AWARENESS AND USAGE OF ONLINE PUBLIC ACCESS CATALOGUE BY UNDERGRADUATE STUDENTS AT UNIVERSITY OF VENDA

BY

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DECLARATION

I **Mashia Martina Shokane**, declare that this dissertation hereby submitted to the Programme of Information Studies, Department of Communication, Media and Information Studies belongs to me and has not been submitted before for any other degree at any other university. I also declare that this is my work and the references have been duly acknowledged.

…… ……

SHOKANE M.M. DATE

DEDICATION

This work is dedicated to my loving parents **Lizzy and John**, my son **Percy** and my partner, whose unconditional support, encouragement, love and inspiration have enabled me to complete this research project.

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ABSTRACT

Online Public Access Catalogue (OPAC) plays a critical role in assisting library patrons to effectively and efficiently locate information resources from the academic library. This study examined awareness and usage of the existing OPAC functionalities and capabilities among undergraduate students at the University of Venda (UNIVEN). The research methodology for the study was guided by the adoption of quantitative research approach and descriptive survey design. The data collection tool used was a google forms questionnaire, through which the link was distributed to all undergraduate students at UNIVEN via e-mail. Systematic random sampling method was used to arrive at a sampling frame of five hundred and sixty-three (563) participants represented in all eight (8) schools that comprise UNIVEN academic structure. The findings of the study revealed that the majority of undergraduate students rated their level of awareness as average. Their major source of awareness of OPAC is library training. Most of respondents were not aware and familiar with OPAC functionalities such as Boolean operators, truncation marks and advanced search. The study further revealed positive attitudes and promising perceptions towards OPAC. In terms of usage, the findings show that most of the respondents occasionally use OPAC, and the majority use a title search entry to conduct their search on OPAC and they prefer to use a simple search option. Furthermore, most of participants showed that their purpose of OPAC usage is to locate books in the library. The major challenge encountered by respondents in using OPAC was slow internet connectivity and their lack of skills in searching information from OPAC. Based on these findings, this study recommends that librarians ought to promote the importance of using all OPAC functionalities to improve awareness and optimal usage of the OPAC functionalities as an information retrieval tool. There is a need for intensified training on advanced search options, such as Boolean operators, Truncation marks and advanced search, through one-on-one instruction and Lib-guides.

KEYWORDS: Online Public Access Catalogue (OPAC), usage patterns, OPAC functionalities, undergraduate students, University of Venda.

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LIST OF ACRONYMS AND ABBREVIATION

ERIC- Educational Information Resources Centre

FGD- Focus Group Discussion

IBL- Ibrahim Babangida Library

ICT- Information and Communication Technologies

IR's- Institutional Repositories

IT- Information Technology

MAUTech- Modibbo Adama University of Technology

OPAC- Online Public Access Catalogue

PLE- Principle of Least Effort

RSS- Really Simple Syndication

SPSS- Statistical Package for Social Sciences

TREC- Turfloop Research Ethics Committee

UNIVEN- University of Venda

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.1. INTRODUCTION

The academic libraries provide information sources and materials in both print and electronic formats to their users for the accomplishment of teaching, learning, research and community outreach projects. Thus, the core functions of academic libraries include acquisition and collection development services, information and knowledge organising services for easy access, as well as reference and information services for the dissemination or distribution of information sources in both print and electronic formats (Husain and Nazim, 2015). In this study, emphasis is placed on services designed for easy access to organised collections through an information retrieval tool known as Online Public Access Catalogue (OPAC). OPAC is an online library catalogue which encompasses all bibliographic information of all collections in the library in both print and electronic format. It is a surrogate or bibliographic record of all items collected, organized and made accessible to the users (Clarke, 2014). It is used for establishing what the library has on a specific subject or by a specific author. In simple terms, the online library catalogue is a collection of searchable records about each item in the library (Machet, 2012). For library users to access library and information resources, they must first consult the online library catalogue. To find books, journal, encyclopedias and other reference sources, as well as other library and information resources in the academic library, one has to go through the online library catalogue. Without checking the online library catalogue, it will be nearly impossible for a client or library user to know where to find an information source on a given subject or by a specific author on the shelf within the academic library (Monyela, 2019). Therefore, OPAC plays a critical role in assisting library patrons to locate available information resources from the academic library effectively (Tam, Cox and Bussey, 2009; Rubin, 2017; Gana, Ajibili and Abel, 2019).

Historically, libraries used to compile library card catalogues through which users could access library collections and materials (Kumar, 2017). However, among some of the

changes brought about by Information and Communication Technologies (ICT) in academic libraries today is the replacement of the card catalogue with the OPAC. Subsequently, the era of the traditional library card catalogue, where the bibliographic description of library resources was recorded and organised alphabetically in a filing cabinet has diminished as OPAC has gained popularity and taken the centre stage in almost all university libraries globally. Wells (2007) defines OPAC as an online database where one or a group of libraries hold all records. OPAC has become a new tool through which users could get access to library collections, information resources. It is a precise, effective and efficient tool for easier and quicker access to library and information resources, both in print and electronic format (Husain and Ansari, 2006; Gohain and Saika, 2013; Emiri, 2015; Nwobu, Oyeole and Apotiade, 2016; Kumar and Singh, 2017).

Monyela (2019: 1) notes that well-created online library catalogue provides a means for an index of a collection of information sources found in libraries that enables library users to discover which information sources are available and where they are in the library. Such a library catalogue should provide library users with information pertaining to creators' names, titles, subject terms, standard number, publication area, physical description and notes that describe those information sources to facilitate easy information retrieval. Therefore, the purpose of using an online library catalogue (OPAC) is not only to obtain the location number for the materials in the library, but also to provide a gateway through which other library services and resources for accessing library materials are found.

OPAC has modernised the traditional means for the accessibility of library resources in general and academic libraries in particular (Fabunmi and Asubiojo, 2013). OPAC is characterised by an information retrieval system interface which enables information seekers to access not only bibliographic records of library materials, but also full-text library materials using various access points such as author, title, subject, series title, accession number, International Standard Book Number, and call number (Monyela, 2019). In case of full-text articles from journals, users may access them by using a combination of access points such as name of the journal, article of journal, name of

author, volume number, issue number and page numbers or subject entries. Its main advantage over the traditional library card catalogue is that library users can search information from a web- based OPAC in the comfort of their homes, offices, halls of residences, or even on mobile devices prior to visiting the library to obtain the physical or printed library material (Fabunmi and Osubiojo, 2013). Machet (2012: 87) acknowledges that with OPAC, you do need to visit the library in person to check the availability of information sources, and further that one can search OPAC of any library and request it through the inter-library loan.

OPAC also “offer vast capacities and functionalities for searching like Advanced search, Keyword search, Boolean search and Truncation search as compared to the traditional card-based catalogue search options” (Kumar and Vohra, 2013: 37). Furthermore, the online library catalogue it provides abundant flexibility and various ways and options for library users to gain unmediated access to information relating to library resources by conjoining two or more bibliographic fields or access point. Jiang, Chi and Gao (2017: 213) wrote:

> The scope of search is no longer limited to the physical collections of libraries, but also extends to digital collections, article databases, webpages, and other academic resources. Users are offered a Google-like search experience, including effective querying assistance, better relevance ranking, faster response, and higher consistency.

Wells (2007: 387) notes that the library's online catalogue contains at least three unique roles:

- “It functions first as a bibliographic database, an electronic version of the card catalogue it replaced, serving as an index for users looking for certain books, for example. As a logical extension of this, the OPAC is progressively providing links to electronic texts, allowing users to avoid physically searching the library's shelves.
- Second, it acts as a portal in a similar fashion to a library homepage, offering links to non-bibliographical data relating to users – such as information about overdue books, fines, and so on – as well as other library information like as opening hours. In theory, this portal function may be extended indefinitely to connect to a variety of data that library users could find useful.
- Third, the OPAC serves as a promotional tool, promoting the library's presence and services while also establishing authority over the communication links it supports and facilitates. Although the issue of authority is crucial in the creation

> and transmission of knowledge, the bibliographic function of the OPAC will be the primary focus of the following discussion".

With OPAC, today users simply search diverse kinds of resources similar to databases, e-resources and digital repositories that are managed by the library. It is a gateway to the library's collection (Eserada and Okolo, 2019). Therefore, it is imperative that library users should learn how to search the library catalogue by electronic means, which can enable them to locate relevant information sources such as books, periodicals, journals, reference sources or other library materials and services in a quicker manner (Arshad and Shafique, 2014: 287). The advantage of using OPAC is its capability to access information in the library remotely. This saves time for users as there is no need for them to physically go to the library.

Literature shows that the first OPACs as a new system for retrieval of information were executed in libraries and information centres on the mid to late 1970's (Islam and Ahmed, 2011). Later at that time, library and information science researchers conducted several studies to examine the usage of OPAC. Morupisi and Mooko (2006) provide a detailed account of long-standing global studies on the usage of library catalogues in university libraries globally (Mathews, 1986; Peters, 1991). These studies looked into the attitudes of library users towards online or web operational catalogues, their satisfaction levels with these tools and their performance for the purpose of their future design and development (Morupisi and Mooko, 2006). Islam and Ahmed (2011) also identify studies that examined users' acceptance of OPAC (Dowlin, 1980; Borgman, 1986) and the review of literature on the use of OPAC (Large and Beheshti, 1997). Although there are several studies that looked into the awareness and usage of OPAC by different groups of library users in academic libraries, it appears that those studies lack concentration on the awareness and optimal usage of advanced OPAC functionalities and capabilities. This has led to the situation where the current crop of library users' desire simple information search options which result in irrelevant hits.

1.2. BACKGROUND INFORMATION

The University of Venda (UNIVEN) is a South African rural based higher education institution, which is located in the Thohoynadou area of Vhembe District of the Limpopo Province (Tlakula and Fombad, 2017). The university was established in 1982. Historical black colleges and universities were formed to provide space where Africans could be taught separately from white peers (Andrews, 2020: 17). Like most of other historically black institutions of higher learning, UNIVEN was established to serve black people, especially Tshivenda-speaking people in Limpopo Province. UNIVEN is comprised of four faculties namely: Faculty of Health Sciences; Faculty of Humanities, Social Sciences and Education; Faculty of Management, Commerce and Law; and Faculty of Science, Engineering and Agriculture. UNIVEN has eight schools namely: The School of Agriculture, The school of Education, The School of Environmental Sciences, The School of Health Sciences, The School of Humans and Social Sciences, the School of Law, The School of Management Sciences and The School of Mathematical and Natural Sciences.

Sikhwari (2007: 520) confirms that this university is one of the institutions which is located in a disadvantaged environment, offering educational and development opportunities for the students who dwell in largely rural and impoverished populations and communities. Therefore, the academic library at UNIVEN serves students located in poor, rural and disadvantaged backgrounds who were not exposed to information technologies for accessing information for their studies. Tlakula and Fombad (2017: 863) confirm that "most of the students who attend this university for the first time lack basic information-handling skills, including basic computer skills. A majority of these students also come from technologically disadvantaged schools and, therefore, are poorly equipped to use computers for purposes of accessing information that is largely available electronically".

Therefore, there is likelihood that undergraduate students at the UNIVEN may have limited awareness of advanced OPAC functionalities and capabilities, which may lead to its low usage. Most undergraduate students, especially those in rural universities, find a

university library intimidating and daunting. This is because most of them are exposed to the university library for the first time when they enroll at the universities. Therefore, they lack basic information handling skills, as well as field search and Boolean searching skills (King, 2007; Rubin 2017; Tlakula and Fombad, 2017). It has also been observed that when undergraduate students are tasked with their first assignments during the first term of the year, there is always disorder or disarray of books on the shelves, caused by students who go directly to the shelves without having consulted the online library catalogue or OPAC (Ishola and Ojeniyi, 2015; Gana, Ajibili and Abel, 2019). Yeboah (2018) also observes that library users usually approach the Reference Desk for basic information and enquiries that could be answered with the help of OPAC. This defeats the concepts of self-help and independence.

Undergraduate students at this university depend on the academic library for information to support teaching, learning, research and community development. Therefore, UNIVEN library should acquire, organise and disseminate information to library users to support teaching, learning, research and community development. UNIVEN has also adopted OPAC for its users. This tool enables library users to access library materials and electronic resources such as Institutional Repositories, databases and other resources from the library. Therefore, the current study seeks to examine not only awareness of the existence of OPAC by undergraduate students, but also sources of awareness, as well as awareness of different functionalities and capabilities of OPAC and its usage by undergraduate students, as well as assessing and identifying challenges that undergraduate students encounter in search of information from OPAC. UNIVEN offers qualification for degree, diploma and certificate and has set admission requirements. In this study, undergraduate student refers to students who has not yet completed a degree, diploma and a certificate. Undergraduate students are specifically chosen in this study because their awareness and usage of OPAC are crucial for life-long learning, especially for the students who come from rural and poor background. The Council for Higher Education (2018) showed that the majority of students at higher education institutions in South Africa are at undergraduate levels. Therefore, concentrating on undergraduate

students, efforts are being made to ensure that a large number of future leaders in the country are developed into independent and lifelong learners.

1.3. PROBLEM STATEMENT

With the introduction of web technology, attention for research has been directed towards the design and development of OPAC systems that are based on information-searching behaviours of users. Current developments dictate that academic libraries and information centres have to rethink on application of a more advanced web 2.0 and web 3.0 technological applications to make this information retrieval system more efficient, practically useful, operational and attractive to users. More studies and research emerged (Babu and O'Brien, 2000; Kumar, 2012; Ruzegea, 2012; Voster, 2012; Chilimo, 2014; Ho and Horne-Popp, 2014, Yu and Young, 2017, Patel and Bhatt, 2019), to name a few, to look into the usability of OPAC in web 2.0 and web 3.0 environments. However, it appears that there is dearth of studies on the awareness of more advanced OPAC functionalities and capabilities, which library users could manipulate to find and handle information efficiently and effectively, more especially in the rural environment like the University of Venda, Limpopo Province.

There is evidence that shows a decline in students' usage of OPAC (Danskin, 2007; De Jager, 2007; Tam, Cox and Bussey, 2009; Chilimo, 2014; Song, Buba and Song, 2018; Rubin, 2017: 179-180). De Jager (2007: 48) confirms that "while libraries still spend much time and money on building and maintaining online catalogues according to accepted international standards, there is considerable evidence that users are inclined to bypass libraries and their catalogues in their search for information and to rely solely on information provided by web search engines". There is a growing trend that the current crop of undergraduate students routinely bypass OPAC systems in favour of new discovery tools and search engines. Undergraduate students prefer systems that have the same search functionalities with those of google (Fresnido and Barsaga, 2019). Therefore, search engines influence the majority of undergraduate students' OPAC information retrieval strategies, because they search OPAC like they are searching on

google (Fresnido and Barsaga, 2019). It is “more a battle of survival and sustainability for OPAC as against its close contemporary the web-search engine” (Kumar, 2012: 69).

While some studies attribute the decline of OPAC to users bypassing this tool in favour of web search engines, other studies attribute this decline to the rural and poor background where these students come from. The information-searching behaviour of undergraduate students from rural communities, and their skills and competencies for optimal usage of OPAC are becoming a cause for concern. This study, therefore, seeks to find out whether undergraduate students at the University of Venda are aware of advanced functionalities and capabilities provided by OPAC, and if so, whether or not they use them optimally to access library and information services, sources or materials, and how often they use OPAC and for what purpose. The study also seeks to identify challenges they encounter in using OPAC these functionalities and capabilities.

1.4. PURPOSE OF THE STUDY

1.4.1. Aim of the study

This study seeks to examine awareness and usage of the existing functionalities of Online Public Access (OPAC) to access library resources among undergraduate students of the University of Venda (UNIVEN).

1.4.2. Objectives of the study

- To assess the level of awareness of OPAC functionalities and capabilities amongst UNIVEN undergraduate students.
- To establish perceptions of UNIVEN undergraduate students towards OPAC functionalities and capabilities.
- To determine the frequency in which undergraduate students at UNIVEN use OPAC functionalities and capabilities to access library materials.
- To ascertain the purposes for which undergraduate students at UNIVEN use OPAC functionalities and capabilities.
- To identify challenges encountered by undergraduate students in using OPAC functionalities and capabilities at UNIVEN.

1.5. SIGNIFICANCE OF THE STUDY

Studies of this nature, have potential not only to allow librarians to better help undergraduate students, but also to assist system designers to produce better OPAC functionalities and capabilities that are based on information searching behaviour of undergraduate students (Madhusudham, 2012). This entails that the study will also help the University of Venda management, OPAC interface developers and librarians to explore new ways of making OPAC more effective and relevant to its users when they search for books, journals articles and other services provided by the library. Moreover, determining undergraduate students' level of awareness about functionalities and capabilities provided by OPAC and establishing their usage thereof, is the first step towards developing training interventions for undergraduate students at the University of Venda. This research will also help students to understand how OPAC can assist to improve their academic performance by accessing quality materials that are reliable, accurate, authentic and realistic compared to Wikipedia and Google information sources that appear to be their sources of information for their studies.

1.6. RESEARCH METHODOLOGY

The research methodology in this study involved procedures and methods that were followed for the purpose of collecting and analyasing data in this study. The section covers research approach, research design, population and sampling, data collection instruments and data analysis. Furthermore, quality criteria outlining pilot study, reliability and validity, as well as ethical considerations form part of the research methodology of this study.

1.6.1. Research approach

The research study adopted the quantitative research approach, guided by the positivist research paradigm. Frey (2018) notes that the quantitative research approach emphasises figures and numbers in the collection and analysis of data. The use of numerical data eases the time and determination, which the researcher would have spent in arriving at the results and conclusions of the research.

1.6.2. Research design

The study adopted the descriptive survey research design. “The goal of descriptive survey research design is to describe a phenomenon and its characteristics” (Nassaji, 2015: 129), and to collect data from a sample of people about that phenomenon by ensuring that natural existing situations are assessed (McMillan, 2014: 30). In this study, a descriptive survey research was used to examine OPAC functionalities and capabilities and the extent of awareness and usage of OPAC by undergraduate students at the University of Venda.

1.6.3. Population and sampling

The population for this study consisted of undergraduate students in all eight schools at UNIVEN. This research used a systematic random sampling method in which the total number of all undergraduate students was established from the University of Venda Annual Report (2019: 47) as 5 941. The number of participants was arrived at on the basis on an interval, known as the kth or eleventh element (Maree, 2016: 195), which resulted in a sample frame of 449 as the targeted number of participants. However, the google form questionnaire that was distributed to the students via a link was not locked or set up to exclude those who submitted their responses after the targeted population has been reached. Therefore, the number of participants was 563 instead of 449. To fix this shortcoming, the candidate has to change the number of undergraduate students at the University of Venda as 6 193. This enabled the candidate to have the number of respondents as 563 using the Kth or 11^{th} element interval from the total population. The details are provided in chapter three.

1.6.4. Data collection

This study adopted a google form questionnaire as a data collection method. A questionnaire was more advantageous over other data collection methods because it was sent to a large number of individuals is likely to involve less expensive procedures (Debois, 2019). The questionnaire consisted of closed-ended questions to address the

quantitative aspects of the study. Closed-ended questions permit respondents to choose only from answers provided in the questionnaire (Farrel, 2016).

1.6.5. Data analysis and presentation

In this study, quantitative data was analysed using Microsoft Excel Spreadsheet. The computer program Microsoft Excel is software that is part of Microsoft Office Suite, which makes it easier for users to calculate, format and organise data using the spreadsheet system (Voytsekhivska and Voytsekhivskyy, 2021). The data was presented through pie charts and bar graphs.

1.6.6. Quality criteria

Before the major study was undertaken, the researcher confirmed reliability and validity of the instrument used to collect data by conducting a pilot study. The questionnaire was distributed to some fewer participants to complete. This was done to assist the researcher to identify potential problems and gaps that may have an effect on the quality and validity of findings.

1.7. ETHICAL CONSIDERATIONS

This study ensured that ethical considerations are adhered to. First, the researcher applied for an ethical clearance certificate from Turfloop Research Ethics Committee (TREC) and University of Venda Ethics Committee to be given to all people gatekeeping the participants, such as the university librarian, the university registrar and academics. To maintain confidentiality, respondents were made anonymous. They were also asked to sign a consent document before completing the google form questionnaire to prove that they were not forced to participate in the study by making a tick in the area provided on the questionnaire.

1.8. OUTLINE OF CHAPTERS

The outline of chapters in the research report are organised as follows:

Chapter One: Introduction and background information

This chapter provides an overview of the study. It consists of the introduction and background information on which the study was developed to introduce the reader to the main focus of the study. This was followed by a problem statement, purpose of the study, aim and objectives of the study, significance of the study and a brief outline of the research methodology as well as the ethical considerations of the study.

