1 Student's perspectives

Both students at all levels were asked to share the challenges that they encounter when accessing information at Neudamm Campus library with reference to library facilities, library services, library staff, their fellow students, and information resources. The following challenges were revealed:

4.8.1.1 Library facilities

- Slow internet connection on campus. There are internet connection interruptions on a regular basis and delays in restoring the connection. This is mostly caused by a weekly electrical power cuts on campus.
- Shortage of computers and lack of booking system to control the usage of computers among students. There is monopoly of use by some students, often using social media and listening to music and not studying.
- Small size library coupled with overcrowding makes it difficult for the study area to have a silent ambience for reading. This is exacerbated by limited discussion rooms with no sound proof. Furthermore, there is also a shortage of study cubicles and the existing ones are not well designed.
- Overcrowding in the printer and photocopy room and the fact that the campus has only one vending machine for printing and photocopying credits which does not even accept all Namibian Dollar denominations.
- Unavailability of campus IT personnel to promptly and expeditiously attend to their IT related matters or trouble shoot computer problems in the labs.
- Restrictions on relevant and easy to understand websites such as YouTube; which they can only accessed at certain hours.

4.8.1.2 Library services

Students reported on major challenges with accessing books. The ILL was found to be neither effective nor reliable. They also stated the Short loan services has limited copies of books.

4.8.1.3 Library staff

Students stated that sometimes library staff closes the library earlier especially the night shift and on Fridays. Students said that some of the library staff are not familiar with agricultural terms.

4.8.1.4 Fellow students

In the absence of booking systems, some students do not give others students's chances to use facilities such as study carrels and computers in the lab.

4.8.1.5 Information resources

Students indicated that most of the books in the library are incorrectly shelved. Further, they reported that the library collection is outdated and has very limited copies of titles. Students complained that there are few publications available that have local content related to agriculture matters. On the the library electronics resources, students pointed out that there are too many access restrictionsto relevant resources.

4.8.2 Academic perspectives

4.8.2.1 Library facilities

With a growing number of students on campus, educators felt that the library space is too small. They indicated that the study space is not conducive for university students who require high concentration of study. Apart from the library offering the space to the faculty undergraduate students, academics pointed it that the library does not have space, particularly for postgraduate students. AS2 expressed this concern clearly:

It is very worrisome to our prospective postgraduate students to be wondering around with no stable study area (AS2).

4.8.2.2 Library resources

Academics staff revealed that students do not know how to access most of the library online databases which contain peer reviewed journals. They further indicated that the library does not subscribe to enough electronic databases and, if they do subscribe, the resources that users access do not always include full articles. This limited access does not provide users with access to relevant online resources. In addition, systems for search online search route is not user-friendly. The researcher was also informed of the distraction from social media, students spending too much of their time on social media which caused them to do assignments on last minutes and this caused plagiarism and access to few resources.

4.8.2.3 Student's limitations regarding information use

Academics were asked to share what limitations were evident from students' use of information. Majority of the academic staff believed that there is a lack of reading and studying culture among students. Consequently, most students especially undergraduates, do not consult sources other than their lecture notes. Occasionally, they supplement their lecture notes mostly with resources accessed from the internet, especially Wikipedia. They do not verify the reliability of the resources they find on Wikipedia or other internet sources. Generally the undergraduate students neglect using information from accredited journals.

Furthermore, academic staff stated that once undergraduates have gathered information, they often do not synthesize it with their lecture notes. The tendency is to reproduce lecture notes and Wikipedia information without any analysis or synthesis of information nor writing information in their own words to add their own perspective. Academic staff further indicated that a language barrier has also

contributed to the students' ability to process information. As a result, there is a lot of copying and pasting of information; which is plagiarism.

Although students were instructed to read further and retain more knowledge, it was evident from the lecturers' feedback that both undergraduate and postgraduate students were writing what is already known in their fields. As a result, no new information emerged from students' research. This was because students do not consult enough information resources to know what has already been researched. For instance, one academic staff's opinion was:

Students' writings lack completeness of referencing (AS4).

Especially to postgraduate students, if they do not do thorough information-searching on their research topic and try to understand it; things remain superficial and what will they interpret later? (AS4).

4.9 Improvement of library services, facilities, and resources

4.9.1 Student's perspectives

The researcher asked students for suggestions on how to improve the library's services, facilities, and resources. Across the students, they voiced different needs and expectations they have of the library. These varying suggestions have been incorporated and are discussed below.

4.9.1.1 Library services

Interlibrary loan (ILL): Both postgraduate and undergraduate suggested that the library creates greater awareness of this services. Furthermore, the library should act efficiently when handling ILL queries, and they also requested that the library to minimise the waiting period to less that three days.

Short loan (SL): Undergraduates who are the most frequent users of this services suggested that other patrons should not be allowed to renew books immediately

after returning them to give others a chance to access the books. Additionally, the library should purchase additional copies of popular books.

One-to-one chat with librarian: Students indicated that there is a lack of awareness, therefore they suggested for more advocacy on the role of this platform. Besides that postgraduate students appealed to the library staff to have an agriculture-related subject expertise.

