

THE USE OF ACADEMIC LIBRARY ELECTORIC INFORMATION RESOURCES  
BY SELECTED UNDERGRADUATE STUDENTS AT THE UNIVERSITY OF  
LIMPOPO DURING CORONAVIRUS PANDEMIC

by

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## DECLARATION

I, **Tebogo Phuti Damaris Badimo** student number [REDACTED] declare that the dissertation entitled “**The use of academic library EIRs by selected undergraduate students at the University of Limpopo during Coronavirus pandemic**” submitted to the University of Limpopo for the degree Master of Information Studies is my original work, it was never submitted to any other institution for academic purposes. All the resources that I have used and quoted are duly acknowledged on a complete reference.

.....

TPD Badimo

.....

Date

## **DEDICATION**

This dissertation is dedicated to my late father, **Abraham Phuti Badimo**; my late mother, **Rebone Nankie Annie Badimo**; my daughter, **Phuti Audrey Badimo**; my siblings; **Thomas, Roberta, Flora and Johanna Badimo**, and my former lecturers; **Prof L.A. Makgahlela and Ms M.R. Mahlatji** for encouraging me to enrol for my Master of Information Studies.

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- **Turfloop Research Ethics** office for granting me an opportunity to conduct my research within the premises of the University of Limpopo (UL).
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## **ABSTRACT**

Academic libraries subscribe to Electronic Information Resources (EIRs) yearly to meet the academic information needs of their patrons who live in the digital era. In 2020, a lockdown was enforced in South Africa to reduce the number of COVID-19 infections. Consequently, higher education institutions were forced to close and later obliged to continue with teaching and learning through online means. Students had to attend classes online and were required to use online library resources to complete their academic tasks.

Against the foregoing backdrop, the study investigated the use of EIRs at UL during the COVID-19 pandemic environment. The study was restricted to undergraduate students from the Faculty of Humanities and the librarians attached to the UL library as the target population. The study used both the qualitative and quantitative approaches. An online questionnaire was distributed to the students using the Google Forms questionnaire and was completed by 80 students. Three librarians participated in the study. One librarian participated in an unstructured interview whereas 2 librarians completed the prepared questions for semi-structured interviews that was sent.

A majority of the participants (students) are extremely aware of the multiple EIRs that they could use during the lockdown. Library orientation and information literacy sessions helped the students to become aware of those resources. Most undergraduate students were neither satisfied nor dissatisfied with the services that are offered by the library during the pandemic. Unstable power supply and low internet bandwidth were mentioned as prevalent challenges students face when accessing EIRs. Librarians made electronic information available to undergraduate students despite the challenges such as system outages and internet connectivity. The study concludes that undergraduate students were using EIRs and librarians supported students during the COVID-19 pandemic.

The study recommends that EIRs should be marketed on social media pages, videos for bibliographic instruction sessions should be created and UL faculties should be encouraged to frequently use the institutional repository to upload theses and dissertations for the students to access with ease and convenience. Librarians should

get formal training on how to virtually interact with the students using the university learning management system.

**KEYWORDS**

Electronic Information Resources, COVID-19 lockdown, Undergraduate students, University of Limpopo, Faculty of Humanities, School of Languages and Communication Studies.

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## **LIST OF ACRONYMS**

COVID-19	Coronavirus Disease of 2019
DLS	Department of Library Services
EIRs	Electronic Information Resources
UL	University of Limpopo
SERVQUAL	Service Quality

## CHAPTER ONE

### BACKGROUND AND MOTIVATION

#### INTRODUCTION AND BACKGROUND

Academic libraries utilised Electronic Information Resources (henceforth EIRs) long before the outbreak of Coronavirus. They can be accessed remotely using a computer or mobile devices with internet connection. EIRs form part of information resources because they deliver efficient information to information seekers (Sohail & Ahmad, 2017). Recently, academic libraries transformed collection development policies by including more subscriptions to electronic resources to improve access to scholarly information (Sethy & Jena, 2021). Among the leading providers of subscriptions to e-resources are Emerald Insights, Elsevier, EBSCOhost, Sabinet African Journals and Wiley (Leonard, Hamutumwa & Mnubi-Mchombu, 2020). Sritharan (2018) proffers that EIRs complement print information resources. The evolution of information technology (IT) has compelled researchers to focus more on EIRs. Public non-essential institutions were forced to close down to contain the spread of COVID-19 (Disaster Management Act No 57 of 2002 as amended in 2020). Higher education institutions were closed and had to continue teaching and learning online. Therefore, it was important to investigate the usage of these resources amid the COVID-19 pandemic.