Chapter Two: Theoretical framework and Literature review

Chapter Two comprised literature review that is relevant to the study, which helped to align the existing literature to the research problem and objectives in the study. The theoretical framework on which this study was based is also discussed in this chapter.

Chapter Three: Research methodology

The chapter discussed in detail the research methodology that was used to collect data in the study. The chapter includes the research approach and the research design that were adopted in the study, the population and sampling method that was adopted, data collection instruments and how data were analysed.

Chapter Four: Data presentation, analysis and interpretation

This chapter entails the presentation and analysis of data. The results are presented and analysed using bar graphs and pie charts, and are discussed and interpreted descriptively in a narrative form using the literature review.

Chapter Five: Major findings, concussions and recommendation

The last chapter of the study discusses the major findings and conclusions about the research objectives. Based on the findings and conclusions, the recommendations are also made, not only for this study, but also for future studies arising out of the results of this study.

1.9. CHAPTER SUMMARY

The chapter introduced the subject for the study, which is OPAC, background to the study and reported on the problem statement, and purpose of the study where the aim and objectives were outlined. Furthermore, the research methodologies adopted are discussed in brief.

Chapter Two presents the literature review and the theoretical framework guiding the study

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. INTRODUCTION

This chapter focuses on reviewing the previous literature or published works relating to awareness and usage of OPAC by undergraduate students in institutions of higher learning across the world. Literature review involves analysing the scholarly works that were produced in the past in relation to the research topic. Pickard (2013: 26) describes "literature review as a critical discussion or evaluation of all significant, publicly available reading materials in the form of books and scholarly journal articles that contribute to the understanding of the subject matter." The importance of reviewing and analysing these published scholarly works is to provide their description, "summary and critical evaluation in relation the research problem that is currently being investigated in this study" (Labaree, 2009). The literature review in this chapter is presented according to the objectives of the study, which include assessing awareness, usage of OPAC functionalities and capabilities, as well as the identification of challenges encountered in the utilisation of OPAC by undergraduate students.

It worth noting that OPAC, as an information retrieval tool, is among some of the electronic information resources employed in university libraries for the retrieval of information for study purposes, teaching, learning and research (Ternenge and Kashimana, 2019). Therefore, some of the previous studies that looked at the awareness and usage of electronic information resources are also reviewed in this chapter. However, before reviewing literature in accordance with the themes derived from the objectives of the study, this chapter also provides a theoretical framework or model on which the study is based, namely; Taylor 's Information-seeking Behaviour Model.

2.2. THEORETICAL FRAMEWORK

According to Adom, Hussein and Agyem (2018: 438), a theoretical framework is a "blueprint' or guide for a research", and is included in every study in order to justify the reasons behind the existence of a problem that is being investigated. Students' awareness and use of advanced OPAC functionalities and capabilities can be explained better when glanced from the perspectives of information-seeking behaviour theories or models. An information-seeking behaviour theory is a field in information science (studies) which is concerned with how people seek and make use of information, the channels they use to get the information, as well as factors that encourage information use. Daily living situations and activities generate information needs, wants and demands for information (Wilson, 2006). In order to satisfy these information needs, demands and wants, people approach both informal and formal systems of information (Case and Given, 2016). Informal systems may be colleagues, friends, brothers, sisters, organisations, parents, neighbours, associations etc, who provide to individuals a bulk of common information needs (Hagar, 2012). However, as the information need grows or develops, people turn to formal sources of information such as libraries, schools, computers, including OPAC etc., for help (Brumfield, 2008). Therefore, immediately one begins keying or typing in the keywords and any other search terms in an information retrieval system such as the library catalogue or approaches to find information to meet a specific need, he or she is seeking information from formal channels of communication or information.

There are various studies that have been conducted on information-seeking behaviour of people that have resulted in a number of information-seeking behaviour models (Wilson, 1981, 1996, 1999; Ellis, 1989; Taylor, 1962; Kuhlthau, 1991). A paper written by Ikoja-Odongo and Mostert (2006) reviewed most of these models, including those that deal with information-searching and retrieval in an electronic environment (Ingwersen, 1996; Choo, Detlor and Turnball, 1999, 2000). Among all the information seeking behavior models that have been proposed as a result of studies on information-seeking behaviour, this study has adopted Taylor's Information-seeking Behaviour or Question-Negotiation Model. The model is represented in Figure 1.1 below.

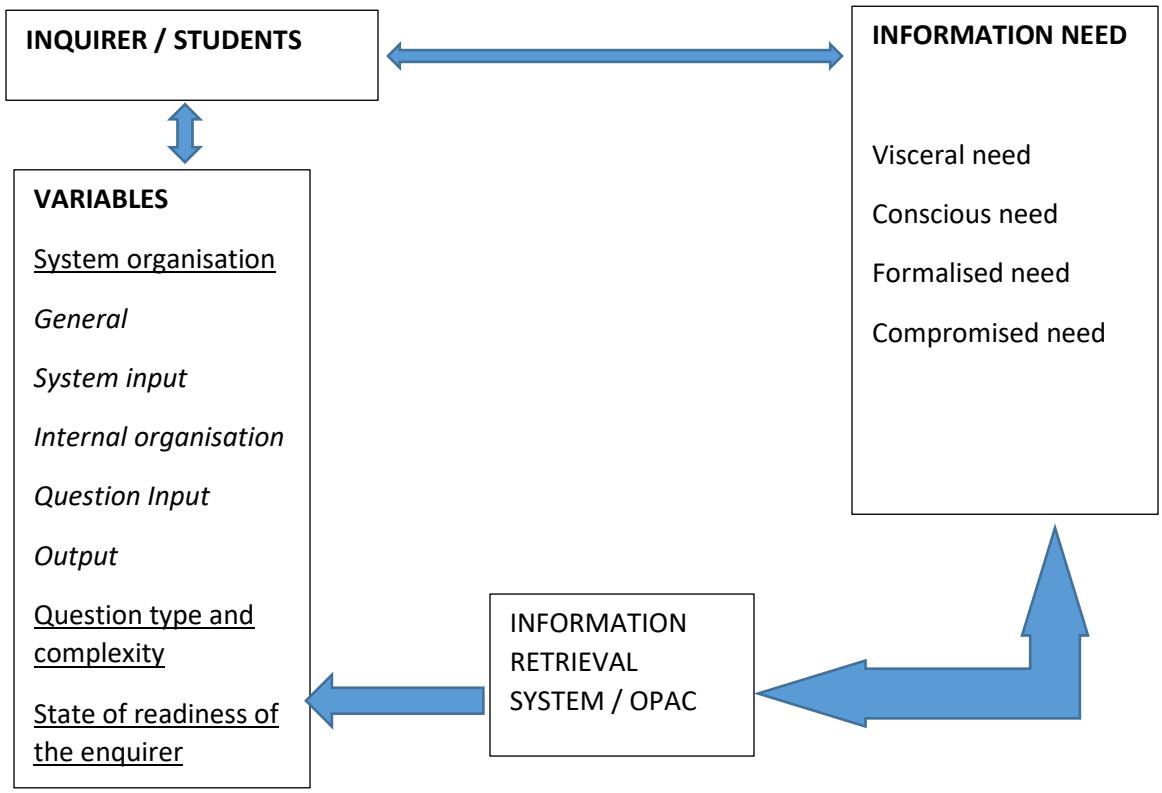

Figure 1.1: Taylor's Information-seeking Behaviour Model.

In this Information-seeking Behaviour or Question-Negotiation Model, Taylor (1962; 1968) provides an analysis of the nature of the relationship between humans with an information need and information retrieval system, which is expected to provide an answer or feedback to the individual or inquirer. The model examines the individual's or inquirer's (undergraduate students in this study) approach to question formulation, and asks a question to the information retrieval system (OPAC), which in turn must provide an answer or feedback. According to this model, there are four (4) levels of information needs, which include:

- "The actual, but unexpressed need for information (the visceral need)
- The conscious, within brain description of the need (the couscous need)
- The formal statement of the need (the formalised need)

- The question as presented to the information system (the compromised need)". (Edwards, in Fisher, Erdelez and Mckechnie, 2005; Tyckoson, 2015: 247- 248).

Before an information need is met, users feel the need to close the information gap by undergoing four levels of information need which is actual need, but unexpressed; secondly, the conscious within brain description of the need; thirdly, the formal statement of question; and lastly, the question as presented to information system. During the last level (compromised need) there are three categories of problems or variables that exist during the interaction between the enquirer and the information retrieval system. These included system organisation, question type and complexity, and the state of readiness of the enquirer. The system organisation consists of variables within any information system that may affect the question or query and its formulation by the seeker. These variables are divided into five groups, namely, general aspects, system input, internal organisation, question input and output (Taylor, 1962). Question type and complexity include aspects such as the language of the information system, the subject matter, and the arrangement of entries in the system, while the state of readiness of the inquirer has something to do with the user's level of education, experience, skills and familiarity in searching the information retrieval system. Othman and Halim (2004: 200) add that "it is possible that users may encounter problems related to retrieval even with common functionalities since each piece of information need requires different approach to conduct searches". The main objective of information systems is to make commonplace the point of maximum usefulness where three coordinates cross: level of question, state of readiness, and the available answer (Taylor, 1962).

This model is chosen for the purpose of this study because it describes processes that users (students) must perform, consciously or unconsciously, in order to obtain information from an information retrieval system (OPAC). Although in Taylor's days, that is, in 1962, the information retrieval system took the form of printed sources such as books, journals, magazines, reports and other research tools of the time such as card catalogues and printed indexes and abstracts, some of the information retrieval tools such

as databases and OPAC were anticipated in this model. Tyckoson (2015: 249) argues that the four levels of information needs identified by Taylor remain important factors in searching for information even today.

According to Singh, Kumar and Khanchandani (2015:25), information-seeking behaviour involves “a set to actions that an individual student takes to express his or her information needs to an information retrieval system to satisfy his or her information needs”. However, various factors that are discussed in this model may determine the success or failure of finding this information. It is therefore desirable to understand the information retrieval system which students operate, their skills in searching the information retrieval system (OPAC), as well as other barriers that they may encounter in their quest for information to satisfy their needs.

2.3. UNDERGRADUATE STUDENTS’ AWARENESS OF OPAC

Song, Buba and Song (2018) define awareness as the “cognitive state or ability of a person to notice, decipher and judge a given phenomenon”. Knowledge of OPAC is, therefore, the first step to its utilisation. This entails that before people can use a particular system, they must first be aware of the existence of that system and its purported benefits. Therefore, an information system such as OPAC cannot be utilised by someone who does not have a slight knowledge of its existence and the benefits that it provides (Fati and Adetimirin, 2015: 74). Similarly, Makun, Danjuma and Dare (2019) note that “usage of OPAC by library users depends largely on the extent to which they are aware of its availability and its impact”. In this section, literature is based on the level of awareness towards OPAC and the sources through which students become aware of it.

2.3.1. Levels of OPAC awareness

The literature review shows that in as much as there are studies that show lack of awareness by students of OPAC, there are other studies that show that students are aware of this tool in different universities across the world. Awareness of OPAC in university libraries depends on marketing strategies used by academic libraries to make

students aware of electronic information resources and services. Gohain and Saikia (2013) identify lack of awareness as one of the major challenges in the usage of OPAC. Similarly, Msagati (2016) notes that despite OPAC being the most effective tool for searching and retrieving information, there is a low level of awareness towards it.

When students are not aware of the OPAC tool, it is unlikely that they can be aware of other library electronic resources and services. This is primarily because OPAC is linked to other resources such as general and subject databases, university Institutional Repositories (IR's), and other electronic resources such as e-journals, e-newspapers, CD-ROM databases, e-magazines, e-books, online databases, e-research reports, virtual library online etc (Ternenge and Kashimana, 2019). This correlation is evident in studies that looked into the awareness and use of electronic resources in academic libraries (Moyo, 2017; Tlakual and Fombad, 2017).

Tlakula and Fombad (2017) revealed that the level of usage of these resources by undergraduate students at the University of Venda is basic and limited to SABINET and EBSCOHOST databases. Furthermore, the study showed that undergraduate students' level of awareness of different electronic resources is low, and that they are also confused about electronic resources and Web-based internet sources (Tlakula and Fombad, 2017). This might be stemming from Fast and Campbell (2004: 144), who discovered two significant paradoxes. First, participants appreciated the organisation of OPAC, but prefer to use the Web in spite of its disorganised state. Secondly, they trust the records catalogued, but persist in their capability to assess the trustworthiness of the various and frequently doubtful documents appearing on the Web.

A study by Togial and Tsigilis (2010) shows that most undergraduate students in the Faculty of Education in Aristotle University of Thessaloniki are aware of internet search engines rather than specialised databases and full-text library resources, let alone, Educational Information Resources Centre (ERIC), which is a fundamental resource in Education Literature. Lohar (2019: 11) also conducted a study on users' attitudes towards library resources and services in first Grade Colleges in Davanagere District. It was

revealed that there is a high awareness of availability of print-based information materials. However, about 60% of respondents are not aware or sure of the existence of e-resources, including OPAC in the library. The study concluded that there is very low awareness of what the library has in terms of e-resources.

On the contrary, there are studies that found that students are aware of OPAC in their libraries though this awareness does not constitute its usage. Ansari and Amita (2008: 118) conducted a study on the awareness of OPACs in five New Delhi libraries on a sample of 100 users. The study revealed that the majority of users are aware of OPAC services provided by their library. Song, Buba and Song (2018) also found that undergraduate students in the Federal University Libraries in Northern Nigeria were aware of OPAC services. Similarly, a study conducted by Nemalili (2015) showed that students at the University of Venda are aware of OPAC because they attend library orientation, which is compulsory.

In another study with similar findings on awareness conducted by Fabumi and Asubiojo (2013) at Obafemi Awolowo University in Nigeria, it was found that although they are aware of OPAC as an information retrieval tool, they did not use it optimally because they lacked information-searching skills. Another study by Ishola and Ojeniyi (2015: 51) observed that most Nigerian students do not make use of the library Catalogue (OPAC and traditional card catalogue) provided in their academic library even though they are aware of its existence as an information-searching and retrieval tool for library materials. Very recently, Kumar (2019: 2) also revealed that both students and staff were aware of OPAC services.

2.3.2. Sources of awareness on OPAC

Studies that found that undergraduate students are aware of OPAC seem to lack information on sources through which students become aware of library resources and services such as OPAC. The information-seeking behaviour theory that serves as a foundation for this study suggests that for people to satisfy their information needs, they either rely on informal or formal sources of information. The theory also suggests that the

bulk of information that people rely on is from informal sources of communication. Other sources from which undergraduate students may become aware of the OPAC tool are their colleagues, their teachers, their friends, relatives etc. For instance, a study by Kumur (2017) at the Krukshetra University, India, found that the majority of respondents were assisted with OPAC searching by their friends.

Formal sources of information include channels such as library training, books, lecturers, librarians, including browsing from the internet. Islam (2010) in Gohain and Saikia (2013) reveals that “The majority of respondents were not aware of the library catalogue and its use. The design and implementation of user education programmes such as library orientation, bibliographic instruction and information literacy to enlighten users about the existence of OPAC and other electronic information resources and services in the library” is suggested in this study.

Chinyere (2014) is also of the opinion that user education is one of the major undertakings of creating awareness to students. User education is a process of activities whereby library users are trained on how to effectively and efficiently use the library and its information resources. The long-standing definition of user education remains that by Fleming (1990, in Chalukya, 2015), who defines it as “ various programmes of instruction, education and exploration provided by libraries to users to enable them to make more effective, efficient and independent use of information sources and services to which these libraries provide access”. Among some of the commonly known user education programmes are library orientation, bibliographic instruction and information literacy. The information literacy instruction or education involves the presentation of basic information-searching skills to students in general, the basics of searching techniques, and most importantly the electronic databases, as well as the OPAC tools.

Azubuike and Azubuike (2016) observe that most students in Nigeria have poor information literacy skills and awareness of electronic information resources resulting from inadequate library training and poor search skills. Adeleke and Emeahara (2016) also found that a low level of usage of electronic information resources is linked to lack of

awareness and lack of search technique skills at the University of Ibidan's undergraduate students. In South Africa, Civilcharran, Maharaj and Hughes (2015) found that most respondents gained their search skills through experience than through formal training.

2.4. PERCEPTIONS OF STUDENTS TOWARDS OPAC

With the new improvements and adoption of new technologies on OPAC, users' attitudes and perceptions towards these new improved information retrieval systems determine its usage. Therefore, the usage of a particular information retrieval system is also determined by attitudes of users towards the system. The usage of OPAC in libraries is therefore not only technical, but also attitudinal (Eiriemiokhale and Oladimetji, 2020). Attitude as a determinant of usage of a particular technological system is also acknowledged in Technology Acceptance Model advanced by Davis (1989). Therefore library users have different perceptions towards the use of OPAC.

In terms of the Information-seeking Behaviour model on which this study is based, by Taylor (1962), attitude towards usage of a particular technological system is driven by the manner in which the system is organised. System organisation, being one of the functionalities of Information-seeking behaviour Models by Taylor (1962), influences perceptions. Subsequent studies that looked at perceptions of users towards OPAC did this through the lens user preferences, ease of use, OPAC as first point of contact, user satisfaction, reliability, and timeliness to establish the perceptions of library users towards OPAC and other electronic information resources. A survey conducted by Vijayakumar and Manasa (2018) on the attitude of OPAC at the Regional Institute of Education, Mysuru found that users preferred going directly to OPAC before proceeding to shelves. They view OPAC as time-saving in that they took less time to find books when using it. Adewoyin and Oso (2018) also found that the highest percentage of university library users preferred OPAC over the card catalogue. The library users also found the catalogue to be saving-time, convenient and more user-friendly. A study by Naik and Nikam (2014) on the use of web OPAC by law students at Karnataka, India, found that most of the students have a positive attitude towards the OPAC search facility. Apagu, Temoge and Hassan (2018) conducted a study on the satisfaction of undergraduate students with the

use of OPAC in university libraries in Gombe state, Nigeria. The study found that the levels of satisfaction of undergraduate students with OPAC is low. However, this is contrary to a study conducted by Shorunke, Eluwoleand Gbenu (2014), which evaluated user satisfaction with OPAC at the Landmark University. The study found that users were highly satisfied with OPAC Services. Islam and Ahmed (2011), in their assessment of students' perceptions of ease of use and satisfaction with library's OPAC at Dhaka University, revealed overwhelming satisfaction with OPAC.

Other studies have looked at the ease of use of OPAC and its usefulness to students to determine their perceptions toward it. A study conducted by Isah, Salma and Salami (2021) investigated the perceived usefulness and ease of use of OPAC by undergraduate students in selected universities in Kwara state, Nigeria. This study revealed that there is a great relationship between ease of use and usefulness of OPAC among students, and concluded that the students have a positive perception of the ease of use and usefulness of OPAC.

2.5. USAGE OF OPAC

Despite students' awareness of OPAC, the question still remains if they make optimal use of this tool. Therefore, the usage of an information resource depends also on the perceptions of a person towards that particular resource. Undergraduate students who use OPAC to search for information are receptive to its purported benefits. Several studies have been conducted to attempt to know the usage of OPAC in different types of libraries in terms of usage frequency, purpose of use, search patterns and search approaches (Mulla and Chandrashekara, 2009; Kumar and Mahajan, 2015). Therefore, the usage of OPAC is discussed under the subheadings related to frequency of usage, search entries for searching via OPAC, as well as different functionalities or search techniques used to search information sources via OPAC. However, the purpose of using OPAC is discussed independently.

2.5.1. Frequency of OPAC usage

Frequency of OPAC usage designates the worth and amount of significance attached to the usage of this information retrieval tool by library users (Rachael and Stanley, 2019). By implication, where there is an improved usage frequency rate, it would be understood that library users are positive towards OPAC use and usage. Therefore, by measuring the frequency in which students in academic libraries use OPAC, the investigators seek to establish the extent to which it serves a critical role in assisting users in properly locating library materials. However, there is some proof that students' use of OPAC is declining (Danskin, 2007), which warrants this investigation. Rachael and Stanley (2019: 7) reckons that "the question of how frequent patrons use OPAC cuts across so many dimensions. This makes it important to investigate the rate at which users use OPAC to locate their required documents, that is, to assist the library management to find out if the purpose of the OPAC is been achieved and they on their part may be able to proffer solutions to problems arising from their investigation".