4.9.1.2 Library Facilities

Study space: Both undergraduate and postgraduate students suggested that security officers patrol the library to control the noise. Undergraduate students suggested there should be more individual cubicles and also additional electric sockets in the study areas. Postgraduate students believe that a strong booking system for carrels should be introduced. This would allow all postgraduate students to have access to study carrels. In future, if the campus secures funds to build a new library, postgraduate students requested that the library should have an area specifically for postgraduate students, equipped with reliable internet, computers, printing and photocopying machines, and a group discussion room.

Computer Lab: Students appealed for more computers in the library and for the regular maintenance of lab computers. Moreover, the university increases its internet bandwidth and that the campus should use reputable and reliable internet suppliers. In addition, the library should should acquire more computers for the library, and introduce a booking system for computers in the computer lab. Students also appeal for the removal of restricted access to YouTube. They also suggested to the IT technician to conduct daily check-ups of equipment before the library opens to students in the morning. This means that IT staff will have a chance to identify and resolve problems within computers, internet and printers more efficiently. Students suggested that the library should employ student assistants with strong IT skills to assist whenever the IT personnel is out of office. Students indicated that there is also

a need for a regular update of software in the computers, e.g. Microsoft package and requested that the library to install statistical software such as SPSS and SAS that they require for data analysis. Furthermore, they suggested that the library should assign specific computers for printing.

Printing and photocopying machines: Students indicated that there is a serious need to increase printing and photocopying machines on campus. Nashua, the printer and photocopying service provider, should assign a permanent technician on campus to attend to the machines' faults.

4.9.1.3 Library resources

Books: Most students recommended that the library acquires relevant and up-to-date books; and for short loan service, several copies that are frequently used should be purchased because student enrolment increases annually. Moreover, the library should acquire books with local and regional content that serve as case studies. In addition, the library should improve the books ordering turn around rate so that books arrive within a month or two of placing a requisition. It was further recommended that when the FANR is revising its curriculum and introducing new modules, the library should also be ready to acquire new resources which should be delivered on time.

Online reference databases: Students felt that there is a need for the library to create awareness on the importance of electronic databases, how to access them and how to efficiently and effectively utilise them.

Databases: There is a need for the library to subscribe to the relevant journals, with local and regional content. Also, students feel that library personnel need to know how other academic libraries function and serve their user groups. They should try and match their standards with those of reputable universities in the region. A possibility of benchmarking the library collection with that of reputable universities

such as University of Pretoria and University of Free State in South Africa was suggested by academic staff that participated in the study.

4.9.2 Academic staff perspectives

For the library to overcome those challenges, it should familiarise itself with the library collection of neighbouring universities that offer similar courses. This will help and guide the library in ensuring they subscribe to relevant databases. Librarians should give regular training to students on how to access and use library resources, particularly online resources. There should be proper education on how to access the accredited information.

Poor information skills, limited information sources consulted and inability to analyse and synthesise information, were some of the challenges highlighted by the academic staff about students at Neudamm campus. Consequently, they suggested a collaborative approach between the librarians and lecturers for intervening. The entire faculty must work with the librarians to offer greater support that will motivate and help students with their academic research. The library must acknowledge and meet the requirements of their role to ensure that students are educated and more aware of the availability of resources and how to access and use these resources. They further appeal to all students to be discouraged from plagiarism when writing academic essays. Academics believe that students' active participation during lectures' would enable them to be guided by their educators on how to access and process reliable and relevant information.

Students should be encouraged to seek information on their own as it is the best way to learn and also to retain the information to convert it to knowledge (AS4).

The library should be able to assist students to sift through different sources of information that appropriate and suitable for scientific writings and those that are not acceptable. There should be evidence that they are accessing and using online archive and journals such as Animal Science journal (AS3).

Academic staff noted that there was a lack of subject knowledge among library staff. This has led to inadequate guidance being offered to students. Efforts should be made by library staff to ensure the diverse agricultural specialisation is available among library professions to ensure that at least the information need of the students are effectively met. One staff member recommended that:

The library staff should dedicate themselves and be willing to offer the needed library services. They should be more enthusiasm and willing to serve the Neudamm community at all time (AS1).

Academics also complained about the frequent disruptions to the internet connection as well as slow speed of the internet connection on campus. They further indicated that with the growing number of students on campus, the library is experiencing shortage of computer terminals. They informed the researcher that students do not have reliable internet connection and the speed is very slow. The With inadequacy of the necessary facilities has hampered the process of accessing and using library resources among students. Faculty staff suggested that the Neudamm campus library secure more funds to acquire more additional computers for students. The recommended that computers in the library be maintained on a regular basis and that the library should introduce the booking system for all students to have equal access to facilities. Additionally, the library should lobby support from the campus management to find a stable internet connection by acquiring a stronger and their local internet server. They believe that if the campus has its own local server, the library resources would be locally maintained and could be accessed offline.

In spite of the reasonable library operating hours, there was a need for the library to create a 24 hour study area for students. The library should lobby for external funds to build a library on a university level to accommodate the ever increasing number of both undergraduate and postgraduate students.