Natarajan (2017) indicates that EIRs play a pivotal role by providing current, 24/7 accessible and comprehensive information. Virtual users are anonymous; however, in academic libraries, students' access EIRs via library websites. They authenticate their identities and eligibility to access the resources by using their details. Academic librarians conduct trainings to assist students to navigate the library website when accessing EIRs. Multiple studies such as, Kumar (2020); Ramesh and Naick (2018); Ankrah and Atuase (2018) and Soni, Gupta and Shrivastava (2018) to name a few were conducted to establish users' awareness, satisfaction, and utilisation of EIRs in academic libraries. However, not many studies have been conducted to establish and understand the use of EIRs and services in academic libraries, especially those operating in rural-based universities in developing countries amid the novel coronavirus (COVID-19). Thus, this study probes the sampled students' use of EIRs during COVID-19.



Most institutions of higher education in South Africa and some parts of the world had to totally shut down and maintain social distancing as one of the lockdown regulations which had to be strictly observed to combat the prevalence of the Coronavirus Disease of 2019 (COVID-19) (World Health Organization, 2020). The institutions had to resort mainly to a multimodal method of teaching and learning as an alternative to face-to-face teaching and learning (Universities South Africa, 2020). These institutions, including UL, had to rely predominantly on the use of technology to remotely deliver their lessons to students. To best serve the students, the institutions even identified students who required electronic devices and data to access online teaching and learning, especially in the academic years 2020 and 2021, respectively. With the provision of these educational tools, the students could receive education in the comfort of their homes as well as learn at their own pace (Allen & Taylor, 2017). The benefits of using EIRs and services include, but are not limited to, convenience of use, 24/7 access to reading materials, and updated information (Osman & Komla, 2021).

Of course, there are challenges associated with remote (online) learning that the students faced. One of the challenges was that online teaching and learning tends to deny the students the opportunities to engage effectively and adequately with their lecturers due to the barriers posed by geographical distance (Bao, 2020). Commendable, however, was that institutions of higher learning at least strove to ensure that there was access to free information about COVID-19 on their websites and portals (Petersen, 2020). This information enabled students and researchers to not only be updated about the trends of the pandemic, but also to be kept abreast about how to comply with the rules and regulations instituted to combat the pandemic. This is unsurprising given that the institutions have academic libraries which collect, organise and disseminate the relevant information to the relevant users timeously (Okike, 2020). Therefore, with the implementation of remote online learning, students were obliged to access library electronic resources through their devices instead of physically visiting the university library to borrow books and other library materials.

Given the heavy reliance on EIRs and services during the pandemic, it was imperative to investigate users' awareness and subsequent use of EIRs and services provided by academic libraries. It was also important to look into how academic libraries

supported students towards accessing EIRs and services during the pandemic. It was envisaged that academic libraries would benefit from the responses provided by the participants (students) in this study in terms of how they use EIRs. Perhaps, this study's findings might propel UL library to invest more in EIRs. One proffers this view having noted that academic librarians need skills to digitise library materials, manage institutional repositories and websites, create podcasts and videos of library training to support the tech-driven generation of students. This study focused solely on the UL library.

## 1.2. STUDY CONTEXT

UL was formally the University of the North. University College of the North was established in terms of the Extension University Education (Act 45 of 1959) under the apartheid regime policy that established ethnically based higher learning institutions. This law enforced Bantu Education, which was a system of educational exclusion based on race. In 1969, the South African Parliament publicised the University of the North Act (Act No. 47 of 1969) that brought an end of the college position as of 1 January 1970. The University of the North merged with the Medical University of Southern Africa (MEDUNSA) in 2005 to form UL. The combination resulted in the formation of four faculties, namely; Health Sciences, Humanities, Management and Law, and Science and Agriculture, which serve an average of 22 000 students. In 2015, the two institutions uncoupled and Turfloop campus retained the name, University of Limpopo, while MEDUNSA was renamed Sefako Makgatho Health Sciences University. The four faculties comprise schools, which consist of various departments and programmes. There is a wide range of qualifications offered in the schools.