Mulla and Chandrashekara (2009) conducted a study on the effective use of online public access catalogue in libraries of engineering colleges in Karnataka (India). The results "show that 699 (64.01%) of respondents were using OPAC daily, 212 (19.41%) used it once in two days, 198 (18.13%) used it once a week and 152 (13.92%) used it twice a week. Similarly, 40 (3.66%) respondents used it once in two weeks, and 37 (3.39%) of them used it occasionally. Nearly 55 % of the members used OPAC in the library almost every day".

Moreover, Thanuskodi (2012) conducted a similar questionnaire-based survey on the use of OPAC for Annamalai University Library. The findings points out that "only 31.35% of respondents frequently used OPAC, 25.35% used it occasionally, 20.89% used it rarely and 22.38% of respondents never used OPAC". The results of the study by Tella (2019) also "revealed that the majority of undergraduate students in selected universities in Nigeria used the OPAC on a weekly basis while the majority of respondents (57.5%) spent fewer hours (between 0-3) using the OPAC. The places of accessing the OPAC identified include the school library, respondents' homes, cyber cafés and lecture rooms.

In these studies, he major uses of the OPAC by the undergraduate students include: to locate books and other materials; and to find non-print materials."

A study conducted by Rachael and Stanley (2019: 12) examined the use of OPAC in selected university libraries in South-South Nigeria. It was found that 61 respondents affirmed that they always use OPAC and 89 respondents claimed that they use it most of the time, 94 respondents claimed that they have never used their library OPAC, 112 respondents sometimes use OPAC and the majority of 322 respondents rarely use it. Based on these findings, it is clear that students' use of OPAC in university libraries in South-South Nigeria is low. Kumar and Singh (2019) conducted a study based on users' survey of OPAC in different university libraries of Haryana (India). The overall results show that 30% of users used the OPAC system weekly. Okolo (2019) reports that the frequency of use by undergraduate students in selected universities in South-South Nigeria "shows that a large chunk of respondents rarely and never uses OPAC for searching for information resources in the library while a few respondents sometimes use OPAC to source materials in the library".

2.5.2. Search entries and functionalities used

The usage of OPAC is not only about the frequency at which the system is used, but also about the entries or access points which students use when searching for information from the information retrieval system. Whilst it is important to study the frequency at which OPAC is used by library users to locate information, it is equally important to study the functionalities that are mostly used when searching information. This helps in determining whether OPAC is effectively used or not, as well to improve the functionalities of the tool to meet the current generation of library users' information needs. "Access points are the means through which library users gain access to the materials that are available in the library and they are interface of information retrieval which assist information searchers or inquirers to access available resources in the library" (Atanda and Ugwulebo, 2017:115 -116). Access points also refer to bibliographic details of information sources in the library.

Therefore, Elgundi and Schmidt (2012) state that the initial OPAC resembles a structure of a card catalogue which only had these access points and bibliographic information such as author and title, access points which required the exact match to find the required information sources. Subject based searchers were dependent on Library of Congress Subject Headings. Later, Boolean and keyword searching brought some improvements to OPAC functionalities (Fresnido and Barsaga, 2019).

Wells (in Hjørland and Gnoli, 2020) distinguishes between first and second generation OPACs. First generation OPACs, also referred to as pre-indexed or pre-coordinated catalogues, are derived from traditional card and computerised catalogues (Elgundi and Schmidt, 2012). They are composed of limited number of access or search key points such as author, title, class number and subject headings only. Therefore, searching the materials by the author, title or subject, which is known to the users, is regarded as the leading search entries in first generation OPAC search menus (Mi and Weng, 2008). Voster (2012) also recognises that "OPAC studies have found a preference for simple keyword searching over subject and alphabetical title and author searches".

Unlike first generation OPACs, "second generation catalogues which have their origin from commercial bibliographic information retrieval systems are operated by the use of some kind of command language, which is simplified for use by inexperienced users" (Hussain and Raza, 2002: 206). Such OPACs provide the user with a keyword searching access point and additional functionalities such as natural language entry, spell-checking, relevance ranked output and browsing (Ukbepor, 2012; Wu and Young, 2017). Searches can be conducted through phrase searching on pre-coordinated subject headings and key word searches on an indexed data in the bibliographic record (Hussein and Raza, 2002: 206). While the first generation OPAC is more characterised by bibliographic searches, second generation catalogues are more characterised by web searches. Nikam (2013) conducted a study whose purpose was to provide an overview of two law university libraries in the Karnataka State of Southern India. It was discovered that 62(50%) respondents were guided by library OPAC/Web OPAC against 51(41.8%) who stated that their use of OPAC/Web OPAC was not guided by library OPAC/Web OPAC.

A new generation of OPAC remains a tool that library users search and locate information sources that they require. According to Adomi (2009, in Rachael and Stanely, 2019), the library catalogue contains information sources that the library holds such as but not limited to indexes and abstracts, periodicals, bibliographies, gazetteers, directories, textbooks, yearbooks, electronic books and journals, dictionaries, encyclopedias, biographies and manuals, manuscripts, prints, photographs and maps. All of these sources can be found on OPAC and can be searched through entries such as author, title, subject, keyword and other entries. The author or title search is only used when the author and the title of the book are known, and are only used when one wants to confirm the availability of an information source and its location in the library (Machet, 2012: 141). However, when one wants to access information sources dealing with a particular subject, one must conduct a subject search through OPAC. If the library has books on a particular subject, the OPAC system is be able to identify them. Nemalili (2015: 16) outlines the current simple and advanced OPAC search entries at the University of Venda library as title, author, subject, keyword, course, lecturer, call number, journal title and ISBN/ISSN. The question remains about the search entry which students use more frequently.

A study by Kumur (2012) reveals that both simple search and advanced search approaches were adopted at Punjabi University library in India. In the study, all respondents (100%) opted for the use of the simple search approach, whereas one-third opted to use the advanced search. “Most of the users (90.6%) take up the simple search regularly. On the other hand, 16.4% access the advanced search regularly”. Therefore, most of the users do not need intensive skills to perform a straightforward search. For example, known search entries in cases where they know about the author or title of the book. A study by Nwobu, Oyewole and Apotiade (2016) at the Federal College of Education Lagos, in Nigeria indicates that out of 209 undergraduate students, 125 (616%) search books from the OPAC system through the title search option, while the second most used access point was through the author’s name with 114 (56,1%) respondents.

Eserada, Okolo and Ideh (2019) found that the major access points through which students in selected universities in Niger Delta region access are through: “Author, Title and Subject access points, Keyword search, Simple search, basic search, Boolean search method and phrase searching”. These access points ranked high in the search methods applied by respondents in searching through OPACs. Civilcharran, Maharaj and Hughes (2015) looked into the Web search tactics and information retrieval strategies used by postgraduate students at the University of KwaZulu-Natal, Pietermaritzburg campus. According to the study, most of the participants preferred to make use of low Web tactics despite having reported themselves as intermediate and expert users.

OPAC has also revolutionised access to bibliographic information through search functionalities such as keyword searching, Boolean searching, truncation, proximity searching, and item identity number searching, which were not possible in the traditional library catalogue. The theoretical model on which this study is based shows that among some of the variables that have an influence on the interaction between the inquirer and the information system being inquired is the system organisation (Taylor, 1968). Therefore, when the inquirer searchers for information sources through an information retrieval system such as the library catalogue (OPAC), he or she may have a difficulty in knowing what subject terms to key into the OPAC system (Machet, 2012). As a starting point, the terms used to describe the information need of the inquirer may be used. If the information sources are not retrieved with those terms, alternative terms that one may think of are used in the retrieval of relevant sources. Along these lines, Machet (2012: 31) notes that the current trend in OPAC is to include an option to conduct a keyword search, which allows the information system to search the catalogue using different subject headings or terms.

Othman and Halim (2004: 202) conducted a study that aimed to identify the retrieval functionalities for online databases; difficulties faced by users and retrieval functionalities expected by users. The results identified common retrieval functionalities which included Boolean operators, truncation and proximity. In all databases, Boolean operators consist of parts such as AND narrows the scope of a search, OR broadens a search, while NOT

eliminates terms from a search. Boolean operators are grouped with proximity operators (NEAR and WITHIN). Dinet, Favart, and Passerault (2004) conducted a study examining the use of Boolean operators by French university students. The results obtained confirmed that French university students did not frequently use Boolean operators. Song, Buba and Song (2018) found that undergraduate students utilised OPAC services to know the location of a document and its availability in the library.

Other techniques used to search information on OPAC are truncation marks, wildcards, and proximity and field search. Truncation marks broaden users' search by allowing them to use the symbol of an asterisk* to replace the last few letters of the word. Within a search, proximity is a search technique for finding two words that are next to, near, or within a certain distance of each other. Proximity operator consists of letters N or W, which are placed between the word that is searched. This search provides results that are more relevant and satisfactory (Mehrad and Rahimi, 2012).

Shetty, Ranith and Pai (2016) acknowledge that search operators and techniques such as Boolean operators, truncation marks, wildcard marks, citation, and proximity and field search can make information-searching easier if appropriately used by information users. Ferdowa and Ahmed (2015) are also of the view that the application of these techniques can result in improved search performance by students. However, lack of skills in applying these techniques affect the effective retrieval of information sources not only from OPAC, but also from electronic information resources as a whole. Lwehabura (2018) conducted a study on information literacy skills among first year postgraduate students at Sokoine University of Agriculture Tanzania. The study found that a reasonable number of students demonstrated a significant deficiency in their skills for searching information and the application of various search techniques such as Boolean operators, use of truncation, proximity, synonym and concept maps. Similarly, a study conducted by Ferdow and Ahmad (2015) also found that undergraduate students at Dhaka University also lack information search skills.

2.6. PURPOSE FOR USING OPAC

There are several distinct functions of a library's OPAC. According to Gohain and Saikai (2013), the purpose of OPAC includes,

- "location of document on shelves,
- to know whether a particular book is on the shelves or not,
- to know what a library have on a given author, title and subject,
- to know about a document without visiting the library ease to search different categories of documents such as books, thesis, back vol., CD by changing the types of documents".

Therefore, OPAC is a bibliographic database from which users can search information from the library. According to Mulla and Chandrashekara (2009), OPAC as an information retrieval tool is a transformation in higher education libraries by way of aiding and expediting users "search for library materials and to determine the availability of such materials in the library at a given point in time". OPAC also provides useful links to non-bibliographical data, and acts as a library-marketing item, promoting the existence of libraries and the services provided (Wells, 2007). Users can also use it to check their library membership status and to renew materials that they have borrowed. New books that have been acquired by the library are also displayed on OPAC for users. A study on the usage of OPAC by undergraduate students at Sokoine University of Agriculture found that respondents used OPAC for several purposes, including:

- knowing the library materials available in the collection for a short time,
- locating library materials, and
- knowing the status of books, that is, if they are available or on loan (Katabalwa and Mnzava, 2020).

OPAC is an important instrument through which students are able to gain wider and quicker remoteness access to academic library holdings. Among some of the most important links on OPAC at the University of Venda are library databases, training links, libguides, services and facilities, reader information and staff information. Kumar, Singh,

Singh and Rana (2018) provide detailed analysis of literature that investigated the purpose of using OPAC by students in different universities across the world. For most of the students, OPAC is a search tool for retrieving documents, searching the library collection, and for accessing or locating reading or study materials (Kumar et al, 2018).

Uplaonkar (2020: 90) conducted a study on “Usage and Awareness of OPAC by Faculty of University Library, University of Agricultural Sciences, Dharwad, India.” The study indicated that there are number of purposes behind the use of OPAC. The findings indicate that 72.88% of participants use OPAC for checking the availability of books or resources in the library, followed by 54.24 % who used it to check its own issue or return history, and 30.51%, who used OPAC for checking new arrival items. However, 15.25% of respondents use it to reserves a book when others have borrowed it. Sridhar (2004: 180) conducted a study on OPAC vs card catalogue: a comparative study of user behavior in, Bangalore, India. During the survey, users were interviewed and observed for the purposes for which OPAC was utilised. The software allows users to search books and other databases, as well as browse new library arrivals and query the library's circulation system to learn about borrowed and reserved items by member and document. The data relating to purposes of using OPAC indicates that “it is clear that a sizable 65.5 per cent of use of OPAC is to search various databases. Querying the system for circulation information is also a respectable 32.9 per cent. However, searching journals database (both current issues and bound journals) and browsing new arrivals of library are negligible and they are respectively 4.1 per cent and 1.6 per cent”.

The goal of this work was to find out how undergraduates in university libraries in Nigeria use the library’s OPAC to effect change in research and the country, as well as to determine the extent to which undergraduates in Nigeria use OPAC. A survey of three university libraries in Enugu, Lagos and Imo was conducted with the help of a questionnaire, an observation checklist, and a Focus Group Discussion (FGD). Undergraduate students from these three universities used OPAC to check the availability of books in the library and the number of copies in library holdings. It also shows that OPAC was only employed for a few specific purposes (Obim and Onyebuchi, 2019).

2.7. CHALLENGES ENCOUNTERED BY STUDENTS WHEN USING OPAC

In spite of the beneficial role of OPAC in information-seeking activities to students, there are a number of problems and challenges that students face when using it (Yeboah, 2018). Innumerable factors are likely to influence information-seeking behaviour of library students towards OPAC. An insight into the environment to which the library user is attached, his or skills in identifying, locating searching and retrieving the needed information via OPAC, as well as the sources preferred for acquiring information, and barriers to information are essential for understanding the challenges and problems encountered using the system. Most of the challenges are highlighted in the information-seeking behaviour model, which guides this study, starting from accessibility to skills of library users in searching information from an information system.

Yeboah (2018) reveals that “infrastructural issues and lack of relevant skills are deemed to be some of the challenges preventing an optimum use of the OPAC facility”. Howlader and Islam (2019) at Dhaka University, Bangladesh, conducted a study on undergraduate students' information-seeking behaviour. The challenges discovered are lack of ICT knowledge, slow internet speed, lack of knowledge on how to use OPAC, inability to access electronic resources due to a lack of expertise, lack of awareness of library resources and lack of knowledge to formulate a search query. Ekenna and Iyabo (2013) note that low undergraduate students' utilisation of resources is associated with lack of information retrieval skills. Kumar and Vohra (2011) “discovers lack of basic skills among users was found to be the major reason for not utilising functionalities of OPAC optimally”. According to the study, the university library should organise excellent training programmes to improve users' abilities and knowledge.

The first is OPAC’s physical operation as some students do not fully understand its operation, and therefore lack control over what they are trying to do. A descriptive survey research design that was adopted by Ishola and Ojeniyi (2015: 52) reveals that the following are some of the key issues that students confront while trying to use the library catalogue:

- “inability to locate materials on the shelves indicated in the catalogue as being available 301(75%);
- power outage causes frustration when accessing OPAC (55%);
- poor understanding of meaning of information on library catalogue (36%);
- poor computer skills hindering navigation when searching OPAC (67%); and
- difficulty in getting information from card catalogue because of poor retrieval skills (70%).”

This is related to what is referred to as the state of readiness of the inquirer in the information-seeking behaviour model that guides this study, which has something to do with his or her level of education, experience, skills and familiarity in searching the information retrieval system. Wilson and Given (2014) wrote:

> Although library catalogues were created with professional searchers in mind, they nevertheless demand sophisticated skills and knowledge, such as conceptual understanding of information retrieval, semantic knowledge of search implementation, and technical knowledge of skills and grammar. Unfortunately, some students may be unaware of these crucial functionalities.

Thanuskodi (2012: 72) adopted a questionnaire-based survey on the use of OPAC where respondents were asked to give reasons “for never using OPAC”. The findings “show that 95 % of 60 respondents expressed lack of knowledge, 70 % expressed confusing to use, 51.66% expressed no output, 45 % expressed lack of assistance from library staff, 36.66 % expressed slow speed and around one fourth expressed lack of computer systems”. Retief and Terblanche (2006) examined the quality of the University of South Africa’s library catalogue (OASIS). The three types of complaints about OASIS catalogue are identified thus: “that OASIS is slow; that the number of computers to access the catalogue is insufficient; and that information resources should be available for use according to OASIS cannot be found on the shelf by clients and library staff alike” (Retief and Terblanche, 2006: 88).

Patrons can use the library's bibliographic database to look for specific information online. Typical library users lack the necessary knowledge and abilities to conduct efficient

subject searches. Kumar and Vohra (2011) examined OPAC usage by students and faculty academics of Panjab University Library, Chandigarh. The results of the study "discovered that a significant number of users search for information regarding the library materials through OPAC despite encountering problems. Lack of basic skills among users was found to be the major reason for not utilising functionalities of OPAC in full". According to the study report, the university library should organise excellence-training programmes to improve users' abilities and knowledge. Kumur (2012) revealed that at Punjabi university library in India, all respondents were aware of the simple search strategy, which was used in both simple and complex searches. It was clear from the study that the users lacked fundamental OPAC searching skills. As a result, they required the support of staff in the library near OPAC terminals in order to make the most of this service (Thanuskodi, 2012: 73).

Most studies have identified major problems when conducting subject searches in the OPAC system. Gohain and Saikia (2013: 7) researched about "use and users satisfaction on OPAC services among B. Tech. students of school of engineering in Tezpur University". The study revealed that respondents find it difficult to use OPAC due to a lack of skills. They stated that they were unaware of OPAC and that they had difficulty using it due to a lack of proper guidance. Some respondents cited a lack of a sufficient number of OPAC terminals and other sections as a barrier to using OPAC. These findings show lack of skills to utilise OPAC, lack of awareness about OPAC, and lack of suitable supervision as key issues encountered when utilising OPAC. Arshad and Shafique (2014: 294) determined the most preferred catalogue format – card catalogue or online public access catalogue (OPAC) for searching library materials in oriental languages, and adopted descriptive and inferential statistics for reaching conclusions. The study proposed that library staff should provide sufficient instruction in using OPAC. They also emphasised the importance of reliable and error-free bibliographic information in records. Mulla and Chandrashekara (2009) conducted a study on the effective use of online public access catalogue at the libraries of engineering colleges in Karnataka (India). It was revealed that "some of the major constraints for the use of OPAC at the libraries of engineering colleges were found to be lack of awareness of between user communities;

OPAC is not user friendly software; Information Technology (IT) competency between user communities was lack luster. Thus, the study clearly highlighted the need for an education programme module for users to promote the effective usage of OPAC".

Information technology application has transformed information management, hence libraries have adopted the OPAC system. Babayi, Abba and Aliyu (2019: 14) conducted a study which surveyed the attitude of students towards computerised library services at Ibrahim Babangida Library (IBL), Modibbo Adama University of Technology, (MAUTech) Yola, Adamawa State, Nigeria. The study adopted descriptive survey as the research design of the study. The main findings of the survey revealed that the majority of participants support the automation of all library services. It suggested that they have a positive opinion of library services. According to the findings, students have a positive attitude toward digital library services.

2.8. CHAPTER SUMMARY

The purpose of this chapter was to review relevant literature related to the study. The model used in the study was Taylor's Information-seeking behaviour. The model is interested in how individuals search for and use information. Therefore, OPAC as a tool is used to assist users locate library information resources. Literature review about students' awareness and usage of OPAC functionalities amongst undergraduate students was discussed. It was found that in as much as there are students who are aware of OPAC, there are also some studies that show that some students are not aware, especially its capabilities. Most of the studies that looked at the usage of OPAC report that most students use basic OPAC functionalities or search sentries such as author and title, mostly to check the availability of books in the library. Other functionalities that are more advanced are not used. Furthermore, an overview of the frequency of using OPAC, challenges encountered by students when using OPAC and students' attitude towards OPAC were also provided. The most basic challenge to students in terms of the use of OPAC is related to lack of skills in search of the OPAC information retrieval tool.

Chapter 3 presents the research methodology used for the purpose of collecting data in this study.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. INTRODUCTION

Research is described as a systematic inquiry where data is collected, analysed and interpreted to solve a research problem (Leedy and Ormrod, 2014:2). Research methodology refers to different techniques and procedures by which research is developed and conducted. According Leedy and Ormrod (2014), research methodology is a general strategy that guides the researcher in carrying out the research project. This is done through identifying and adopting research methods and techniques to be used in collecting data for a particular study. Creswell and Creswell (2018) outline the main research methods as quantitative, qualitative and mixed methods approaches. This chapter describes the research methodology adopted in the study. Research methodologies are built around the research paradigm, research approach, research design and data collection methods used by the researcher. Population and sampling, data analysis, quality criteria and ethical consideration are also explained in detail, as well as the reasons behind the adoption of certain research methods and techniques over others.