4.10 Summary

This chapter presented the collected study's findings which were to determine the student's information needs, the preferred information resources, student's information seeking patterns, challenges experienced when using and accessing Neudamm campus library resources, services and facilities. The study further solicited student's and academic staff members' inputs on how to improve the library's services, facilities and resources. The next chapter discusses the main findings in line with the study's main objectives and its research questions in context of the reviewed literature and the theory informing the study.

Chapter 5

Findings, Conclusions and Recommendations

5.1 Introduction

This final chapter discusses the main findings that emerged from the data in relation to the study's five main objectives of the study and the literature reviewed. The overall objective of the study was to determine students' information needs, information-seeking patterns, information evaluation, and information use. This included establishing their preferences for information sources as well as the challenges students encountered when accessing and using information at Neudamm Campus library. All these were done to improve or redesign the delivery of information services.

The chapter is divided into five sections according to the sub-objectives of the study. The entire chapter incorporates literature reviewed and the main findings of the study leading to a conclusion, recommendations and suggestions for future research.

5.2 Discussion of findings

5.2.1 Students' information needs

The findings revealed that undergraduate students need information to write assignments, prepare for class tests and examinations, and complete their research projects. Postgraduate students require information for their research projects. This includes information on how to write research proposals, research methodology for dissertations, how to write applications for funding, as well as how and where to publish their research. A study by Abdullahi, Igbinovia and Esther (2015) shared similar findings; concluding that students need information for test and examination preparation, for writing assignments, and for self-development. Fasora and Olabode (2013) also related to the above-mentioned findings by stating that majority of students sought information for academic purposes and that the library was their

preferred place for accessing this information. Similar findings emerged from Ajigboye and Tella's (2007) research, which established that the primary purpose for students' search for information is for their studies.

The current study comprised of two groups of students – undergraduate and postgraduate; with academic staff involved for triangulation. It can be compared to Oluwafeni et al. (2013)' study that found postgraduate students mostly needed scientific and technical, methodological or procedural information, and mainly from patents, standards, conference proceedings, and technical reports. In the same vein, Onouha and Awoniyi (2011) conducted a study in two universities; one in Nigeria and the other in Zimbabwe. They narrated that students from the two universities sought information mainly for purposes of updating their knowledge, preparing for examinations and doing assignments.

5.2.2 Information resources FANR students prefer to use

On preference to information sources, data revealed that undergraduate students use both printed and online resources, while postgraduate students indicated preference for online resources. Undergraduates indicated that their use of library resources depends on the task assigned by their lecturers. They mainly consult books for their daily lessons tasks, but search online information for bigger research projects. They believe that a book gives a more detailed explanation than an article. They indicated that online resources contribute mostly to the research project proposal, the literature review, researching methodology and to methods of analysing data. Postgraduate students prefer online resources, because they supply the most recent information.

A study by Abdullahi, Igbinoia and Esther (2015) on undergraduate students at the University of Ilorin in Nigeria showed that majority of students preferred print resources, followed by online resources with a few respondents favouring the use of audio-visual equipment and multimedia. While Neudamm Campus students were frustrated by outdated and limited printed materials, restrictions to e-resources and

social media such as YouTube. Literature such as Abdullahi, Igbinoia and Esther (2015) shows that students become innovative and manage to source information through other means, illegal and otherwise, to address their information needs. Out of frustration owing to limited resources, people set up piracy websites, and condone illegal access to information. Although the Neudamm Campus library has a collection of multimedia resources, students seldom consult this collection as they are unaware of its existence. Preference for online resources to print material at Neudamm Campus compares with Oluwafeni et al. (2013) study. Both studies found that students search Google for information before consulting other sources. The FANR's postgraduate students at Neudamm Campus further indicated that during their undergraduate level they relied heavily on printed materials because there was not much demand from lecturers for consultation on variety of information sources. There was no pressure on them to cite and reference intensive literature when they were doing assignments at undergraduate level. However, with the high demand for application of current literature in research, postgraduate students indicated that they rely more on electronic resources. Postgraduate students explained that as the library does not have printed resources that cater for their research topics, they use online resources.

Regardless of students claiming they access reputable online databases, academic staff disputed by attesting that both undergraduate and postgraduate students' information lack knowledge of proper referencing techniques and evidence of intensive literature search.

5.2.3 Information-seeking patterns adopted by students

The study found that undergraduate students use both printed and online resources. It was discovered that, when searching for printed resources, undergraduate students primarily browse for books on the library shelves. Very few respondents indicated using the OPAC. Chaura's (2015) study on information behaviour of final year students at Mzuzu University in Malawi shared similar findings and reported

that majority of students browse library shelves with low usage of OPAC. As librarians, we need to train our students on OPAC searches because this information-seeking pattern could be an indication of lack of knowledge of how to use the OPAC.

It transpired that when undergraduate students aim to get a general understanding of a subject, they first search Google because they argue that information from Google is presented in a simple and easy to understand manner. They further reported that they type in the whole topic into the Google search bar with a suffix PDF or PPT. This yields them resources in PDF and PowerPoint slides, which filters out a lot of potential information sources that could address their information needs.