Majority of the students at this university reside in rural areas around Limpopo and Mpumalanga provinces. International students largely come from Zimbabwe, Botswana, Swaziland and Namibia. Majority served by UL are from rural areas around Africa and SADC countries where the provision of services is not the same as that of urban areas. Economic Commission for Africa (2011) and Jain (2016) report that African countries are still characterised by a low penetration of Information and Communication Technologies (ICTs) due to inadequate Information Technology

infrastructure. At UL, students are defined as registered individuals who are studying towards either an undergraduate or postgraduate degree.

The UL library and information services encompasses one campus library situated at UL campus, Mankweng College of Nursing and Polokwane Hospital. The latter two libraries are regarded as branch libraries, which house information resources and services on health sciences. UL library and information services acquire, organise and provide access of information for use by students and university staff for teaching, learning and community development. Information services, interlibrary loans, photocopying, 24 hour reading space, ordering library materials and short lending are among the services offered by UL library and information services (UL Library, 2021).

It is documented in the UL Library and Information Services Policy (2018) that the academic library should play an active role as the provider of information needed for teaching, learning and research. UL library is, therefore, also expected to continuously find ways to contribute efficiently to learning, teaching and research by easing access to global information. Given the nature of academic staff and students' dependence on electronic information during the pandemic, the establishment of a virtual UL library has become central to its mandate. The databases that UL library subscribes to include bibliographic and full texts. There are electronic resources that can be accessed both on and off campus. The library established an institutional repository that houses electronic dissertations, theses and research papers that are published at UL and affiliated institutions. To ensure that users utilise electronic resources efficiently, UL library and Information Services provide online and face-to-face training on the use of the library catalogue, reference organising tool, plagiarism detection tool and guidelines on how to use databases.

### 1.3. RESEARCH PROBLEM

The research problem of the study is defined as the general matter addressed in the study (Pardede, 2018). Disaster Management Act had regulations to contain the spread of COVID-19 (Disaster Management Act No 57 of 2002 as amended in 2020). The COVID-19 pandemic brought numerous changes to people's lives, counting even those in academic institutions. With the lockdown regulations enforced, institutions of

higher learning have had to rely largely on the academic library to provide access to information and services electronically even during the pandemic (Disaster Management Act No 57 of 2002 as amended in 2020). As noted by Cox (2020), academic libraries spent years curating digital content and developing web services which must have been ready and available to deliver successfully even during the pandemic. In fact, Ifijeh and Yusuf (2020) aver that numerous academic libraries across the globe embraced the use of social media to market and deliver information to students due to lockdown regulations. It is therefore imperative to assess how the UL academic library has responded to the pandemic in its provision of information resources and services. This can be achieved largely by measuring students' awareness and use of the library's EIRs as well as by identifying the hurdles they encounter when accessing EIRs and services. The fact that UL serves students from rural communities is borne in mind throughout the study. Most UL students coming from rural areas is a significant aspect because such areas are generally affected by weak internet connectivity and poor network coverage. The study will provide some remedial interventions that can be implemented to minimise the challenges associated with information access and use in UL library.

#### 1.4. PURPOSE OF THE STUDY

##### 1.4.1. Aim of the study

This study aimed to examine the use of the EIRs at the UL library amid the COVID-19 pandemic environment.

##### 1.4.2. Objectives of the study

To achieve the aim of this study, the objectives of the study were:

- To determine the awareness levels of undergraduate students of EIRs at UL library.
- To identify the extent to which undergraduate students use the EIRs at UL library during the COVID-19 pandemic.

- To assess students' satisfaction with the use of library EIRs and services at UL during the COVID-19 pandemic.
- To identify the challenges experienced by undergraduate students in using EIRs at UL during and after the COVID-19 pandemic.
- To establish the types of EIRs the library made available to students amid the COVID-19 pandemic.