3.2. RESEARCH PARADIGMS

The American philosopher Thomas Kuhn in his famous book titled “The Structure of Scientific Revolutions,” published in1962, was the first to use the concept “paradigm”. This concept is used in this study to mean a philosophical way of thinking (Orman, 2016). The term “paradigm” is also defined by Bogdan and Biklen (1998 in Mackenzie and Knipe, 2006: 3) as “a loose collection of logically related assumptions, concepts, or propositions that guide thinking and research”. Rehman and Alharthi (2016: 51) describe a research paradigm as “a model, beliefs and assumptions which researchers follow to understand the nature of reality and what exist in the social world (ontology), how researchers understand the nature of knowledge with what they can know, how we can know it and how we can know what exist (epistemology) and development of strategies for evaluating knowledge (methodology), collection and analysis of data (methods).”

Research literature shows that there are three popular research paradigms known as interpretivism, positivism and post positivism or pragmatism. The interpretivism paradigm is a humanistic paradigm arrived in educational research during the late 1970s, and1970s and has its historical roots in anthropology (Taylor and Medina, 2011). Interpretivism is concerned with the truth and knowledge that are subjective from individual experiences and understandings (Ryan, 2018: 8). Qualitative research approach stems primarily from the interpretivist view of the world, understanding the social phenomenon of how things work and how people interpret and interact in their social environments (Howson, 2021). The interpretivist paradigm and qualitative research methods would empower researchers to acquire further understanding by looking for encounters and impressions of a specific social setting (Alharahsheh and Pius, 2020: 43). Pickard (2013) adds that interpretivists believe in numerous, manufactured realities that cannot exist outside of the social context in which they are created. For every behaviour, there is a reason behind or factors that influence that behaviour.

The French philosopher Auguste Comte was the first to invent the term “positivism” in 1822. This research paradigm postulates that natural laws can be used to explain social reality, and to dictate and manage society's conduct (Waliaula, 2019). Positivism focuses on the philosophical view of realism where reality exists independently of human interference, therefore data collection and supporting evidence can be used to understand human action (Rehman and Alharthi, 2016: 53). Pickard (2013) provides an example that water will always remain water, irrespective where or not someone is swimming in it or not. Quantitative research approach stems primarily from the positivist view of world.

Post-positivism is defined as a research tradition which occupies space between positivism and the constructivism theories of research (Maree, 2016). Its central premise is that “all knowledge is fallible, but not equally fallible” and that reality exists, but can never be perfectly understood. Campbell (2020) states that post-positivism or critical theory was built upon the ideas of theorists who defined it as a social theory that teaches

individuals and society to take action that will free them from the situations that bind or oppress them. According to the principle of this view, cognition must respond to new difficulties and new opportunities for freedom that occurs as a result of changing historical conditions (Bronner, 2011). Mostly qualitative data is generated and the researcher can also use quantitative data. The mixed methods research approach complements post-positivism or critical theory. Thompson (2017) emphasises that critical theory should be used by a new generation of people who want to change the world, stating that it is important to keep immanent social criticisms alive.

Out of the research paradigms discussed above, this study adopted the positivist research paradigm. This research paradigm was adopted because it is used to measure things that one can see. This kind of approach is particularly useful especially in the social sciences, where large sample sizes are used, to test hypotheses and theories (Taylor and Medina, 2011). The positivist worldview would empower the researcher to have more factual dependence and speculation prompting advancement of all-inclusive laws and discoveries (Alharahsheh and Pius, 2020: 43).

3.3. RESEARCH APPROACH

Three research approaches are found in research literature. They are quantitative, qualitative and mixed method research approaches. While the quantitative research approach is associated with the positivist research paradigm, the qualitative research approach is associated with the interpretivist paradigm, and mixed-methods research approach with post-positivism paradigm. The three research approaches are discussed as follows:

3.3.1. Quantitative research approach

Quantitative research is a process of collecting and analysing data into figures and numbers to study occurrence, with the thought of summing up on large population (Sheard, 2018:430). Apuke (2017:46) establishes that quantitative research methodologies study the human behaviour in its natural setting, and collects, manages,

evaluates and quantifies variables to get results. This is done by applying strategies to respond to questions like who, how much, what, where, when, the number of, and the extent to which. It is also portrayed as strategies for clarifying an issue through the social affair information in a numerical structure. Hence, quantitative research includes measurement and accepts that phenomena under investigation can be measured. Commonly used quantitative research designs are descriptive, correlational and experimental.

3.3.2. Qualitative research approach

Aspers and Corte (2019) define the qualitative research approach as a process of studying human action in a natural setting. In the qualitative research approach, enriched understanding for established researchers is achieved by forming new critical distinctions as a result of getting closer to the phenomenon being examined. Kalra, Pathak and Jena (2013) state that qualitative research assists researchers to understand the reasons behind individual experiences, beliefs and attitudes by collecting and analysing non-numerical, but narrative data. Bhandari (2020) identifies the common research designs in qualitative research to include action research, grounded theory, phenomenological research, narrative research and ethnography. Furthermore, Bhandari (2020) elaborated that qualitative research assists researchers to understand how individuals experience the world as the researcher collects and analyses non-numerical data. Data can be collected through interviews, observations, surveys and focus groups, and involves a systematic analysis through the coding into themes (Quick and Hall, 2015: 132). Silverman (2020: 3) found that the vast majority of journal publications presuppose agreement on the qualitative research goals listed below:

- The ability to comprehend the human condition.
- Interviews and focus groups should be treated as direct access to the contents of people's minds.
- To accomplish this, the researcher's sympathetic talents should be highlighted.

3.3.3. Mixed methods research approach

The mixed method embracing both quantitative and qualitative research approach is used by pragmatists who believe that research questions drive the choice of the research methodology (Smith, 2021). Harper (2019) describes the mixed method research which, in some cases is called multi-methodology, as integration of the dominant research approaches in human and social sciences, namely; quantitative and qualitative research approaches. The combined approaches assist the researcher to better understand the research problem than an individual approach could offer. The numerous sorts of design categories, such as explanatory, exploratory, parallel, and layered designs are ideal for answering research issues that neither quantitative nor qualitative approaches could solve alone (Shorten and Smith, 2017). The mixed-method research approach is also used for the purpose of triangulation. Harper (2019) states that triangulation is the methodological approach to mixed method which is known for cross checking results by using both research approaches to produce broadly similar results. Mixed methods collect and analyse quantitative and qualitative data to show the strengths of each research approach and to reduce the weaknesses of the study (Creswell and Creswell, 2018).

The positivist researcher uses the quantitative research approach to formulate theories and to answer research questions, to collect data via surveys consisting of close-ended questionnaire. The positivist research often generates numerical data that is subjected to descriptive analysis (Rehman and Alharthi, 2016: 54). The research study adopted the quantitative research approach. Frey (2018) notes that the quantitative research approach emphasises figures and numbers in data collection and analysis. The use of numerical data eases the time and determination that the researcher would have spent in arriving at the results of research.

3.4. RESEARCH DESIGN

McMillan and Schumacher (2014:28) define a research design as a procedure for conducting the study, with a purpose of specifying an action plan that steers the way in which data are collected and analysed. A research design is a process for collecting, analysing and interpreting data that a researcher employs (Stangor, 2014: 14). Each research approach has its own research designs. Since this study adopted the quantitative research approach, only research designs that are used in this type of research approach are discussed.

3.4.1. Descriptive research design

Descriptive research design is defined as a type of quantitative research, which accurately describes population, existing phenomena and situations. Descriptive research can be conducted through observations, which allow the researcher to identify numerous details regarding the research problem; case studies, which allow the researcher to study the research problem in depth; and survey research, which allows researchers to create controllable questions to be asked and answered by participants (Purdy and Popan, 2020).

3.4.2. Correlational research design

McMillan and Schumacher (2014: 30) define correlation as a statistical test of establishing patterns between two variables. Correlational research is a technique by which the researcher studies how two or more variables that may be statistics, behaviours or other measurable or observable factors are related utilising correlational methods through surveys or observations (Dziak, 2020). Correlational studies require a conceptual framework describing why the variables are related to one another (Curtis, Comiskey and Dempsey, 2016). Correlational research results may be converted into a mathematical figure named correlational coefficient to determine how strong the relationship between variables and the number ranges between +1 and -1, where a positive +1 correlation means that the variables seem to be closely related (Dziak, 2020). Curtis, Comiskey and Dempsey (2016) found that correlational research might be used to conclude occurrences and relationships between variables.

3.4.3. Experimental research design

In experimental research design, the researcher straightforwardly controls chosen conditions or qualities of the environment, and notices the impacts these changes have on different highlights of the current issue (Stoica, 2021). The factors controlled in an analysis are alluded to as independent. However, they are generally constrained by the researcher because they thus may control, or cause changes in other dependent factors. Mitchell (2015) states that an experimental research design is concerned with changing factors to create research with strong causal validity. Experimental research uses scientific methods to determine the cause-and-effect link between a set of variables in a study. There are a number of types of experimental research designs, namely:

- true experiment which the researcher uses for maximising internal validity,
- Repeated measures which the researcher uses in a situation where all treatments are administered to all subjects,
- quasi-experiment relies on assigning subjects randomly to treatments,
- time series design includes repeated assessment of a group, with the trial treatment stimulated between two of the measures; and lastly
- the deceptive appearances: the Ex Post Facto design which states that no variables are manipulated, only existing groups are compared (Ross and Morrison, 2013: 1022).

3.4.4. Choice of research design

The study adopted the descriptive survey research design. “The goal of descriptive survey research design is to describe a phenomenon and its characteristics” (Nassaji, 2015: 129), and to collect data from a sample of people about that phenomenon (McMillan and Schumacher, 2014: 30). Descriptive survey research designs are the most widely used methods which explain a situation and search for trends and patterns in a sample population group that can be applied to the study's target population (Pickard, 2013: 112). In this study, a descriptive survey research was used to examine OPAC functionalities or and the extent of awareness and usage by undergraduate students at the University of Venda. According to Du Plooy-Cilliers, Davis and Bezuidenhout (2014: 150-152) mail,

questionnaires, personal interviews, group administration and telephone are all examples of survey types, which are discussed under data collection methods.

3.5. POPULATION AND SAMPLING

The population of the study defines the boundaries and conditions for inclusion of subjects. Research population are people who satisfy the study's eligibility requirements. Members of the population of the study have common characteristics that influence the researcher to include in a particular study. In most cases, if membership of the population to be studied is too large, sampling methods are applied to reduce it to meaningful and manageable elements.

3.5.1. Population

Tarsi and Tuff (2012) define population as a group of people of similar species living and interbreeding inside a given region. Punch (2012:155) also keeps in mind that in research, the population is defined as the target group which is typically vast, about whom we seek to gain and develop knowledge or obtain information. The population selected in this study are undergraduate students at UNIVEN. The University of Venda has eight schools, namely, Schools of Agriculture, Education, Environmental Sciences, Health Sciences, Law, Management Sciences, Mathematical and Natural Sciences, and Human and Social Sciences. The study was conducted with students who are registered for undergraduate degrees in all faculties and schools at the university. An undergraduate student in this study is any student who is enrolled for a certificate, diploma or bachelor’s degree, who is in their first, second, third and fourth year level of study.

3.5.2. Sampling

Since the population of undergraduate students was too large for the researcher to handle, a sampling method was necessary. Turner (2020: 8) defines “sampling as the process of selecting subset of the population that the researcher is of interest called sample”. Sampling is a set of strategies that are utilised to choose a sample size from a

bigger population so that research should be conducted with a workable sample and extrapolated to the bigger population (Wienclaw, 2021).

Acharya, Prakash, Saxena and Nigam (2013) state that sampling methods are generally classified into probability and non-probability sampling. Showkat and Parveen (2017) state that in probability sampling, each sample in the population has an equal chance of being selected. Probability sampling methods are stratified, systematic and simple random sampling, cluster sampling and multi state systematic random sampling. Non-probability sampling involves the nonrandom selection of elements in the sample for which the inclusion probabilities are unknown or known to be zero (Wiśniowski et al., 2020). Non-probability is a deviation from probability sampling as it is defined as a sampling technique in which researchers control the selection of the sample. Usually, researchers use judgemental rather than non-random selection (Vehovar, Toepoel and Steinmetz, 2016). Non-probability methods include convenience sampling, purposive sampling, quota sampling and snowball sampling.

This research's intention was to first adopt a stratified sampling method in which the total number of students in each targeted school for the 2019 academic year was to be established first (Maree, 2016). In each stratum (targeted school), a proportional representation of elements was to be allocated using the systematic random sampling method. This entails that the number of participants in each stratum was to be allocated according to the population size, whereby students would have been selected or picked on the basis of interval known as the kth or eleventh element (Maree, 2016: 195).

However, the researcher struggled to secure the number of registered undergraduate students in every school from the gatekeepers. This research used a systematic random sampling method in which the total number of all undergraduate students was established from the University of Venda Annual Report (2019: 47) as 5 941. The number of participants was arrived at on the basis on an interval, known as the kth or eleventh

element (Maree, 2016: 195), which resulted in a sample frame of 449 as the targeted number of participants. However, the google form questionnaire that was distributed to the students via a link was not locked or set up to exclude those who submitted their responses after the targeted population has been reached. Therefore, the number of participants was 563 instead of 449.. This entails the targeted population was exceeded by 114 particiaptns. To fix this shortcoming, the candidate has to change the number of undergraduate students at the University of Venda as 6 193. This enabled the candidate to have the number of respondents as 563 using the Kth or 11th element interval from the total population. The formula used is thus:

Students: (6 193) ÷ Interval (11) = *(Target population) 563*

3.6. DATA COLLECTION

Data collection involves methods that are used in a study to collect data from participants. Each research approach or methodology has its own data collection methods, although some methods can be used in both quantitative and qualitative research approaches. The most common data collection method in a quantitative study is the questionnaire, which is defined as a communication tool between researchers and participants (Brace, 2018: 6). According to Leedy and Ormrod (2014: 191), a questionnaire is a research tool used to collect data from a large number of participants consisting of open and closed ended questions. A questionnaire is the most popular form of surveying the opinions, behaviours, attitudes and perceptions of individuals that save costs and time (Stangor, 2014: 110). Therefore, this study adopted a questionnaire as the data collection method. A questionnaire was more advantageous over other data collection methods because it can be sent to a large number of individuals simultaneously, and is likely to involve less expensive procedures (Debois, 2019).

Questionnaires comprised two types of questions, namely, open-ended and closed-ended questions. Researchers use open-ended questions to understand participants' opinions by allowing them to provide their own answers, while closed-ended questions

are used by researchers to quickly collect data by providing possible answers to participants such as multiple-choice formats, yes or no (Hahn, 2020). The questionnaire consisted of closed-ended questions to address quantitative aspects of the study. Closed-ended questions permit respondents to choose only from the provided answers (Farrel, 2016). Participants were given options to choose from, and then asked to provide reasons for their choices. Closed-ended questions addressed measurement of participants' level of awareness of OPAC.

The questionnaire was divided into four sections in accordance with the objectives of the study. Section A addressed biographical details of participants such as age, gender, level of study, etc. These were included because they may serve as variables that determine the usage or non-usage of OPAC. Section B addressed the extent of awareness of OPAC, while section C addressed the frequency of OPAC usage. Section D looked at the purposes for using OPAC, and Section E looked at challenges encountered in using OPAC. The questionnaire is attached as appendix one.

Because of Covid 19 pandemic protocols, the questionnaire could not be distributed physically to students to complete. The questionnaire was therefore converted to a google form questionnaire. The link to this questionnaire was posted to the students to complete the google form questionnaire. The distribution of the google form questionnaire was through the official university student email address to active students. The response rate of the questionnaire was very slow at the beginning and the researcher had to patiently request re-distribution of the google form questionnaire for about four times.

3.7. DATA ANALYSIS

Creswell and Creswell (2018: 156) define data analysis as a process of evaluating and interpreting collected data to make meaning. In this study, quantitative data was analysed using Microsoft Excel Spreadsheet and Statistical Package for Social Sciences (SPSS). The data was presented through pie charts and bar graphs.

3.8. QUALITY CRITERIA

Quality criteria test and measure quality in a study by allowing quantitative researchers to use the criteria of reliability, validity, and generalisability for evaluation (Mandal, 2018). This study adopted quantitative research designs. Before the major study was undertaken, reliability and validity of the instrument used to collect data was confirmed by conducting a pilot study in which the questionnaire was distributed to some fewer participants to complete. This was done to aid the researcher in identifying potential issues and gaps that could affect the quality and validity of findings (Pickard, 2013). The pilot study of this research project took place with few students at the University of Venda, and feedback was used to improve the data collection instruments and to alleviate potential problems. In this study, participants found the questionnaire easy to understand and to populate. The positive feedback assisted as the final questionnaire was distributed to undergraduate students.

Reliability deals with the stability of research findings using the same research tool more than once. Therefore, the researcher ensured that the research instrument used in this study was used more than once, and if the results are found to be similar, then reliability of the research instrument will be accepted (Pickard, 2013: 23).

Validity refers to the level at which the results of the research can be generalised to a broader context. An appropriate sampling method was used to ensure the representativeness of the population. Questions for the research instrument was derived from theoretical frameworks in which the study is based (Case, 2012).

3.9. ETHICAL CONSIDERATIONS

Research ethics are important especially to scholars and researchers. It calls on researchers to protect the pride of their participants (Fouka and Mantzorou, 2011). This study ensured that ethical considerations are adhered to.

3.9.1. Permission to conduct research

First, the researcher applied for an ethical clearance certificate from Turfloop Research Ethics Committee (TREC) and University of Venda Ethics Committee to be given to all people gatekeeping the participants, such as the university librarian, the university registrar and academics. The ethical clearance number is TREC/107/2020: PG (attached as appendix two).

Permission (attached as appendix three) was requested from the University of Venda library management, which enabled the researcher to collect data. This was also backed up by the letter of request written by the supervisor of this research project (attached as appendix four) to the University of Venda Registrar's office. The office of the Director Research and Innovation (attached as appendix five) granted the researcher permission to collect data from participants, and policy on ethics was attached.

3.9.2. Privacy and confidentiality

To maintain confidentiality, respondents were made anonymous. Anonymity entails not identifying the ethnic background of respondents, refraining from mentioning them by their names, or revealing any other profound information about them (Mugenda, 2011). To ensure anonymity, confidentiality and privacy, the researcher informed respondents not to write their names in the questionnaire and in the covering letter (Attached as appendix six) which accompanied the questionnaire.

3.9.3. Consent form

Respondents were asked to sign a consent form (Attached as appendix seven) before completing the questionnaire to confirm that they were not pressured to participate in the study. This form was included in the google form questionnaire where participants tick if they agree to participate in the study.

3.10. CHAPTER SUMMARY

This chapter described the research methodology used in the study. The research methodology presented in detail the following: research paradigm, quantitative,

qualitative and mixed methods research approaches, research design, data collection, population and sampling, data analysis, quality criteria and ethical considerations. Chapter 4 presents data analysis and findings.

CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. INTRODUCTION

The purpose of this chapter is to present, analyses and interpret the research findings that were dicovered through methods and techniques that were discussed in chapter three. This chapter focuses on the presentation, analysis and interpretation of data that has been collected from respondents through close-ended and open-ended questions. In this study, results are presented in the form of pie charts and bar graphs. The analysis of the results in this study was completed in line with the research objectives raised in chapter one to ensure that questions raised in the study were addressed effectively.

4.2. RESPONSE RATE

The total number of responses received for this study was 563 undergraduate students from all eight schools at the University of Venda, namely, Schools of Agriculture, Education, Environmental Sciences, Health Sciences, Law, Management Sciences, Mathematical and Natural Sciences, and Human and Social Sciences. The response rate per school is depicted in figure 4.4.

4.3. DEMOGRAPHIC PROFILE OF RESPONDENTS

The researcher asked the demographic information of participants to gain their whole background information. Demographic and background information are important because they may serve as factors that influence the awareness and usage of OPAC functionalities among the participants. Therefore, the participants were asked to provide demographic information which include gender, age, level of study and the school in which they fall under.

4.3.1. Gender of participants

Figure 4.1 below shows that female students are the majority at 282 (50%) and males at 278 (49%) are a minority, and others constitute 3 (1%). The number of participants in terms of gender is balanced. The number of participants is in most cases depended on the enrolment statistics. However, the gender distribution findings in this study is contrary to the Department of Higher Education and Training (2020: 2), which shows that over the period 2013 to 2017, gross enrolment for women has been higher than that of men by approximately 40 per cent.