Clearly, our students do not know how to formulate search strategies and therefore need to be offered relevant training. Majority stated that Google provides them with a starting point to formulating a search query; and it also gives them an idea on how to break down their search query into keywords. Then they use these keywords to search online databases such as Google Scholar, JSTOR, Science Direct, and CAB Abstracts. It is difficult to understand this narrative when it comes from the same people who browse shelves and do not use OPAC; people who pose sentences to Google search bar with PDF and PPT suffix, and who have serious time constraints for information-seeking. Their ability to formulate keywords should be revealed from the onset when searching Google; or by their ability to use OPAC effectively.

Postgraduate students specifically search online information by using keywords, Boolean operators, and by formulating a question based on the information need. Despite students' efforts to search for information online, majority of undergraduate and a few postgraduate students' online searching skills are not well developed; and this calls for intensive information literacy training. Similarly, Chaura (2015); and Brindesi, Monopoli, and Kapidakis (2013) found that when students are searching for information on the internet, they type in the full topic in the Google search box which is an indication of poor search skills; unawareness of advanced search

strategies; lack knowledge on formulation of keywords and application of advanced searches that incorporate truncation and Boolean operators. This is a further affirmation that our information literacy programme needs to be more robust.

Data revealed that both undergraduate and postgraduate students engage in collaborative information-seeking by seeking assistance from and working together with friends, peers and lecturers. Research students depend on supervisors for information related to their research projects. Students approach librarians when they experience difficulties in accessing electronic information or if they are unable to find a specific book on the shelves. The researcher notes a very good and healthy relationship between students and their lecturers during the information-seeking process at Neudamm Campus. Often lecturers share information resources when they observe that their students cannot access essential information. This is a call for the library to acquire latest information and to collaborate with the academic staff to assist students with their information needs. This situation Neudamm Campus, is comparable to the study of Wijetunge (2015) which revealed that agricultural undergraduate students consult their peers because they are accessible; and lecturers were consulted because they offered guidance through individual consultations. On the contrary, Abdullahi, Igbinovia and Esther (2015) revealed that majority of the students locate their information through self-help or use the OPAC to locate information resources; very few seek assistance from friends. However, it was found that students consult experts in their field of study when they fail to get information.

The researcher thought that majority of students would consult library staff for information; data revealed the opposite. Both undergraduate and postgraduate students hinted that library staff is not knowledgeable enough to assist them compared to their lecturers. This observation was also made by lecturers that participated in the current study, that there is a lack of subject knowledge among library staff. Therefore, majority of students rather choose to discuss with their peers and their research supervisors to give them a better understanding of the topic

before they embark on any literature search. These points out the importance of having subject librarians or information specialist who have strong content knowledge of the subject area they are servicing. Clearly FANR needs subject librarians who have studied Agriculture at least at Junior degree. Furthermore, constant collaboration with lectures is crucial at Neudamm Campus.

5.2.4 Challenges and barriers encountered by students while accessing and using library

The present study included four academic staff at Neudamm Campus and they were asked to pinpoint challenges that were encountered by their students when accessing and using information at Neudamm Campus library. The researcher asked the academics and students similar questions. Both parties (students and academics) indicated to the researcher that there was a variety of challenges experienced by students while accessing and using the Neudamm Campus library. This calls for redesign of study spaces and services offered in this library to address the challenges revealed in this study mentioned in Chapter 4.

Both undergraduate and postgraduate students indicated that the library has few publications with local content relevant to their research projects. Students also revealed that some books, which are on high demand, are deliberately misplaced in different shelves by other students for their selfish interests — a sign of desperation resulting from limited resources. This was also revealed by Abdullahi, Igbinovia and Esther's (2015) study where students indicated that they were faced with challenges pertaining to inadequate equipment, irrelevant material, outdated resources, incomplete materials or vandalised books.

With a growing number of students at Neudamm campus, both students and academic staff indicated that the library space has become too small, noisy and is not-conducive to meeting students' academic needs. The shortage of necessary support facilities such as space; computer terminals, printing and photocopying machines; and a slow and unreliable internet connection on campus, are all major

challenges that students face in many parts of Africa. Okile-Amughoru, Makgahlela, and Bopape (2014) share similar challenges that postgraduates were hindered by limited space in the library, low internet bandwidth and regular power outages. Furthermore, Fasola and Olabode (2013) and Nwobasi et al. (2013), revealed that barriers and challenges facing students when seeking and accessing library collections were a lack of internet facilities or a reliable connection; limited time for intensive searches; and inadequate and irrelevant library materials.

Notably, academic staff at Neudamm Campus is aware of the challenges experienced by students when accessing and using the information in the library. They indicated that majority of their undergraduate and postgraduate students lack search skills when they try to access many of the library's online databases. They further pointed that students were also faced with limited and outdated print materials, as well as restricted access to most online resources. Academics also expressed their concern with user-unfriendly library databases, particularly those that are on CD-RoM.