## 1.5. SIGNIFICANCE OF THE STUDY

Several studies have been conducted in academic institutions to understand awareness, satisfaction, and usage of EIRs. However, the studies that focus on the use of electronic library resources by students at UL, particularly during the COVID-19 pandemic are still minimal. Studies published on the use of electronic library resources by postgraduate and undergraduate students are often general and not specific to a certain setting, especially one that has been affected by a pandemic. This study provides a detailed report on undergraduate students' familiarity with and use of electronic resources and services. The study sheds light on how an academic library strives to improve on user experience. The study will add to the body of knowledge by providing library users' statistics, highlighting levels of use, satisfaction, awareness, and challenges faced by students when accessing electronic resources (Moyo, 2017), all of which will be helpful to both the students themselves and the librarians who serve them. To ensure that this study is beneficial to UL library and the students, the researcher will ensure that the study is helpful in the following ways:

### 1.5.1. Impact on library operations

Given that COVID-19 has led to organisations, including academic libraries, adapting to new ways of operation and doing things, it is important to investigate how UL library provides support to the students during the pandemic. Looking into how UL library responds to the pandemic might help the library to improve its library services. Put succinctly, this study will inform the UL library about users' level of awareness and satisfaction when using electronic resources and the level to which students utilise electronic resources.

### 1.5.2. Recommendations from findings

Recommendations will be made based on the study's findings and shared with UL library hopefully for use as a guide towards addressing students' needs and challenges to improve their access to electronic resources. Students' challenges in accessing electronic resources might be better addressed in light of the needs of the communities within which the students reside.

### 1.5.3. Impact on research expertise and knowledge contribution

The researcher intends to write and submit papers on the subject under investigation for publication and presentation in accredited academic journals and at conferences. The study will also broaden the scope of knowledge in the Library and Information Science field.

## 1.6. DEFINITION OF TERMS

### 1.6.1. Coronavirus Disease of 2019

According to WHO (2020), Coronavirus Disease is one of the contagious diseases caused by the recent (2019) outbreak of coronavirus. The virus causes a respiratory illness. It spreads through saliva droplets or discharge from the nose. It is defined in this study because it has caused most higher education institutions to offer their education content strictly online (Adnan & Anwar, 2020). Academic libraries had to readjust their services to accommodate online learning and ensure there is easy access to electronic resources and services (Guo et al, 2020).

### 1.6.2. EIRs and services

EIRs and services are broadly defined as any information that can be accessed through computers, laptops, mobiles and tablets (Dolo-Ndlwana, 2013). EIRs comprise databases, electronic books, electronic journals, electronic newspapers, electronic magazines, archives, electronic theses, conference proceedings and government gazettes. The definition is provided to give the reader an idea of what library electronic resources and services are and how they are accessed. In this study, attention is given to library EIRs and services to understand their utilisation by

students. Library EIRs and services and EIRs and services are used interchangeably in this study.

### 1.6.3. Academic library

An academic library is a key point of accessing information in higher learning and teaching institutions (Allen & Taylor, 2017). An academic library provides access to information resources in higher education institutions. It subscribes to different EIRs and makes them available to students and staff members. This type of library is an important element in the study because it delivers EIRs and services to students.

## 1.7. RESEARCH METHODOLOGY

This section defines and describes the research paradigm, research approach, research design used, target population, sampling and data collections methods adopted. Concisely, a research methodology describes how the problem was investigated (Moyo, 2017). This study followed the post-positivism research paradigm. Both the qualitative and quantitative research approaches were adopted, followed by the descriptive research design. The population of the study was undergraduate students from the Faculty of Humanities, in the School of Languages and Communication Studies who were enrolled in the academic year 2021. Librarians were included in the study to understand the type of EIRs that are made available to the students by the UL library during the pandemic. Stratified and systematic sampling methods and techniques were used to sample the students. Purposive sampling was applied to select librarians at UL library. Data was collected using an online questionnaire, which was completed by undergraduate students while interviews were held with librarians.