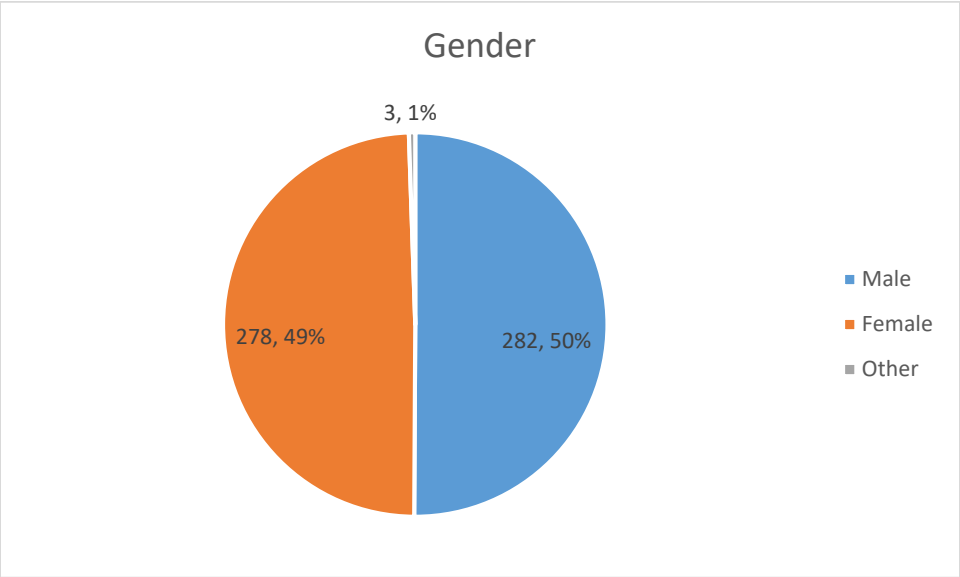

Figure 4.1. Gender of participants

4.3.2. Age of participants

Figure 4.2 below shows that the majority of student respondents are in the age range of between 20 to 29 years at a total of 304 (54%), while the age group range of 194 (34%) respondents is less than 19 years. There are 56 (10%) respondents whose age group ranges between 30 and 39, and 9 (2%) whose age group ranges from 40 to 49. There were no respondents whose age group ranged from 50 and above years. These results show that respondents who are in the majority are those in their twenties, whose average

age range is between 20 and 29 years, which is the average age group for tertiary education students (Department of Higher education and Training, 2018: 34).

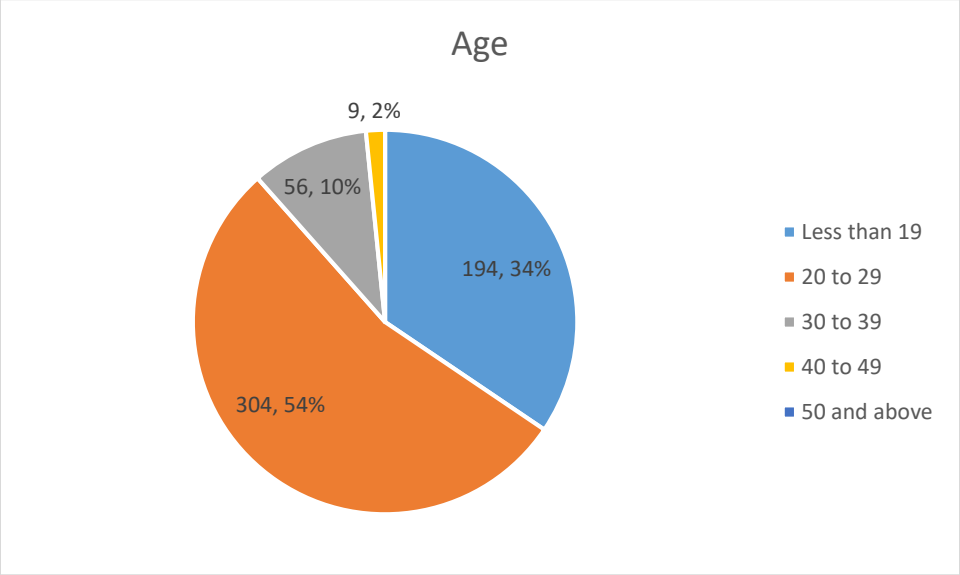

Figure 4.2. Age of participants

4.3.3. Respondents' level of study

Figure 4.3 below shows respondents' level of study: there were 152 (27%) first year students 165 (29%) second year, 133 (24%) third year and 133 (20%) fourth year. The results show that the majority of participants who responded to the questionnaire are in their second year that is 165 (29%). This shows that a minority of respondents at 113 (20%) were doing second year.

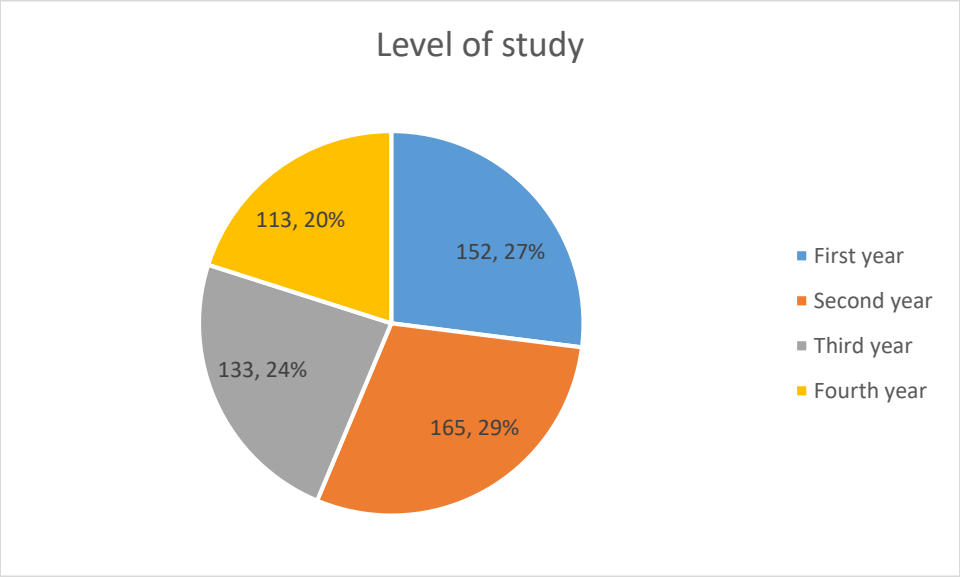

Figure: 4.3. Respondents' level of study

4.3.4. School of respondents

Figure 4.4 below shows eight schools. The School of Human and Social Sciences is the majority at 102 (18%), School of Mathematical and Natural Science 76 (13%), School of Agriculture 73 (13%), School of Environmental Sciences 67 (12%), School of Management Science 65 (12%), School of Education 65 (11%), and School of Health Sciences 60 (11%). A minority of respondents were in the School of Law at 55 (10%) respondents. The results show that the majority of respondents were in the School of Human and Social Sciences with the highest percentage of 102 (18%).

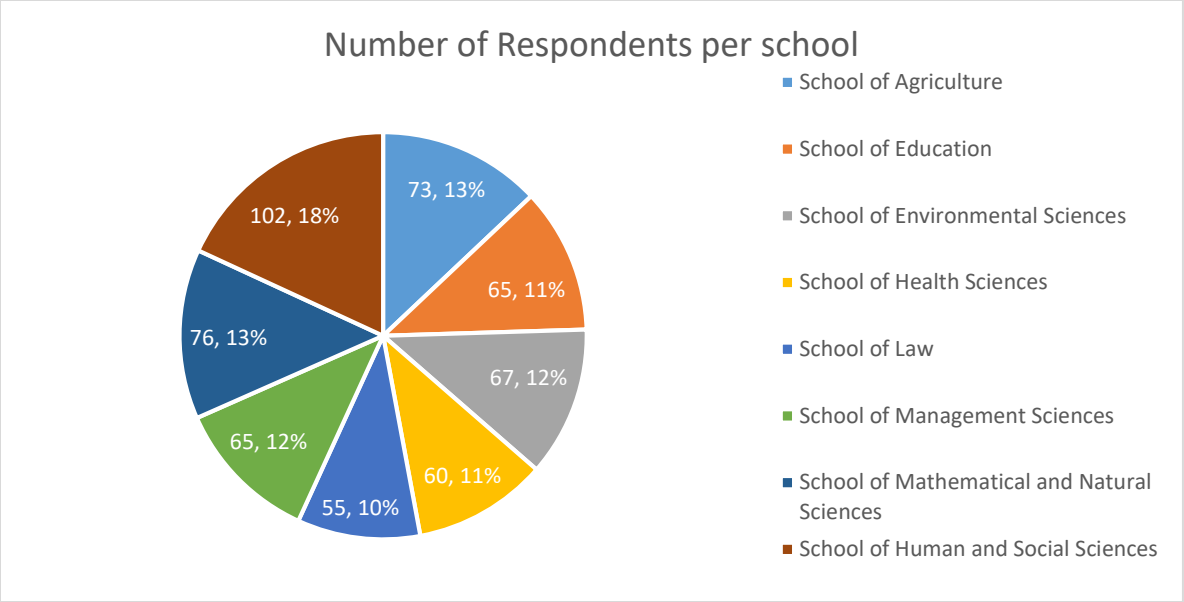

Figure 4.4. Respondents per School

4.4. AWARENESS OF OPAC

This section presents and analyses the results with regards to how respondents rate their level of awareness of OPAC, the extent to which they are aware and familiar with OPAC functionalities and capabilities functionalities and capabilities. The section also assess the sources through which they became familiar with OPAC.

4.4.1. Level of awareness for OPAC

Figure 4.5 shows that respondents were asked to rate their level of awareness with the OPAC system in the library. The majority were average at 221 (39%), 108 (19%) were low, 87 (16%) high, 81 (14%) very low and a minority of 66 (12%) respondents rated very high. The results reveal that the majority of respondents rated their level of awareness on an average level 221 (39%).

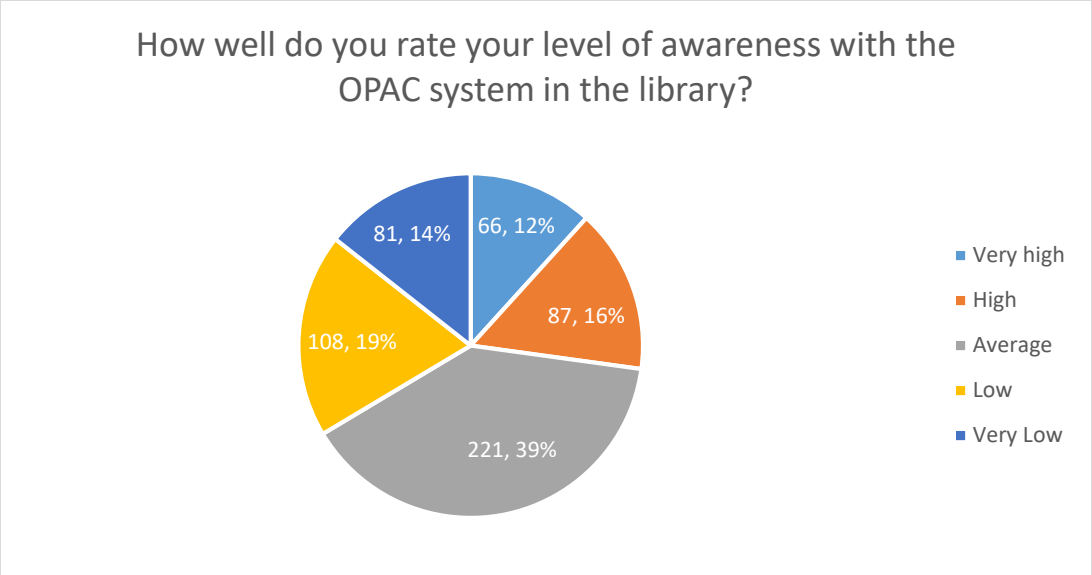

Figure 4.5. Respondents' level of awareness with the OPAC system

The results reveal that the majority of 221 (39%) respondents rated their level of awareness on an average level. Msagati's (2016) study indicated that the majority of respondents had a low level of awareness on the OPAC facility. This is in contradiction with Aju, and Foti's (2020) study, which revealed that the undergraduates used in this study were highly aware of the existence of OPAC in public university libraries in Nasarawa State, Nigeria. Therefore, the results of this study are found to be on an average level.

4.4.2. Extent of awareness and familiarity with OPAC functionalities

The researcher wanted to know the extent to which respondents are aware of, and familiar with OPAC functionalities such as Boolean operators, keyword search, searching by title, author search, searching by subject, truncation marks and advanced search by allowing respondents to use a scale or measurement of 1-5 as follows: 1= to no extent at all; 2= to an extent; 3= to some extent; 4= to a large extent and 5= to a very large extent. Results are illustrated in figure 4.6 below.

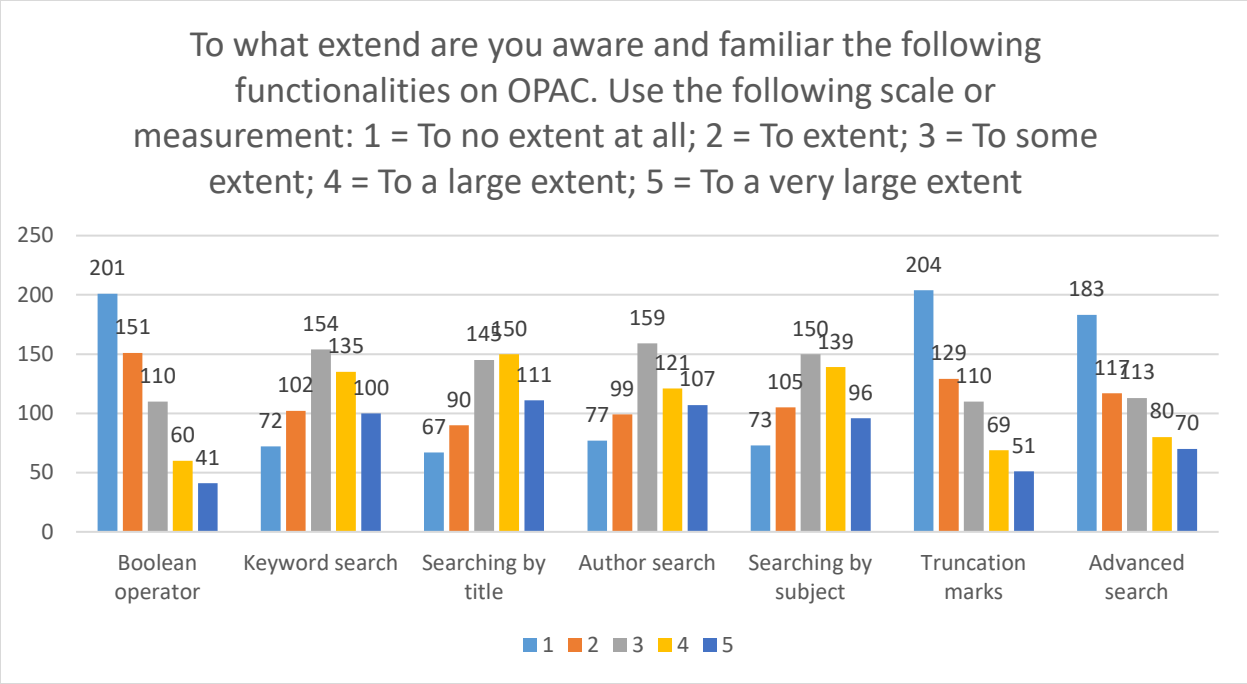

Figure 4.6. Extent of awareness and familiarity with OPAC functionalities

4.4.2.1 Boolean operators

The results revealed that the majority of 201 (36%) respondents were unaware and familiar with the Boolean operator feature “to no extent at all”, 151 (27%) to an extent, 110 (20%) to some extent, 60 (11%) to a large extent and a minority of 41 (07%) respondents to a very large extent. The results found that the majority of 201 (36%) respondents are not aware and familiar with the Boolean operator feature.

4.4.2.2. Keyword search

The results show the extent to which respondents were aware and familiar with the OPAC feature keyword search. The results indicated that 72 (13%) respondents measured to no extent at all, 102 (18%) to an extent, 154 (27%) to some extent, 135 (24%) to a large extent and 100 (18%) to a very large extent. The results found that the majority of respondents at 154 (27%) are aware and familiar with the keyword search operator

feature with responses. Only a minority of 72 (13%) respondents are unaware and familiar.

4.4.2.3. Search by title

The results show the extent to which respondents were aware and familiar with the OPAC feature search by title. The results indicated that 67 (12%) respondents measured to no extent at all, 90 (16%) to an extent, 145 (26%) to some extent, 150 (27%) to a large extent and 111 (20%) to a very large extent. The results found that the majority of respondents are aware and familiar with the search by title operator feature with 150 (27%) responses. A minority of 67 (12%) respondents are unaware and familiar.

4.4.2.4. Author search

The results show the extent to which respondents were aware and familiar with the OPAC feature author search. The results indicated that 77 (14%) respondents measured to no extent at all, 99 (18%) to an extent, 159 (28%) to some extent, 121 (21%) to a large extent and 107 (19%) to a very large extent. The results found that the majority of respondents are aware and familiar with the author search operator feature with 159 (28%) responses and only a minority of 77 (14%) respondents are unaware and familiar.

4.4.2.5. Searching by subject

The results show the extent to which respondents were aware and familiar with the OPAC feature searching by subject. The results indicated that 73 (13%) respondents measured to no extent at all, 105 (19%) to an extent, 150 (27%) to some extent, 139 (25%) to a large extent and 96 (17%) to a very large extent. The results found that the majority of respondents are aware and familiar with the keyword search operator feature with 150 (27%) responses. A minority of 73 (13%) respondents are unaware and familiar.

4.4.2.6. Truncation marks

The results show the extent to which respondents were aware and familiar with the OPAC feature truncation marks. The results indicated that 204 (36%) respondents measured to no extent at all, 129 (23%) to an extent, 110 (20%) to some extent, 69 (12%) to a large extent and 51 (9%) to a very large extent. The results found that the majority of 204 (36%) respondents are unaware and familiar with the keyword search operator feature, and a minority of 51 (9%) respondents are aware and familiar.

4.4.2.7. Advanced search

The results show the extent to which respondents were aware and familiar with the OPAC feature advanced search. The results indicated that 183 (33%) respondents measured to no extent at all, 117 (21%) to an extent, 113 (20%) to some extent, 80 (14%) to a large extent and 70 (12%) to a very large extent. The results found that the majority of 183 (33%) respondents are unaware and familiar with the keyword search operator feature, and a minority of 70 (12%) respondents are aware and familiar.

In accordance with the results above, Boolean search, truncation marks and advanced search functionalities appear to be OPAC functionalities that most respondents are “To no extent at all” aware of and familiar with. Therefore, Boolean operators, truncation marks and advanced search strategies are OPAC functionalities that most of the novice and inexperienced library users are unfamiliar, complicated and difficult to manipulate in the question for obtaining needed information. A study conducted by Fresnido and Barsaga (2019:29) on the information-searching behaviour log analysis of OPAC searches in an academic library found that users are oblivious of search limiters such as Boolean operators and Truncation marks. Their fashion of searching for information materials from the OPAC information retrieval systems is more or less the same as how they would usually conduct their searches on Google search box; and likely expecting that OPAC will return results that are similar to that of Google search. Boolean operators and truncation marks are in most cases used by professional information librarians when

searching information on behalf of library users. Smith (2000) confirms that information professionals have a long history of using Boolean logic in information search services, and while Boolean operators can be overwhelming to inexperienced users and further that advanced search interface for experienced users are likely to confuse less experienced users. Moulaison (2008) examined patron queries at a four-year comprehensive college's OPAC via transaction logs. Three uninterrupted days were dedicated for a more detailed examination of search characteristics of students. The results show that library users employed an average of one to three terms in a search, and did not use Boolean operators, which most of the searches resulted in zero hits.

Furthermore, the finding shows that keyword, title, author and subject searches are amongst the functionalities that most respondents are “To some extent” and “To a large extent” familiar with. This is similar to a study conducted at Odisha India by Rout and Panigrahi (2018), who found that most respondents’ search approach to OPAC is by title (31.62%) followed by (18.81%) the author. Gana, Ajibili and Abel (2019) conducted a study on awareness and use of OPAC by patrons of Bingham University Library, Karu, Nasarawa State, Nigeria. The finding shows that out of 333 total respondents, only 253 (76.0%) use OPAC services to a very little extent. Costello (2016) conducted a study to determine which metadata elements best facilitate the discoverability of digital collections searched by undergraduate students in Southwestern United States of America. It was found that the title, keywords and the subject search were the most used search entries to retrieve information from the institutional repository. Keyword and subject search are used due to the fact that they are default search field for OPAC (Wu, Liang and Bi, 2018).