Studies by Ogba (2013), Adio, Arinola (2012), and Colon, Aguirre and Fleming-May (2012) concluded with similar findings. They showed that students experienced difficulties in constructing search queries, were unable to select the correct resources and lacked information-processing skills when evaluating information found on the internet. In the present study, academic staff stated that students were distracted by social media, and this impacted on the quality of their work and often led to students using too few resources and plagiarising in the interest of submitting their work on time.

Noting the challenges alluded in this study, the library should play an intensive role in providing information-delivery services to its students so that they can access the needed facilities and resources, without any challenges.

5.3 Conforming to Kuhlthau's ISP realms of experience

While the study adopted Kuhlthau's Information Search Process (ISP) model (2004), it only concentrated on three of the ISP' realms of experience: the affective (feelings) the cognitive (thoughts) and the physical (actions). The study has found the students conformed to these three realms of experience – the affective (feelings) as they were frustrated when they failed to locate the crucial information. Their frustrations were also shared when providing feedback on the library's facilities and services. The cognitive (thoughts) were applied when searching for information, particularly in formulating search queries and executing them; and the physical (actions) happened through visits to the library; going out to consult peers, friends and lecturers as well as browsing shelves.

5.4 Conclusion

The main purpose of the study was to determine information-seeking behaviour of FANR students at Neudamm Campus, UNAM. To do so, the study needed to determine students' information needs, their preferred sources of information, their information-seeking patterns, and to identify the challenges encountered.

The study found that students need access to sufficient, reliable and current information to meet their academic demands. Majority of students indicated that the library is only partially meeting their information needs. As a librarian at Neudamm Library, the researcher has knowledge of the variety of available resources, both in printed and electronic formats. However, it is evident that students do not fully utilise these resources. This is due to a lack of research skills, a lack of awareness, limited knowledge of Agriculture by librarians makes them incompetent to address the information needs at a higher level of abstraction, a shortage of computers, a slow internet connection and frequent power outages on campus. Some of the initial steps towards addressing some of these challenges warrants:

- capacity building of librarians on agriculture as a subject matter and on agriculture related information resources;
- collaboration between librarians and academic staff to keep abreast with latest developments in agriculture information resources;
- networking with agriculture information specialists in other academic and research libraries;
- intensive marketing of library services and resources; and
- robust information literacy for students.

Frustration with print resources and shortage of books for popular modules warrants a refresh and updated the library collection to meet the needs of the faculty community.

Ill-developed information search skills among students is a signal of inadequate library training. Therefore, an intensive and appropriate library education training programme is essential which will improve students' use of information resources and should, consequently, improve their academic work and results. Students' frustrations were revealed in the data; it is evident that students strongly recommend that the library's facilities, services and resources be improved. They repeatedly voiced a call for an intervention from the university and library management to address these frustrations and to respond to the needs they have conveyed in the interest of offering quality education that meets international standards.

Given that the current study is only a case study that utilised purposeful sampling, the findings cannot be generalised. Nonetheless, this qualitative interpretive case study yielded rich insights that will assist the researcher to construct a questionnaire for a Faculty wide survey that will include other campuses; so that the information services for the entire FANR at UNAM are redesigned to meet the academic demands of the 21st century.

5.5 Recommendations for future studies

- (i) A study on information-seeking behaviour involving all levels of students from first year to PhD level should be conducted. The inclusion of library staff as respondents and academic staff is highly recommended in order to fill in the gaps of some of the unanswered questions and to have a clear picture of library service for a faculty of agriculture in the digital world.
- (ii) Since the present study concentrated only on the Neudamm campus library, a further study should extend to other FANR campuses. This would inform the university as to the key needs in other libraries that FANR students and academics use.
- (vi) A study on competencies, knowledge and skills for Agriculture subject librarians or information specialists in the digital world is important.

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Appendix A: Informed consent form and focus group discussion schedule for undergraduate students

A1: Informed consent form for undergraduate students

Title of the study: Information-seeking behaviour of Faculty of Agriculture and Natural Resources' students at Neudamm campus, University of Namibia

Degree: Masters in Library and Information Studies

Institution: University of Cape Town

Researcher: Nekulu Uugwanga (+264812592452; nstuugwanga@gmail.com)

Supervisor: Dr Constance Bitso (+27 21 650 2488; connie.bitso@uct.ac.za)

The study investigates the information-seeking behaviour of the Faculty of Agriculture and Natural Resources (FANR) students at Neudamm campus. The objective is to determine their information needs, information seeking patterns, information evaluation and information use including preferences for information sources. I humbly request your time to participate in a focus group discussion that is guided by questions structured in such a way that your responses will yield data that will address the study's research questions. **The focus group discussion will take about 45-60 minutes.** Please note that all responses will be presented anonymously and treated confidentially. Your participation is voluntary and do not feel you are obliged to answer all questions particularly those that make you feel uncomfortable. You have the right to withdraw anytime and nothing will be held against you.

If you have any questions or contribution regarding this research, please feel free to ask me; you are also welcome to contact me or my supervisor.

Confirmation of informed consent to participate in a focus group discussion:

(Please initial at the end of each line if you agree)

I understand the background of this study and have asked any clarifying questions I wish _____

I understand I am participating voluntarily and may withdraw at any point _____

I understand that I am not obliged to answer all questions _____

I agree to this interview/focus group being recorded _____

I _____ agree to participate in the study described above.

Signature _____ **Date** _____

A2: Focus group discussion schedule for 4th year students

Introductions

I am Nekulu Uugwanga, a masters' student from the University of Cape Town. My research is on information-seeking behaviour of FANR students at Neudamm campus. I would like to determine their information needs, information seeking patterns, information evaluation and information use including preferences for information sources. The ultimate objective is to use the findings of the study to assist the Neudamm campus library management to improve the delivery of information services.

Once again, I kindly request to audio record the discussion and to make a few notes while we progress.

Would you like to introduce yourselves?

I will now switch on the tape recorder and start the discussion.

Ice breaking

1. Please tell me about your research. (*This question is intended to 'break the ice' and make participants feel comfortable. I will also probe information such as their programme of study, if unknown to me, and their research stage, that is, is the research at the beginning, in the middle or at the end.*)

Library facilities, services and resources

2. I would like to know if you use the library facilities, services and resources at Neudamm campus and how you feel about them.

2.1 Let us start with library facilities, here I am referring to things such as computer lab, library study area, photocopying and printing, etc. Would you please tell me which facilities do you use? How often do you feel when using the facilities? If you have negative feelings what do you usually do?

2.2 Let us focus on library services, things such as interlibrary loan, short loan, and one to one chat with librarians. Would you please tell which services do you use? How do you feel when using the services? If you have negative feelings what do you usually do?

2.3 Let us now focus on library resources; I am referring to:

- **Library material** such as books (print or electronic), reports, magazines, video collection, maps, etc.

- **Online reference databases** such as Animal Health and Production Compendium; e-Atlas of Global Development; Encyclopedia of Dairy Science & Britannica;
- **Databases** such as AGORA, TEAL, and CAB Abstracts.

Would you please tell me which resources do you use? How do you feel when using these resources? If you have negative feelings what do you usually do?

2.4 Would you please share with me how you think the Neudamm library can improve its facilities, services and resources?

2.5 At this point, I would like you to focus on information sources that you consult and use when you need information. Would you please share with me which people do you consult when you are seeking information and who these people are?

2.6 When you want to consult other people or use information resources to address your information needs which factors do you consider?

3. Would you please comment on your ability to use the APA reference style to properly reference different sources that you have cited in your essay, project, assignment, etc.

Information seeking

4. At this point, I kindly request that you focus on yourself when you are searching for information online; would you please share with me how you perform online searches?

4.1 In the process of searching for information online, if you find that you have retrieved hundreds of resources, how often do you feel and what do you usually do?

Do you think you need additional assistance with online searches? If so, how would you like the library to assist you?

4.2 At the moment, please focus on how you seek information to address your information needs. Do you work alone to find information, collaborate with others or ask someone else to find information on your behalf? Would you please share with me what influences your decision to seek information in a manner that you do?

Current awareness service

Currently the library alerts its users about the latest information resources through display units in the library and the library website. Will you please share with me your views on this mode of current awareness. Please suggest other channels that you would prefer to get information from the library

Challenges encountered when accessing and using information at Neudamm campus library

5. At this point, I kindly request that you focus on challenges that you encounter when accessing and using information at Neudamm campus library. Would you please share with me the challenges that you encounter when accessing information in Neudamm campus library in relation to library resources, library facilities, library services, library staff and fellow students.
6. Will you please suggest how the library can address these challenges.
7. Do you have any comment or question related to anything we have discussed?

"Thank you very much for your time"

Appendix B: Informed consent form and interview schedule for postgraduate students

B1: Informed consent form for postgraduate students

Title of the study: Information-seeking behaviour of Faculty of Agriculture and Natural Resources' students at Neudamm campus, University of Namibia

Degree: Masters in Library and Information Studies

Institution: University of Cape Town

Researcher: Nekulu Selma Takatsu Uugwanga (+264812592452; nstuugwanga@gmail.com)

Supervisor: Dr Constance Bitso (+27 21 650 2488; connie.bitso@uct.ac.za)

The study investigates the information-seeking behaviour of the Faculty of Agriculture and Natural Resources (FANR) students at Neudamm campus. The objective is to determine their information needs, information seeking patterns, information evaluation and information use, including preferences for information sources. I humbly request your time to participate in an interview that is guided by questions structured in such a way that your responses will yield data that will address the study's research questions. **The interview will take about 25-45 minutes.** Please note that all responses will be presented anonymously and treated confidentially. Your participation is voluntary and do not feel you are obliged to answer all questions particularly those that make you feel uncomfortable. You have the right to withdraw anytime and nothing will be held against you.

If you have any questions or contribution regarding this research, please feel free to ask me; you are also welcome to contact me or my supervisor.