4.4.3. Sources of awareness for OPAC

Figure 4.7 below shows how respondents became aware of OPAC. The results show that the majority of 277 (49%) respondents became aware of OPAC during library training, 91 (16%) through a librarian, 80 (14%) via a friend, 58 (10%) when browsing through the library website, other source 31 (6%) and a minority of 26 (5%) respondents through a

lecturer. The results reveal that the majority of 277 (49%) students became aware of OPAC during library training.

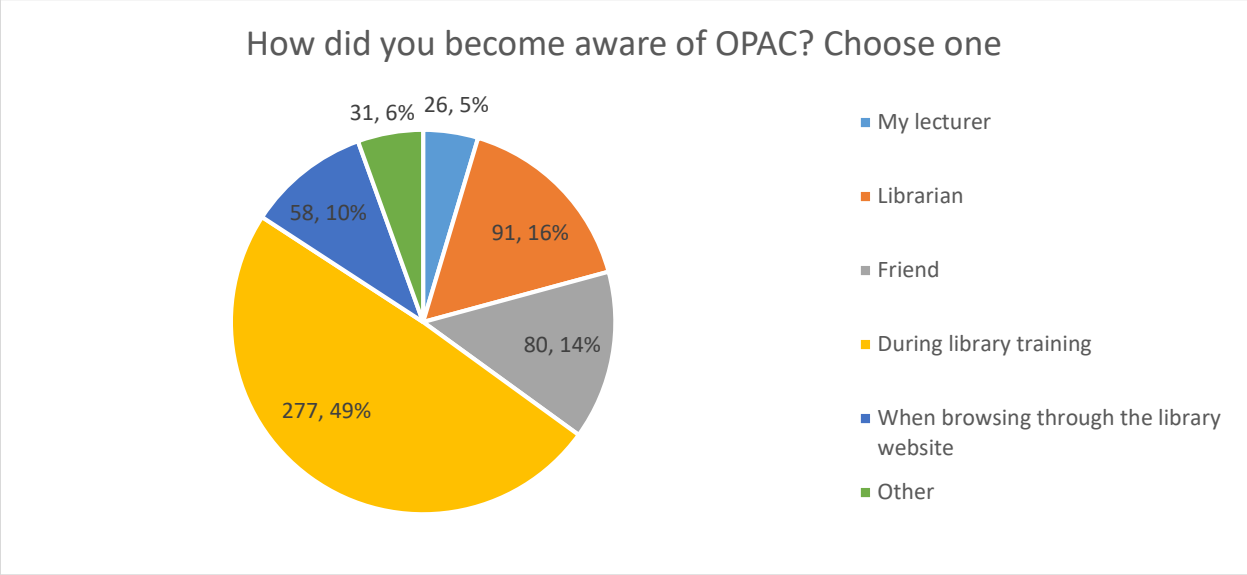

Figure 4.7. Sources of OPAC awareness

The results reveal that the majority of 277 (49%) students became aware of OPAC during library training. Narayanaswamy (2019) revealed that in terms of channels of awareness regarding WebOPAC, results show that 148 (31.82%) respondents became aware of OPAC through Library orientation, Library tour, Library brochure, library manual and handbook. A study by Naik and Nikam (2014) on the use of web OPAC by law students at Karnataka, in India, found that most of the students who use OPAC learned about it during the library orientation programme. A study conducted by Shorunke, Eluwoleand Gbenu (2014) on evaluating user satisfaction with OPAC at the Landmark University also found that library users learned about OPAC during the library study skills and Information technology course offered by the library.

These previous findings show that library user education training by librarians is crucial in making library users aware of library services and resources. User education is usually

conducted through Library Orientation, Bibliographic Instruction and Information Literacy. Saliba (2021) notes that library user education by librarians in academic libraries is not only designed to enhance students' basic research and information-searching and retrieval skills, but also to make them aware of the available and accessible resources. Chinyere (2014) is also of the opinion that user education is one of the major undertakings for creating awareness to students. User education is a process of activities whereby library users are trained on how to effectively and efficiently use the library and its information resources.

4.5. PERCEPTIONS OF STUDENTS TOWARDS OPAC

This section presents and analyses the results with regard to mode of access to information in the library. The section looks into mode of access preferred by respondents, as well as their perceptions and attitudes towards OPAC where, in some questions Likert scaling of:, 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree was used as a determining tool, while the frequency of OPAC usage was determined through scaling of frequency measurements such as daily, weekly, occasionally, monthly etc.

4.5.1. Preferred mode of access to information in the library

Respondents were first asked to show the mode of access to information in the library which they prefer to use. They were requested to choose between OPAC, Browsing on the shelves, library assistance, Internet search and card catalogue and Google search. Figure 4.8 below shows the mode of access to information in the library which respondents prefer. The results show that the majority of 223 (40%) respondents prefer OPAC, 116 (20%) Google search, 64 (11%) prefer librarian assistance, 56 (10%) internet search, 55 (10%) shelve browsing and a minority of 49 (9%) respondents prefer manual search. The results reveal that the majority of 223 (40%) respondents prefer OPAC.

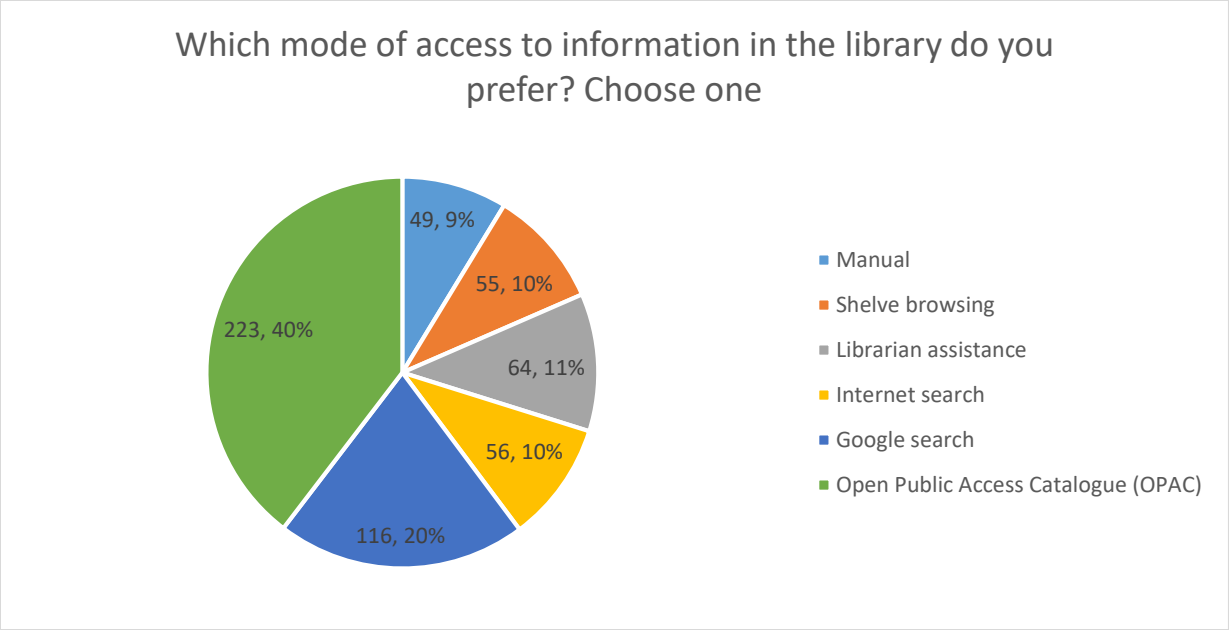

Figure 4.8. Preferred mode of access to information in the library

The results found that the majority of 116 (20%) participants preferred to use OPAC to access information in the library. This confirms the results as demonstrated in the problem statement. These results correspond with Arshad and Shafique (2014: 290) in which users were asked about the mode of access to library materials which they prefer between the card catalogue and OPAC. It was found that the majority of students at Punjab University Library, that is, 78, 3 percent preferred OPAC than the card catalogue. However, a study by Connaway, Dickey and Radford (2011) found that most of the students preferred Google search because of its convenience. The concept of convenience in information-seeking behaviour includes the "choice of an information source, satisfaction with the source and ease of use, as well as the time horizon in information-seeking" (Connaway et al, 2011: 179).

4.5.2. Attitudes towards OPAC

The researcher wanted to understand the perceptions of users towards OPAC by allowing respondents to show the extent to which they agree or disagree with the given statements

following a scale/key of 1-5 as follows: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. The results are illustrated in figure 4.9 below.

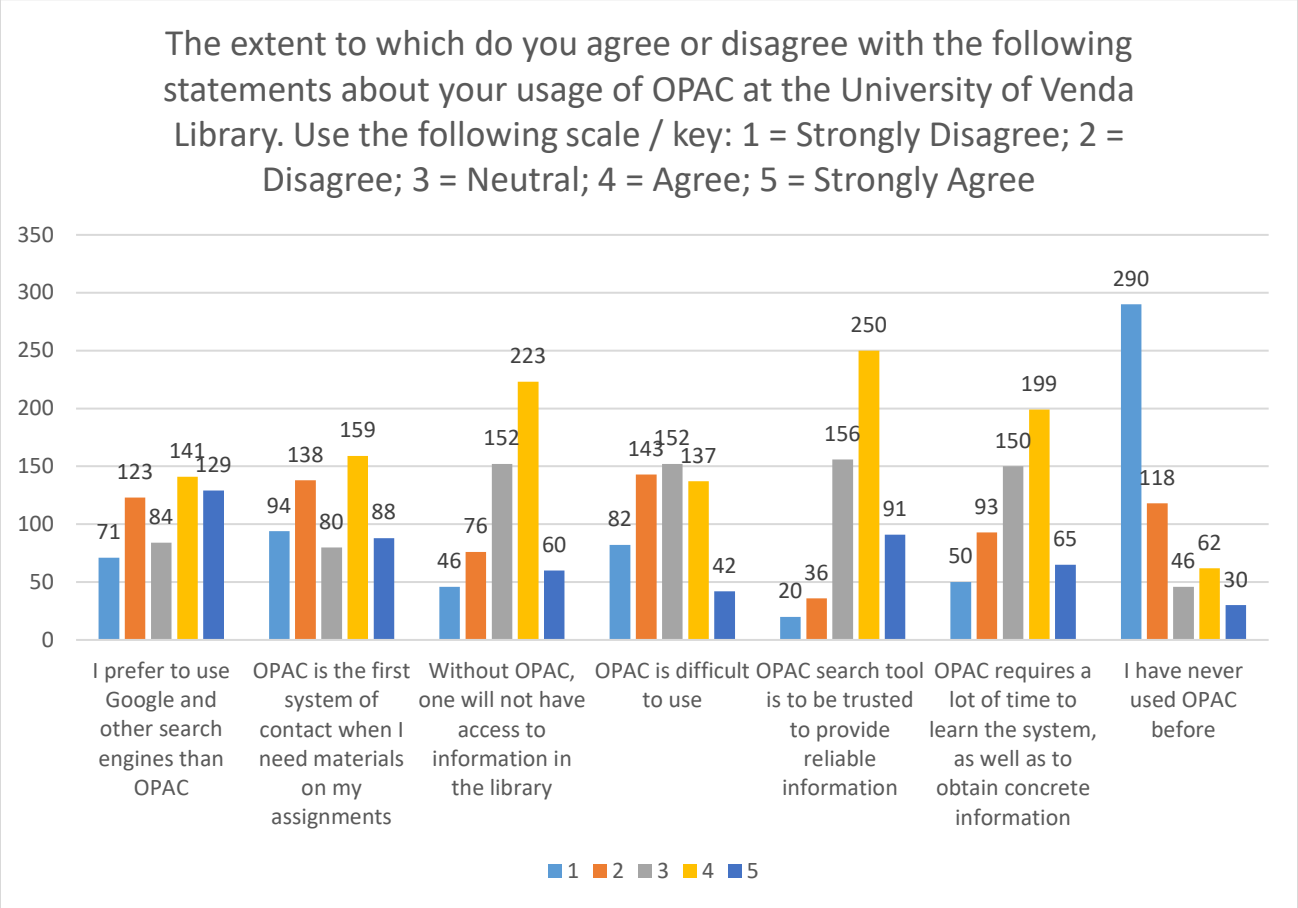

Figure 4.9. Attitudes or perspective towards OPAC

4.5.2.1. I prefer to use Google and other search engines than OPAC

The results show respondents on the statement I prefer to use Google and other search engines than OPAC as follows: only 71 (13%) respondents strongly disagree, followed by 135 (22%) who disagree, 84 (15%) are neutral, whilst 141 (25%) agree and 129 (23%) strongly agree. The results show that the majority of 141 (25%) respondents agree that they prefer to use Google and other search engines than OPAC whereas a minority of 71 (13%) respondents strongly disagree.

4.5.2.2. OPAC is the first system of contact when I need materials on my assignments

The results show respondents on the statement that OPAC is the first system of contact when I need materials on my assignments as follows: 94 (17%) respondents strongly disagree, 138 (25%) disagree, 80 (14%) are neutral, 159 (28%) agree and 88 (16%) strongly agree. The results show that the majority of 159 (28%) respondents agree that OPAC is the first system of contact when they need materials on assignments, whereas a minority of 80 (14%) respondents are neutral.

4.5.2.3. Without OPAC, one will not have access to information in the library

The results on the statement without OPAC, one will not have access to information in the library, shows that 46 (08%) respondents strongly disagree, 76 (13%) disagree, 152 (27%) are neutral, 223 (40%) agree and 60 (11%) strongly agree. The results show that the majority of 223 (40%) respondents agree that without OPAC, one will not have access to information in the library, and a minority of 46 (08%) respondents strongly disagree.

4.5.2.4. OPAC is difficult to use

The results on the statement OPAC is difficult to use shows that 82 (15%) respondents strongly disagree, 143 (25%) disagree, 152 (27%) are neutral, 137 (24%) agree and 42 (07%) strongly agree. The results show that the majority of 152 (%) respondents are neutral to support the statement that OPAC is difficult to use, whereas a minority of 42 (%) respondents strongly agree.

4.5.2.5. OPAC search tool is to be trusted to provide reliable information

The results on the statement that the OPAC search tool is to be trusted to provide reliable information shows that 20 (4%) respondents strongly disagree, 36 (6%) disagree, 156 (28%) are neutral, 250 (44%) agree and 91 (16%) strongly agree. The results show that the majority of 250 (44%) respondents agree that the OPAC search tool is to be trusted

to provide reliable information, whereas a minority of 20 (4%) respondents strongly disagree.

4.5.2.6. OPAC requires a lot of time to learn the system, as well as to obtain concrete information

The results on the statement OPAC requires a lot of time to learn the system, as well as to obtain concrete information shows that 50 (9%) respondents strongly disagree, 93 (17%) disagree, 150 (27%) are neutral, 199 (35%) agree and 65 (12%) strongly agree. The results show that the majority of 199 (35%) respondents agree that OPAC requires a lot of time to learn the system, as well as to obtain concrete information, whereas a minority of 50 (9%) respondents strongly disagree.

4.5.2.7. I have never used OPAC before

The results on the statement I have never used OPAC before shows that 290 (52%) respondents strongly disagree, 118 (21%) disagree, 46 (08%) are neutral, 62 (11%) agree and 30 (05%) strongly agree. The results show that the majority of 290 (52%) respondents strongly disagree that they have never used OPAC before and a minority of 30 (05%) respondents strongly agree.

While respondents who are on the negative are those who “strongly disagree” that they have never used OPAC, those in the positive “agree” to the four (4) statements that according to their order of importance that:

- OPAC search tool is to be trusted to provide reliable information
- Without OPAC one will not have access to information in the library
- OPAC requires a lot of time to learn the system
- OPAC is the first system of contact when looking for assignment information.

All the statements above reveal the prominence of OPAC in students' academic journey. It has been emphasised in the introductory chapter that the purpose of using OPAC is not only to identify and copy the location number for the needed materials in the library, but also to provide a gateway through which other library services and resources for accessing library materials are found. Therefore, for academic library users to access information services and resources in the library, they must first consult OPAC (Eserada and Okolo, 2019). To find books, encyclopedias and other reference sources, as well as other library services and resources in the library, one has to go through the OPAC system. The findings also confirm that it is almost impossible for a library user to know where to locate an information source on a specific subject or by a specific author on the shelf within an academic library without first consulting a library catalogue (Monyela, 2019). The statement in bullet three (3) suggests that students need periodic orientation and training towards the usage of OPAC by library staff (Vijayakumar and Manasa, 2018). It is therefore, imperative that library users, undergraduate students in particular, should learn how to manipulate OPAC by electronic means. This training empowers them to locate relevant information sources such as books, periodicals, journals, reference sources or other library materials and services in a quicker manner (Arshad and Shafique, 2014: 287).

4.6. FREQUENCY OF OPAC USAGE AND ITS CAPABILITIES AND FUNTIONALITIES

This section covers the frequency at which undergraduate students use OPAC, as well as the OPAC functionalities and capabilities which they use in terms of search entries and search options used.

4.6.1. Frequency of OPAC usage

Figure 4.10 shows that participants were asked to indicate how frequently they use OPAC. The results show that 281 (50%) participants use OPAC occasionally, 103 (18%) never used OPAC, 74 (13%) indicated once in a week, 38 (07%) daily, 33 (06%) once in two days, and 33 (06%) twice a week. The results show that the majority of 281 (50%)

respondents occasionally use OPAC, and a minority of respondents use it (33 (06%)) once in two days and twice a week.

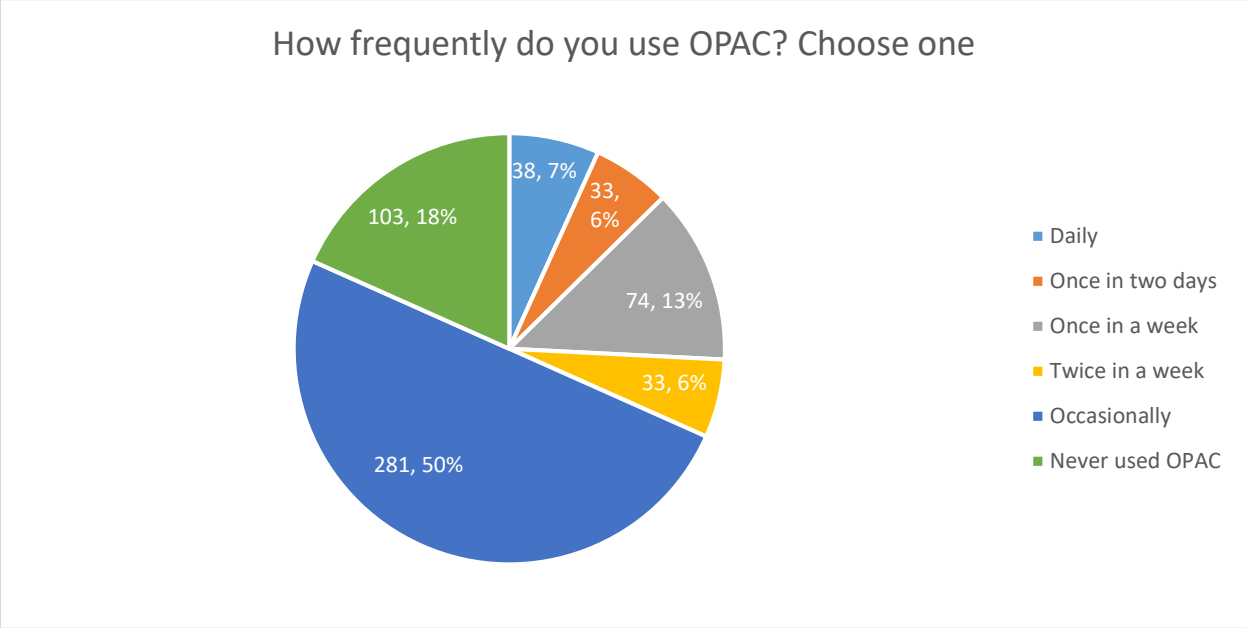

Figure 4.10. Frequency on use of OPAC

It is important to know how frequently users use OPAC to locate their required documents. The results in the study show that the majority of 281 (50%) respondents occasionally use OPAC. The frequency of using OPAC shows its significance in the library; hence Kumar and Vohra (2011), who revealed that the majority of respondents used OPAC occasionally. Rout and Panigrahi (2018) in their survey found that the majority of respondents of 54.24% are using OPAC when necessary not on a regular basis. Thirumagal and Saravanakumar (2018) that found 38.7 percent of respondents have never used OPAC.