Confirmation of informed consent to be interviewed:

(Please initial at the end of each line if you agree)

I understand the background of this study and have asked any clarifying questions I wish _____

I understand I am participating voluntarily and may withdraw at any point _____

I understand that I am not obliged to answer all questions _____

I agree to this interview/focus group being recorded _____

I _____ agree to participate in the study described above.

Signature _____ **Date** _____

B2: Interview schedule for postgraduate students

Introductions

I am Nekulu Uugwanga, a masters' student from the University of Cape Town. My research is on information-seeking behaviour of FANR students at Neudamm campus. I would like to determine their information needs, information seeking patterns, information evaluation and information use including preferences for information sources. The ultimate objective is to use the findings of the study to assist the Neudamm campus library management to improve the delivery of information services.

Once again, I kindly request to audio record the discussion and to make a few notes while we progress.

Would you like to introduce yourselves?

I will now switch on the tape recorder and start the discussion.

Ice breaking

8. Please tell me about your research. (*This question is intended to 'break the ice' and make participants feel comfortable. I will also probe information such as their department, if unknown to me, and their research stage, that is, is the research at the beginning, in the middle or at the end.*)

Library facilities, services and resources

9. I would like to know if you use the library facilities, services and resources at Neudamm campus and how you feel about them.

2.1 Let us start with library facilities, here I am referring to things such as computer lab, library study area, photocopying and printing, etc. Would you please tell me which facilities do you use? How often do you feel when using the facilities? If you have negative feelings what do you usually do?

2.2 Let us focus on library services, things such as interlibrary loan, short loan, and one to one chat with librarians. Would you please tell which services do you use? How do you feel when using the services? If you have negative feelings what do you usually do?

2.3 Let us now focus on library resources; I am referring to:

- **Library material** such as books (print or electronic), reports, magazines, video collection, maps, etc.
- **Online reference databases** such as Animal Health and Production Compendium; e-Atlas of Global Development; Encyclopedia of Dairy Science & Britannica;
- **Databases** such as AGORA, TEAL, and CAB Abstracts.

Would you please tell me which resources do you use? How do you feel when using these resources? If you have negative feelings what do you usually do?

2.4 Would you please share with me how you think the Neudamm library can improve its facilities, services and resources?

2.5 At this point, I would like you to focus on information sources that you consult and use when you need information. Would you please share with me which people do you consult when you are seeking information and who these people are?

2.6 When you want to consult other people or use information resources to address your information needs which factors do you consider?

10. Would you please comment on your ability to use the APA reference style to properly reference different sources that you have cited in your essay, project, assignment, etc.

Information seeking

11. At this point, I kindly request that you focus on yourself when you are searching for information online; would you please share with me how you perform online searches?

11.1 In the process of searching for information online, if you find that you have retrieved hundreds of resources, how often do you feel and what do you usually do?

Do you think you need additional assistance with online searches? If so, how would you like the library to assist you?

11.2 At the moment, please focus on how you seek information to address your information needs. Do you work alone to find information, collaborate

with others or ask someone else to find information on your behalf? Would you please share with me what influences your decision to seek information in a manner that you do?

Current awareness service

Currently the library alerts its users about the latest information resources through display units in the library and the library website. Will you please share with me your views on this mode of current awareness. Please suggest other channels that you would prefer to get information from the library

Challenges encountered when accessing and using information at Neudamm campus library

12. At this point, I kindly request that you focus on challenges that you encounter when accessing and using information at Neudamm campus library. Would you please share with me the challenges that you encounter when accessing information in Neudamm campus library in relation to library resources, library facilities, library services, library staff and fellow students.
13. Will you please suggest how the library can address these challenges.
14. Do you have any comment or question related to anything we have discussed?

"Thank you very much for your time"

Appendix C: Informed consent form for academic staff

C1: Informed consent form for academic staff

Title of the study: Information-seeking behaviour of Faculty of Agriculture and Natural Resources' students at Neudamm campus, University of Namibia

Degree: Masters in Library and Information Studies

Institution: University of Cape Town

Researcher: Nekulu Uugwanga (+264812592452; nstuugwanga@gmail.com)

Supervisor: Dr Constance Bitso (+27 21 650 2488; connie.bitso@uct.ac.za)

The study investigates the information-seeking behaviour of the Faculty of Agriculture and Natural Resources (FANR) students at Neudamm campus. The objective is to determine their information needs, information seeking patterns, information evaluation and information use including preferences for information sources. I humbly request your time to participate in this interview that is guided by questions structured in such a way that your responses will yield data that will address some of my research questions. **The interview will take about 15-20 minutes** The ultimate objective is to use the findings of the study to assist the Neudamm campus library management to improve the delivery of information services. The researcher included some academic staff on campus who are involved in research supervision to solicit their views on FANR's students' information needs and suggestions on how the library can improve its facilities, services and resources.

Please note that all responses will be presented anonymously and treated confidentially. Your participation is voluntary and do not feel you are obliged to answer all questions particularly those that make you feel uncomfortable. You have the right to withdraw anytime and nothing will be held against you.

If you have any questions or contribution regarding this research, please feel free to ask me; you are also welcome to contact me or my supervisor.

Confirmation of informed consent to be interviewed:

(Please initial at the end of each line if you agree)

I understand the background of this study and have asked any clarifying questions I wish _____

I understand I am participating voluntarily and may withdraw at any point _____

I understand that I am not obliged to answer all questions _____

I agree to this interview being recorded _____

I _____ agree to participate in the study described above.

Signature _____ **Date** _____

C2: Interview schedule for academic staff

Introductions

I am Nekulu Uugwanga, a masters' student from the University of Cape Town. My research is on information-seeking behaviour of FANR students at Neudamm campus. I would like to determine their information needs, information seeking patterns, information evaluation and information use, including preferences for information sources. The ultimate objective is to use the findings of the study to assist the Neudamm campus library management to improve the delivery of information services. My intention is to solicit the views of academic staff on students' information needs, information seeking patterns and challenges encountered by students whenever accessing and using the Neudamm campus library. Therefore, I kindly request your time to participate in an interview that will take about 15-20 minutes of your time.

Once again, I kindly request to audio record the interview and to make a few notes while we progress.

Would you like to introduce yourself?

I will now switch on the tape recorder and start the interview.

1. Please tell me how long you have been an academic staff at Neudamm campus. How long you have been involved in research supervision? How many students and at level are you supervising?
2. Are there **any databases, books, journals, newspapers**, etc. that you think the library should acquire for your students?
3. Will you please share with me some of the challenges that research students **have with referencing including the use of APA reference style**? Do you have any suggestions on how the library can assist to address these challenges?
4. As an academic, what limitations have you observed from the research students relating to the use of information? Would you please suggest how the library can help to these limitations?
5. As an academic, what would you say are the challenges that research students encounter when accessing and using information for their academic work?

Do you have any suggestions on how the library can assist to address these challenges?

6. Currently the library alerts its users about the latest information resources through display units in the library and the library website. Will you please share with me your views on this mode of current awareness. Please suggest other channels that you would prefer to get information from the library?
7. I would like to know if you use the library facilities, services and resources at Neudamm campus. Would you please explain how you often feel when using these facilities, services and resources? If you ever feel **anxious or frustrated**, what do you usually do? I am also keen to find out from you **what the Neudamm library can do to improve its facilities, services and resources**.
8. Do you have any comment or question related to anything we have discussed in this interview?

“Thank you very much for your time”

Appendix D: Ethical Clearance Certificate: University of Cape Town



Library and Information Studies Centre

University of Cape Town
Upper Campus

Private Bag X1, RONDEBOSCH, 7701 South Africa
Level 6 Hlangonani, Chancellor Oppenheimer Library
Tel: +27 (0) 21 650 4546 Fax: +27 (0) 21 650 2520
E-mail: lib@uct.ac.za
Internet: www.lisc.uct.ac.za

Ref no: LIC/IS201606-03

30 June 2016

Dear Ms Uugwangwa

I am pleased to inform you that ethical clearance for the data collection for your master's study *The information-seeking behaviour of Faculty of Agriculture and Natural Resources students at Nendamm campus, University of Namibia* has been granted by an Ethics Review Committee of the Library and Information Studies Centre, Faculty of Humanities, on behalf of the University of Cape Town.

I wish you well with your study.

Yours sincerely,

Ms Michelle Kalin

Chair, Department (LISC) Research Ethics Committee

Appendix E: Ethical Clearance Certificate: University of Namibia



ETHICAL CLEARANCE PERMISSION CERTIFICATE

19 August, 2016

Dear Ms. Selma Uuwanga

RE: APPLICATION FOR PERMISSION TO CONDUCT RESEARCH AT UNAM

Your application for permission to conduct research at UNAM entitled : *'Information-seeking Behaviour of Faculty of Agriculture and Natural Resource Students at Neudamm Campus, University of Namibia'* was received. It was evaluated by our experts in accordance with the relevant UNAM policies and related guidelines. Permission is hereby granted with the following conditions:

- a) During the course of your research at UNAM, you will observe the required procedures, norms and ethical conduct in accordance with the relevant policies and guidelines. If not sure, please consult the Centre for Research and Publications (CRP) at UNAM for guidance. Any deviations from the proposed approach will have to be approved first, before implementation.
- b) The results/research findings will be shared with the PVC (RID), through the Centre for Research and Publications (CRP) and/or his nominees before they are disseminated or published in the public domain.
- c) On completion, a copy of the Research Report must be lodged with the UNAM Library for our reference.
- d) Proper/full acknowledgements of the University of Namibia and all participants/respondents shall be done in the Research Report and any subsequent publications arising from this research.

If you agreeable to the above conditions, please sign and date a copy of this letter and return to the Centre for Research and Publications (CRP) at your earliest convenience. If you have any queries, do not hesitate to contact the CRP. I wish you all the best with your research activities.

Yours faithfully

Dr. H.M. Kapenda

DIRECTOR: CENTRE FOR RESEARCH AND PUBLICATIONS

I accept and agree to the above conditions

FULL NAME & SURNAME

SIGNATURE

DATE