4.6.2. Search entries and search used on OPAC

This section presents the results on the search entries and the search options which the responded use when searching information from OPAC. Search entries include access points or fields such as author, title, subject, keywords etc., while search options include simple and advanced search options or a combination of both.

4.6.2.1. Search entries used when search on OPAC

Figure 4.11 shows which search entries used by respondents when conducting a search on OPAC. The results show that 379 (67%) respondents search using title, 339 (60%) subject, 302 (54%) keywords, 299 (53%) author, 120 (21%) accession number and 92 (16%) never used OPAC. The findings reveal that the majority of 379 (67%) respondents use title search entry to conduct a search on OPAC and a minority of 92 (16%) respondents have never used OPAC.

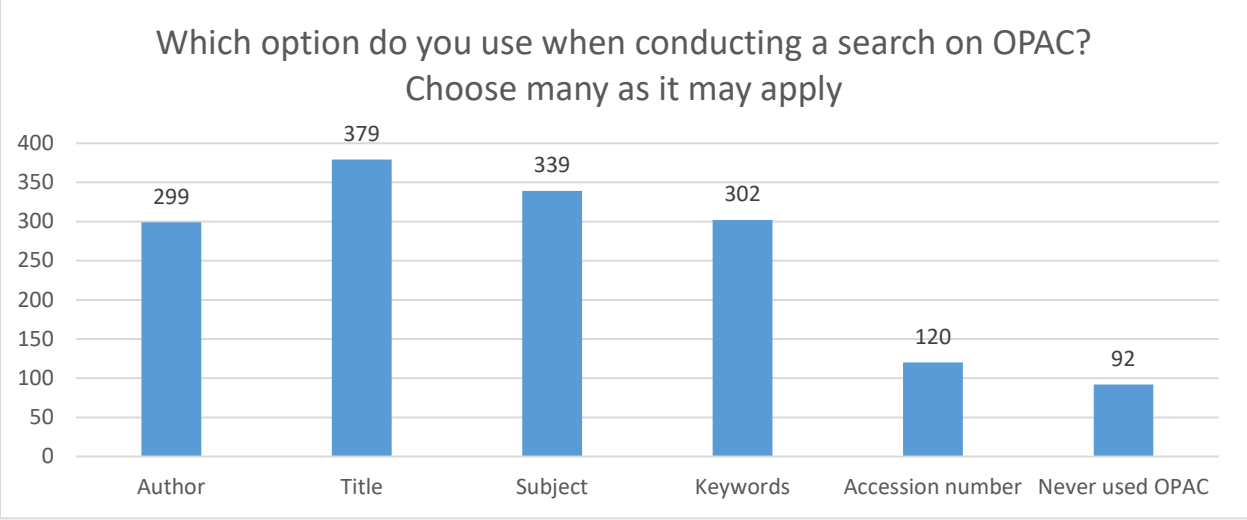

Figure 4.11. Option to use when conducting a search on OPAC

These results in 4.11 confirm previous results that students are only aware and familiar with title, author and subject search entries. Keyword search entry also appears to be used as search entries by most respondents. The findings of the study conducted by Morupisi and Mooko (2006) on usage of OPAC at the University of Botswana also found that students search information from OPAC by title, author, keywords and subject. Furthermore, the study indicated that the students had difficulty with subject search, keyword search option, and accessing journal articles through OPAC.

Gohain and Saiaki (2013) also emphasised that the purpose of OPAC is to know what a library has on a particular author, title and subject. Therefore, most novice users of the library OPAC may not be aware of functions of OPAC beyond finding library materials by author, title and subject. Ndumbaro (2018) also found that most OPAC users at University of Dar es Salaam library preferred access points such as author, title, and subject and, by default, keyword search. Author, title and subject search entries are used for searching known items from OPAC, and appears to be the easiest way of finding needed materials than when searching for unknown items. Slone (2000) confirms that simplicity in searching information from OPAC is experienced when searching known items, while frustration and doubt are experienced when searching unknown items.

4.6.2.2. Search options used when searching on OPAC

Figure 4.12 shows which search options respondents use when searching for information on OPAC. The results show that 249 (44%) respondents use simple search, 142 (25%) use both simple and advanced search, 93 (17%) never used OPAC and 79 (14%) use advanced search. The findings indicate that the majority of 249 (44%) respondents use the simple search option, and a minority at 79 (14%) use the advanced search option. Other respondents constituting 142 (25%) use a combination of simple and advanced search options.

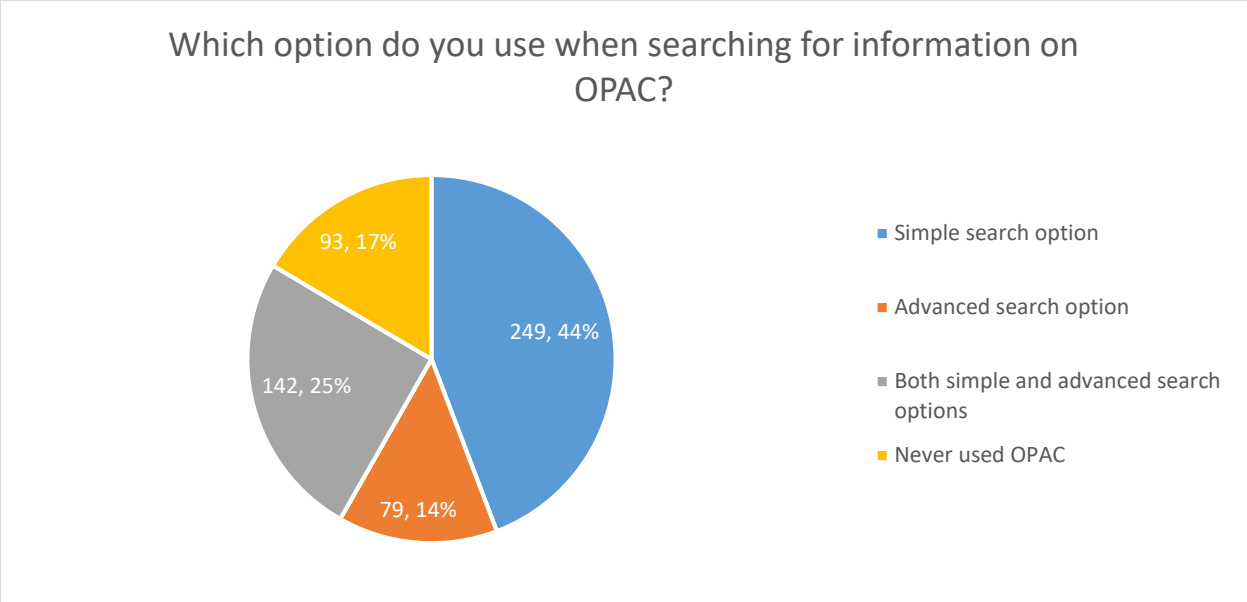

Figure 4.12. Option used when searching for information on OPAC

From the information-seeking behaviour point of view, the results above show that users always choose search options that are easy to follow that complex search options. Among different information-seeking behaviour theories, there is also a theory of the “Principle of Least Effort” (PLE), which was developed by the French philosopher Guillaume Ferrero in 1894 (Azami and Neamati, 2018). The central premise of this theory is that individuals adopt a course of action that expend the probable least average of their work in performing tasks. The use of this principle reveals that information seekers are likely to minimise the efforts required to gather information (Azami and Neamati, 2018). Thus, information seekers prefer easy to use information sources and invest little in seeking information as well as accessible sources of known high quality that are not easily accessible. This then results in the most convenient search method for least exacting mode available, and information-seeking behaviour stops immediately when minimal accepted results are found (Fisher, Erdelez and McKechnie, 2005: 290).

4.7. PURPOSE OF USING OPAC

There are various purposes for which undergraduate students use OPAC. Among some of the purposes include: to know the availability of the material; to update oneself on new books in the library; to know the location of a particular book; to check if the material requires is issued; to find journals, to find other non-book materials for printing and downloading documents; for exporting records to reference mismanagement tools, among others. Figure 4.13 shows for what purpose respondents use OPAC using a scale/key: 1= Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. The results are as follows:

4.7.1. To know the availability of the material

Twenty (04%) respondents strongly disagree, 34 (06%) disagree, 111 (20%) are neutral, 231 (41%) agree and 167(30%) strongly agree. The results reveal that the majority of 231 (41%) respondents agree that the purpose of OPAC is to know the availability of the material, whereas a minority of 20 (04%) respondents strongly disagree.

4.7.2. To update myself on new books in the library

Thirty-seven (07%) respondents strongly disagree, 51 (09%) disagree, 141 (25%) are neutral, 223 (40%) agree and 111 (20%) strongly agree. The results reveal that the majority of 223 (40%) respondents agree that the purpose of OPAC is to update themselves on new books in the library, whereas a minority of 37 (07%) strongly disagree.

4.7.3. To know the location of a particular book

Twenty-three (04%) respondents strongly disagree, 31 (06%) disagree, 118 (21%) are neutral, 216 (38%) agree and 175 (31%) strongly agree. The results reveal that the majority of 216 (38%) respondents agree that the purpose of OPAC is to know the location of a particular book whereas a minority of 23 (04%) respondents strongly disagree.

4.7.4. To check if the material requires is issued

Twenty-six (05%) respondents strongly disagree, 36 (06%) disagree, 145 (26%) are neutral, 220 (39%) agree and 136 (24%) strongly agree. The results reveal that the majority of 220 (39%) respondents agree that the purpose of OPAC is to check if the material requires is issued, and a minority of 26 (05%) respondents strongly disagree.

4.7.5. To find Journals

Thirty-two (06%) respondents strongly disagree, 60 (11%) disagree, 168 (30%) are neutral, 198 (35%) agree and 105 (19%) strongly agree. The results reveal that the majority of 198 (35%) respondents agree that the purpose of OPAC is to find journals, whereas a minority of 32 (06%) respondents strongly disagree.

4.7.6. To find other non-book materials

Forty (07%) respondents strongly disagree, 77 (14%) disagree, 197 (35%) are neutral, 169 (30%) agree and 80 (14%) strongly agree. The results reveal that the majority of 197 (37%) respondents are neutral that the purpose of OPAC is to find other non-book materials, and a minority of 40 (07%) respondents strongly disagree.

4.7.7. Printing and downloading documents

Forty-nine (09%) respondents strongly disagree, 87 (15%) disagree, 214 (38%) are neutral, 138 (25%) agree and 75 (13%) strongly agree. The results reveal that the majority 214 (38%) respondents are neutral that the purpose of OPAC is for printing and downloading documents, and a minority of 49 (09%) respondents strongly disagree.

4.7.8. Exporting records to reference mismanagement tools

Seventy-two (13%) respondents strongly disagree, 102 (18%) disagree, 217 (39%) are neutral, 121 (21%) agree and 51 (9%) strongly agree. The results reveal that the majority 217 (39%) respondents are neutral that the purpose of OPAC is to export records, and a minority of 51 (09%) respondents strongly agree.

4.7.9. To compile a bibliography for my research topics

Forty-nine (09%) respondents strongly disagree, 60 (11%) disagree, 202 (36%) are neutral, 136 (24%) agree and 116 (21%) strongly agree. The results reveal that the majority of 202 (36%) respondents are neutral that the purpose of OPAC is to compile a bibliography for their research topics, and a minority of 49 (09%) respondents strongly disagree.

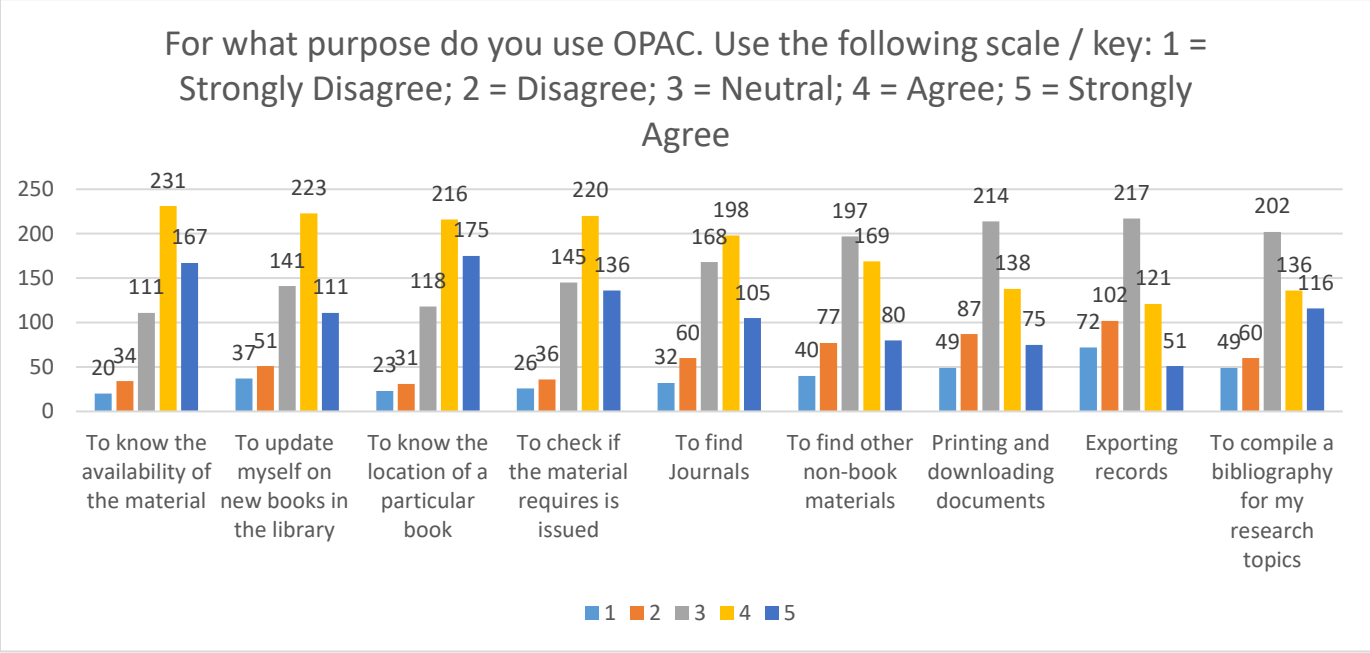

Figure 4.13. Purpose of using OPAC

The results show that most respondents agree that they use OPAC to check the availability of the materials in the library; to update themselves on new books in the library; to know the location of a book; to check if the material needed is issue and to find journals. The purposes are the ones which the initial web based catalogues were created for. These results correspond with those of a study by Singh and Kumar (2019), which shows that the majority of respondents use the library OPAC system for checking availability of a book or the due date of any issued book (36.36%), but a little number of respondents also use the library OPAC to check their library fines (16.78%). Similarly, this study findings also correspond to those by Katabalwa and Mnzava (2020), who also found that the majority (77.6%) of respondents noted that the reason for using OPAC was to know the library materials available in the collection for a short time. Rout and Panigrahi's (2018) finding also revealed that the majority of (74.19%) respondents consult OPAC to know the availability and to locate a particular book in the library. Narayanaswamy (2019) found that the least purpose of OPAC usage was to compile a bibliography of books on a particular subject and to find non-print materials.

The fact that some respondents used OPAC to update themselves with new materials in the library shows that this system can also be used as a current awareness service tool. Zhigeng (2006) also mentions that there are more functionalities that the next generation of OPAC systems can offer, such as alerting services, blogs, and Really Simple Syndication (RSS) feeds, which can provide current awareness services to end users. McMullen and Gray (2012) describe how academic libraries utilise the library catalogue database to generate a list of new arrivals for academic departments. Academic libraries usually have a link to new arrivals or new book link on the Library OPAC so that library users should have access to bibliographic citations of new books recently added to the library collection in their fields of interests.

There is also an element of central tendency on the part of respondents which is being observed in these findings. There are respondents who are neutral about whether they used the library OPAC to find other non-book materials, to print and download documents,

to export records and to compile a bibliography for assignments. Rather than showing whether they agree or disagree with the statements, they chose to remain neutral. Perhaps this is because they are not aware of OPAC's capacity to provide more sophisticated functions or purposes. Today there sophisticated new tools and discoveries that modern OPAC systems are capable of delivering, are more prompt, instant and seamless. Library users are in a position to export citations to citation management tools of their choice and to send the results of a search by email via the new Web OPAC.

4.8. CHALLENGES ENCOUNTERED WHEN ACCESSING AND USING OPAC

The researcher wanted to know the kind of problems or challenges that respondents encounter when accessing and using OPAC.

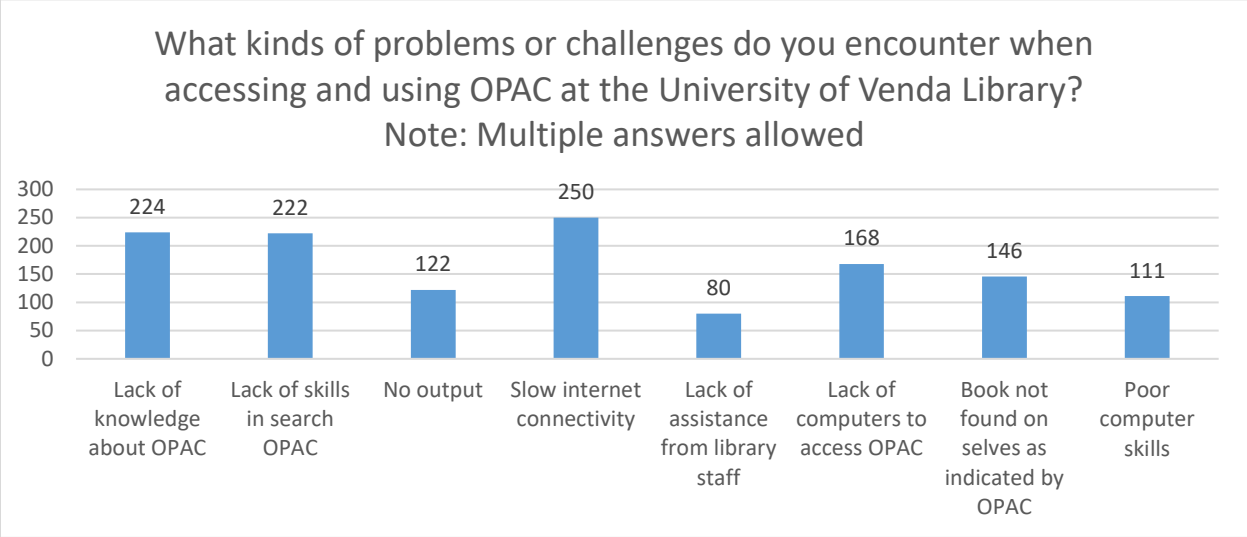

Figure 4.14. Problems or challenges encountered when accessing and using OPAC

The results indicate 224 (40%) respondents lack knowledge about OPAC, 222 (39%) lack of skills in searching OPAC, 122 (22%) no output slow, 250 (44%) internet connectivity, 80 (14%) lack assistance from library staff, 168 (30%) lack computers to access OPAC,

146 (26%) book not found on shelves as indicated by OPAC and 111 (20%) poor computer skills.

The findings reveal that the major challenge encountered is slow internet connectivity by 250 (44.4%) respondents, and a minority of 80 (14%) respondents indicate their problems as lack of assistance from library staff. Slow internet connectivity is the highest challenge that most respondents have shown. Connectivity is always regarded as a condition to gain access to any computerised library and information services system. This challenge has also been reported by Howlader and Islam (2019) in most developing countries and Ishola and Ojeniyi (2015) in South West Nigeria. A study conducted by Larson (2018) on the use of OPAC among undergraduate students at Osagyefo Library, University of Education, Winneba, Ghana, also found that among some of the challenges experienced are inadequate computer workstations and slow internet connectivity. This challenge goes along with lack of computers to access OPAC in the library. Williams (2020) identified financial resources and ICT structure as critical factors for service delivery in academic libraries in South Africa. Eneya (2009) reveals that the automation project at the University of Malawi failed because of few computers to access OPAC and the slow internet connection.

The next challenge towards effective and efficient usage of OPAC in this study is lack of search skills and knowledge of OPAC. Lack of information-searching and retrieval skills were found to be the prominent reason for not utilising the OPAC feature in many studies (Gohain and Saikia, 2013; Lwehabura, 2018; Ferdow and Ahmad, 2015; Arshad and Shafique, 2014; Kumar and Vohra, 2011; Eserada and Okolo, 2019). The same study by Larson (2018) also shows lack of basic skills for searching OPAC as one of the challenges that undergraduate students face. A study by Obim, Ezeani and Nwadike (2017) also identified lack of orientation by library staff before students can use OPAC in three Nigerian University libraries. This finding relates to the information search process by Taylor (1962) on the state of readiness on the part of the inquirer. Molepo and Bopape (2019) note that the information user's experience with searching information from the

information retrieval system has an influence on his/her confidence in finding the desired information. Furthermore, complexity of the information retrieval system affects the information user‘s readiness to manipulate the system for the purpose of retrieving the needed information.

The other problem related to the usage of OPAC is when after finding the location number for a book, one is unable to find the material required on the shelves. This problem is the end result of lack of shelf maintenance on the part of library staff. Sokoya (2003) reports that shelf maintenance, shelf reading and properly arranged library materials are regarded as tools for measuring the performance of a library and satisfaction with the services the library provides. In order to maximise the availability and usage of library materials, “they must be organized in a logical system and maintained according to that system” (Edwardy and Pontius, 2011: 90).

4.10. CHAPTER SUMMARY

This chapter has presented, categorised and analysed findings collected through a questionnaire, which consisted of closed ended questions from undergraduate students at the University of Venda. The chapter has presented the data which was collected through a google form questionnaire. The results were then compared with those of the previous studies on the same topic.

Chapter 5 discusses the major findings, conclusions and recommendations.

CHAPTER FIVE
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1. INTRODUCTION

In the previous chapter, the researcher has presented, analysed and interpreted the data of the study. The discussion and interpretation of the results was based on various scholarly viewpoints, and indicated that most findings in this study support what has already been found from the literature. The purpose of the current chapter is to provide conclusions derived from the findings of the study, to summarise the major research findings, and to propose possible recommendations based on the findings of the study. The current chapter is therefore divided into re-statement of the aim and objectives of the study, major findings that are based on the objectives of the study, conclusions and possible recommendations that are derived and based on the major findings of the study.

5.2. RESTATEMENT OF OBJECTIVES OF THE STUDY

This study sought to examine awareness and usage patterns of the existing functionalities of Online Public Access (OPAC) to access library services and resources among undergraduate students of the University of Venda (UNIVEN). The objectives of the study were as follows:

- To measure the level of awareness of OPAC functionalities and capabilities amongst UNIVEN undergraduate students.
- To establish perceptions of UNIVEN undergraduate students towards OPAC functionalities and capabilities.
- To determine the frequency at which undergraduate students at UNIVEN use OPAC functionalities and capabilities .
- To reveal the purposes for which undergraduate students at UNIVEN use OPAC functionalities and capabilities.
- To identify challenges encountered by undergraduate students in using OPAC functionalities and capabilities at UNIVEN.

5.3. SUMMARY

In order to realise the aim and objectives of the study, the questionnaire with closed ended questions was adopted as a data collection tool, and was distributed among five-hundred and sixty three (563) undergraduate students attached to eight (8) schools at the University of Venda. This section focusses its attention on the major findings or results of the study.

5.3.1. Levels of awareness of OPAC by students

The results on the measurement of level of awareness towards OPAC reveal that the majority of respondents rated their level of awareness on an average level. This was followed by those who rated their level of awareness of OPAC as low.

5.3.2. Extent of awareness and familiarity with OPAC feature

Respondents were further asked to rate their level of awareness and familiarity in terms of capabilities and functionalities of OPAC. The findings revealed that the majority of respondents are not aware and familiar with the Boolean operators, truncation marks and advanced search features. The findings also revealed that majority of the respondents are aware and familiar with keyword search, search by title, author search and searching by subject.

5.3.3 Sources of awareness of OPAC

The respondents were asked to choose the sources which made them aware of OPAC. The results on the sources of awareness of OPAC reveal that the majority of students became aware of OPAC during library training, followed by their lecturers.

5.3.4. Perceptions towards OPAC

Respondents were asked about their perceptions towards OPAC, by formulating some positive and negative statements about its usage to determine respondents' attitudes towards OPAC. The major findings reveal that majority of the respondents prefer the

OPAC mode to access information in the library. Majority of the respondents' attitude towards OPAC have positively agreed to the following statements:

- I prefer to use Google and other search engines than OPAC
- OPAC is the first system of contact when they need materials on assignments
- Without OPAC, one will not have access to information in the library
- OPAC search tool is to be trusted to provide reliable information
- OPAC requires a lot of time to learn the system, as well as to obtain concrete information

Furthermore, findings found that majority of respondents are neutral to support the statement that OPAC is difficult to use and lastly the study reveal that the majority of respondents strongly disagree that they have never used OPAC before.

5.2.5. Frequency of usage of OPAC

The results show that the majority of respondents occasionally use OPAC. This shows that undergraduate students use OPAC only when there is a need.

5.2.6. Search entries and options used by students

The findings reveal that the majority of respondents use the title search entry to conduct a search on OPAC. The findings further indicate that the majority use the simple search option. Other search options such as advances, and keyword searches are least used by most respondents.

5.3.7. Purposes for usage of OPAC

All the functionalities of OPAC were to determine which ones undergraduate students more frequently use and were provided with positive and negative statements to select. The results reveal that the majority of the respondents agree that the purpose of OPAC is to know the availability of the material; to update themselves on new books in the library; to know the location of a particular book; to check if the material required is issued and to find journals. Furthermore, the study found that majority of the respondent were neutral that the purpose of OPAC is to find other non-book materials; to print and

download documents; to export records and to compile a bibliography for their research topics.

5.3.8. Challenges encountered in the usage of OPAC

Participants were given multiple answers to select from and the results shows that the major challenge encountered is slow internet connectivity. Other challenges encountered included lack of knowledge and skills in using OPAC by students.

5.4. CONCLUSION

In conclusion, OPAC is an important and a valuable information retrieval tool developed in academic libraries discoverable by users on and off campus. From the findings of the study, it was found that most students rate their awareness of OPAC as average, followed by those who rate their awareness as low. It was also found that in as much as there are undergraduate students who are aware and familiar with OPAC functionalities and functionalities, there are those who are not aware and familiar with them. Furthermore, the results showed that most of the undergraduate students became aware of this tool during library training. The conclusion drawn from the findings on awareness is that even if undergraduate students at UNIVEN are aware of OPAC, they do not use it optimally to access information from the library. The major obstacle towards optimal utilisation of OPAC is their poor knowledge of advanced functionalities of OPAC and poor information search skills.

Therefore, looking at the information-seeking behaviour model (Taylor, 1962) on which this study is based, the interaction between OPAC users and the OPAC system is affected by internal system organisation, state of readiness of the inquirer, and the complexity of the OPAC system. It appears that because of the state of readiness of undergraduate students to search information from OPAC, they tend to depend on simple information search options such as title and author. The OPAC functionalities that are complex and advanced are therefore avoided by undergraduate students as information enquirers. When they try to use more advanced search options, the questions that they put into the system are not recognised by OPAC because they do not have skills in utilising

information search techniques such as Boolean logic, truncation and proximity and field search. It is for this reason that most of the researchers on the use of OPAC recommend the development of information retrieval tools that can be searched like google and other search engines.

It is also concluded that among the challenges that undergraduates encountered in the interaction with OPAC was slow internet connectivity. Challenges such as these are found to be general variables in the information-seeking behaviour model on which this study is based. This includes the physical and geographical environment in which the system operates, including the infrastructural requirements needed for the information system to operate.

Nevertheless, despite these challenges that undergraduate students experienced, this did not affect the undergraduates' perceptions or attitudes towards OPAC as the findings revealed that respondents agree that the OPAC search tool is to be trusted to provide reliable information.

5.5. RECOMMENDATIONS

The researcher's recommendations were based on the findings and conclusions to assist UNIVEN management, librarians and OPAC interface developers. The study suggests the following recommendations:

- Most students' awareness of OPAC is average and low. It is therefore recommended that librarians ought to market or promote the importance of using the OPAC information retrieval tool to improve students' level of awareness towards the tool.

- Undergraduates use the simple search option. This shows that they lack advanced search skills. Librarians should provide continuous training to OPAC functionalities: Boolean operators, truncation marks and advanced search. It is

therefore recommended that user education programmes should not only be basic, but should be intensified so that users should know more about other information search options that they are not aware of, and not familiar with.

- The majority of respondents became aware of OPAC during formal library training. It is therefore recommended that formal library training such as library orientation should be supplemented by intensive marketing programmes. Subject librarians should develop LibGuides. These are a content-management and information-sharing system designed specifically for libraries, which allows for easy navigation through an instruction on core and relevant resources in a particular subject field, class, or assignment. By clicking on the links provided, the user is able to access information about the library and to navigate through the university library website.

- The study further found that most respondents have positive attitudes towards OPAC. It is recommended that these positive attitudes be sustained by intensifying library user education programmes and marketing of library services. There is a need for university library management to convince academic top structures to take library training earnestly. The training of undergraduate students about library resources and services only in their first year is not sufficient.

- On the challenges encountered in using OPAC, it was found that slow internet connectivity is a major challenge. Based on this finding, it is recommended that the university management should look into the improvement of bandwidths, not only for the library, but for the university as a whole. The current environments in which people live dictate that everything should be done online, but without a stable internet connectivity, university operations become difficult.
- Further study should be conducted to find out why students occasionally use OPAC.

5.5.1. Recommendation for further research

In chapter two it was mentioned that despite the awareness of OPAC, there are studies that argued that undergraduate students level of awareness is low (Msagati, 2016). Students are using the simple search functionalities of OPAC and the major identified challenge is that most Nigerian students do not make use of the library Catalogue (Ishola and Ojeniyi, 2015: 51). Traditionally libraries would acquire more print information materials; hence, there is a high awareness of availability of print-based information materials over e-resources (Ternenge and Kashimana, 2019).

It is recommended that for further research study on the role of librarians to market and promote usage of advanced search functionality of OPAC to undergraduate students to maximise its utilisation.

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APPENDIX 1: RESEARCH QUESTIONNAIRE

QUESTIONNAIRE

Topic of study: Awareness and usage of Online Public Access Catalogue by undergraduate students at University of Venda, Limpopo Province, South Africa.

INSTRUCTIONS

- Use a tick [✓] to select your answer
- Multiple answers allowed only when stated

Section A: Biographical details

1. Gender of respondents

Male		Female		Other	

2. Age

Less than 19	
20 to 29	
30 to 39	
40 to 49	
50 and above	

3. Level of study

First year	
Second year	
Third year	
Fourth year	

4. School of respondents

School of Agriculture	
School of Education	
School of Environmental Sciences	

School of Health Sciences	
School of Law	
School of Management Sciences	
School of Mathematical and Natural Sciences	
School of Human and Social Sciences	

Section B: Awareness of OPAC

5. How well do you rate your level of awareness with the OPAC system in the library?

	Answer
Very high	
High	
Average	
Low	
Very Low	

6. The extent to which are you aware of Open Public Access Catalogue (OPAC). Please tick the box that best describes your response.

To no extent at all	
To no extent	
To some extent	
To a large extent	
To a very large extent	

7. To what extent are you aware and familiar with the following functionalities on OPAC? Use the following scale or measurement: 1 = To no extent at all; 2 = To an extent; 3 = To some extent; 4 = To a large extent; 5 = To a very large extent.

Feature	1	2	3	4	5
Boolean operators					
Keyword search					
Searching by title					
Author search					

Searching by subject					
Truncation marks					
Advanced search					

8. How did you become aware of OPAC?

My lecturer	
Librarian	
Friend	
During library training	
When browsing through the library website	
Other (please specify	

Section C: Perceptions of UNIVEN undergraduate students towards OPAC

9. Which mode of access to information in the library do you prefer?

Manual	
Shelve browsing	
Librarian assistance	
Internet search	
Google search	
Open Public Access Catalogue (OPAC)	

10. The extent to which you agree or disagree with the following statements about your usage of OPAC at the University of Venda Library. Use the following scale / key: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Statement	1	2	3	4	5
I prefer to use google and other search engines rather than OPAC					
OPAC is the first system of contact when I need materials on my assignments					
Without OPAC, one will not have access to information in the library					

OPAC is difficult to use					
OPAC search tool is to be trusted to provide reliable information					
OPAC requires a lot of time to learn the system, as well as to obtain concrete information					
I have never used OPAC before					

11. How frequently do you use OPAC? Choose one.

Frequency	**Answer**
Daily	
Once in two days	
Once in a week	
Twice in a week	
Occasionally	
Never used OPAC	

12. Which option do you use when conducting a search on OPAC? Choose as many as it may apply.

Author	
Title	
Subject	
Keywords	
Accession number	
Never used OPAC	
Other (Please specify)	

13. Which option do you use when searching information on OPAC?

Simple search option	
Advanced search option	
Both simple and advanced search options	

Never used OPAC	

Section C: Purposes for using OPAC

14. For what purpose do you use OPAC? Use the following scale / key: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

Purpose	1	2	3	5	5
To know the availability of the material					
To update myself on new books in the library					
To know the location of a particular book					
To check if the material required is issued					
To find journals					
To find other non-book materials					
Printing and downloading documents					
Exporting records					
To compile a bibliography for my research topics					

Section D: Challenges encountered in using OPAC

15. What kinds of problems or challenges do you encounter when accessing and using OPAC at the University of Venda Library? **Note: Multiple answers allowed**

Type of problems	**Tick**
Lack of knowledge about OPAC	
Lack of skills in search OPAC	
No output	
Slow speed	
Lack of assistance from library staff	
Lack of computers to access OPAC	
Book not found on selves as indicated by OPAC	
Poor computer skills	
Other, please specify in below	

_____

_____

_____

_____

16. Is the anything that you would like to say about OPAC? If yes, please say it here

    _____

    _____

    _____

    _____

    Thank you very much for your participation.

APPENDIX 2: LETTER FROM TURFLOOP RESEARCH ETHICS COMMITTEE (TREC)

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE

ETHICS CLEARANCE CERTIFICATE

MEETING: 17 June 2020

PROJECT NUMBER: TREC/107/2020: PG

PROJECT:

Title:	Awareness and Usage of Online Public Access Catalogue by Undergraduate Students at The University of Venda
Researcher:	MM Shokane
Supervisor:	Prof ST Bopape
Co-Supervisor/s:	N/A
School:	Languages and Communication Studies
Degree:	Master of Information Studies in Library and Information Science

PROF P MASOKO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

i) **This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.**

ii) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.**

iii) **PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.**

Finding solutions for Africa

APPENDIX 3: LETTER TO UNIVERSITY OF VENDA LIBRARY MANAGEMENT

PO Box 764

Ga-Mothiba

0726

20 July 2020

The University of Venda Management

University of Venda

Dear Madam/Sir

REQUEST FOR PERMISSION TO COLLECT DATA

I am a student registered for Masters Programme in Information Studies at the University of Limpopo. I am conducting research and students of the University of Venda have been chosen as participants in this research. The research topic of my study is: *Awareness and usage of Online Public Access Catalogue by undergraduate students at University of Venda, Limpopo Province, South Africa.*

I hereby request for permission to collect data from library users (undergraduate students in the university). I believe that the results of this study will assist the university library in developing future interventions for students in as far as usage of the library resources and services is concerned. The results of the study will be availed to the library.

Data will be collected though a closed-ended questionnaires. Due to the Covid 19 protocols to avoid contact as far as possible, the researcher intends to send the link to the questionnaire using google form for students to complete. The only thing I need is the contact person who can forward the link of the google form questionnaire to the students.

I undertake that all the information collected will solely be used for the above-mentioned research study. The questionnaire will remain anonymous in that students will not be expected to write their names when completing the questionnaire. The questionnaire will also have a consent form which the participants can accept either to participate or not.

An ethical clearance certificate from the Turfloop Ethics Committee (TREC) at the University of Limpopo is herewith attached, as well as the confirmation letter from the supervisor of the research study. The link to the questionnaire is also herewith attached for your perusal.

Regards

_____ _____

Shokane M.M Date

_____ _____

Witness Date

APPENDIX 4: SUPERVISOR LETTER TO UNIVERSITY OF VENDA REGISTRAR'S OFFICE

17 April 2019

The Registrar

University of Venda

Thohoyandou

Request to conduct research by student

The following is our registered Masters student in the Programme of Information Studies in the Department of Communication, Media and Information Studies: School of Languages and Communication Studies at the University of Limpopo working under my supervision: -

Ms Shokane MM (201403007)

Her research topic is

"*Awareness and usage of Online Public Access Catalogue by undergraduate students at University of Venda, Limpopo Province, South Africa.*"

It is against this background that your most kind assistance to this student to collect data from targeted students for this research project will be most sincerely appreciated. Please also find attached the ethical clearance certificate from the Turfloop Research Ethics Committee.

Kindly allow them to distribute the questionnaires to undergraduate students in your university.

For more clarity on this request, please call me at 015 268 4015. My e-mail address is solomon.bopape@ul.ac.za

Yours collegially

_____

Prof S.T. Bopape: HOD: Media, Communication and Information Studies

APPENDIX 5: LETTER FROM UNIVERSITY OF VENDA ETHICS COMMITTEE (UNIVEN)

Research and Innovation
Office of the Director

Date: 28th September 2020

Shokane M. M

PO Box 764
Ga-Mothiba
0726

Dear Shokane M. M

Permission to conduct Research at the University of Venda

You are hereby granted permission to conduct research at the University of Venda.

The research will be based on your Masters research titled: ***Awareness and Usage of Online Public Access Catalogue by Undergraduate Students at The University of Venda*** registered at the **University of Limpopo.**

The conditions are that all the data pertaining to University of Venda will be treated in accordance with the Ethical Principles and that will be shared with the University. In addition, consent should be sought by you as a researcher from participants.

Attached is our policy on ethics.

Thank you

..... GIEEkosse.....

Senior Prof. G.E. Ekosse

Director Research and Innovation

Cc: *Prof JE Crafford (DVC Academic)*

Cc: *Mrs. MT Mulaudzi (Director: Library Services)*

UNIVERSITY OF VENDA
OFFICE OF THE DIRECTOR
RESEARCH AND INNOVATION
2020 -09- 28
Private Bag X5050
Thohoyandou 0950

APPENDIX 6: COVERING LETTER TO RESPONDENTS

PO Box 764

Ga-Mothiba

0726

17 April 2019

Dear Respondents

I Mashia Martina Shokane student number: 201403007 a student at the University of Limpopo is conducting a study on **Awareness and usage of Online Public Access Catalogue by undergraduate students at University of Venda, Limpopo Province, South Africa.**

I am requesting a few minutes of your time to complete the attached Google form questionnaire. The questionnaire is anonymous; therefore you are requested not to write your name on it. You are also assured that the results of the study will be used only for the purpose of this study.

Your participation in this study is highly appreciated and the findings of the study will benefit the library management in terms of whether or not the University of Venda undergraduate students are aware of and use Online Public Access Catalogue.

If you agree to participate, please sign the enclosed consent form.

Thanking you in anticipation.

Regards

Shokane M.M

APPENDIX 7: CONSENT FORM

UNIVERSITY OF LIMPOPO

ETHICS COMMITTEE

PROJECT TITLE: The Awareness and Use of Open Public Access Catalogue by undergraduate students at the University of Venda, Limpopo province, South Africa.

PROJECT LEADER: Ms MM Shokane and Prof S.T. Bopape (Supervisor)

CONSENT FORM

I, _____ hereby voluntarily consent to participate in the following project: (*it is compulsory for the researcher to complete this field before submission to the ethics committee*)

I realise that:

1. The study deals with _____ (eg. effect of certain medication on the human body) (*it is compulsory for the researcher to complete this field before submission to the ethics committee*)
2. The procedure or treatment envisaged may hold some risk for me that cannot be foreseen at this stage;
3. The Ethics Committee has approved that individuals may be approached to participate in the study.
4. The experimental protocol, ie. the extent, aims and methods of the research, has been explained to me;
5. The protocol sets out the risks that can be reasonably expected as well as possible discomfort for persons participating in the research, an explanation of the anticipated advantages for myself or others that are reasonably expected from the research and alternative procedures that may be to my advantage;
6. I will be informed of any new information that may become available during the research that may influence my willingness to continue my participation;
7. Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research;
8. Any questions that I may have regarding the research, or related matters, will be answered by the researchers.
9. If I have any questions about, or problems regarding the study, or experience any undesirable effects, I may contact a member of the research team;
10. Participation in this research is voluntary and I can withdraw my participation at any stage;

11. If any medical problem is identified at any stage during the research, or when I am vetted for participation, such condition will be discussed with me in confidence by a qualified person and/or I will be referred to my doctor;

12. I indemnify the University of Limpopo and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

_____ _____ SIGNATURE OF

RESEARCHED PERSON SIGNATURE OF WITNESS

_____ _____ SIGNATURE OF

PERSON THAT INFORMED SIGNATURE OF PARENT/GUARDIAN

THE RESEARCHED PERSON

Signed at _____this ____day of _____2019