## 1.8. ETHICAL CONSIDERATIONS

Ethical clearance to conduct the research was sought from the Turfloop Research Ethics Committee at UL. Letters to request permission to collect data from students were sent to the University Registrar and the Executive Dean of Faculty (Humanities). The last letter was directed to the University of Limpopo library's Director to seek permission to interview the librarians. Therefore, this research involved human beings as research subjects; hence, it was important to adhere to ethical procedures that

guarantee the participants' anonymity and confidentiality. Participants completed an informed consent form and were made aware of the purpose of the research prior to their involvement in the study. To ensure that the research produced quality findings, reliability and validity were utilised to rigorously check the authenticity of the online questionnaire. Findings presented in this study were objective. The researcher allowed constructive criticism to improve the credibility of the study as well confirming that the results were free from bias.

## 1.9. STRUCTURE OF DISSERTATION

The dissertation is organised according to five chapters thus:

**Chapter one: Background and motivation:** This chapter presents an introduction to the research and its context. It includes the aim and objectives of the study. Methodology, scope, limitations and the significance of the study are also elucidated in this chapter.

**Chapter two: Theoretical framework and literature review:** The chapter discusses the theoretical framework that was followed in the study. Existing literature published in international countries, Africa and South Africa are reviewed based on the objectives of the research.

**Chapter three: Research methodology:** The chapter discusses the study's research methods, which consist of the research approach, design, population and sampling, data collection instrument and ethical considerations.

**Chapter four: Data presentation, analysis and interpretation of findings:** The chapter presents, analyses and discusses the data abetted by the use of graphs, charts, themes and previous literature on the topic of this study.

**Chapter five: Summary of findings, conclusions and recommendations:** The chapter discusses the findings presented in Chapter four. It also makes recommendations considering the findings on the use of academic library EIRs by selected students at UL during COVID-19 pandemic.



## 1.10. CHAPTER SUMMARY

This chapter introduced the research, its context and its motivation. Furthermore, the research problem, objectives, significance of the study, scope and limitations were discussed. Lastly, key terms were defined in the context of this research. The next chapter discusses theories undergirding the study and the literature reviewed.

## CHAPTER TWO

### THEORETICAL FRAMEWORK AND LITERATURE REVIEW

#### 2.1. INTRODUCTION

This chapter elucidates the adopted theoretical framework for the study and its relevance to the study. The second section of this chapter reviews previous studies conducted at international, national and local levels on the use of electronic library resources and services by students. A literature review is described as the scrutiny, critical evaluation and fusion of obtainable knowledge relevant to one's research (Hart, 2018).

#### 2.2. THEORETICAL FRAMEWORK

Stewart and Klein (2016) view theory as an explanation of a phenomenon that plans to critically examine and objectively deliver relevant findings of a research. Grant and Osanloo (2014) perceive theoretical framework as a guide, and support to the study. Such a framework should be aligned with the research problem, significance and the study's purpose. Theories discussed in the study include the Service Quality Model and the Comprehensive Information Seeking Model.

##### 2.2.1. Service Quality Model

The model fits best within the marketing field while the Comprehensive Information Seeking Model is utilised in organisational studies. Libraries derived Library Quality (LibQual) from Service Quality (SERVQUAL.). Its aim is to track users' opinions on service quality (Association of Research Libraries, 2020). For this research, the Service Quality Model was selected because it includes key aspects that better describe how customers and users perceive organisations' service quality. Key aspects on Service Quality Model are reliability, tangibles, responsiveness, empathy, and assurance. The aspects enabled the researcher to assess the students' satisfaction towards EIRs. Students were asked questions that addressed the five dimensions of SERVQUAL model such as empathy that was addressed by checking if students were satisfied with the support received from librarians.

The appropriate approach to evaluate an organisation's quality of service is by measuring its clients' perception of quality (Parasuraman, Zeithaml & Berry, 1988). Parasuraman et al. (1988) developed the multiple-item scale for assessing service quality. Perceived quality is the consumers' judgement about the entire service (Snoj, Korda & Mumel, 2004 as cited in Marakanon & Panjakajornsak, 2017). The model was rigorously analysed in stages for it to measure what it is intended to measure. The first stage describes the development of item scale, the second stage focuses on data collection and the refinement of the scale item. The third stage provides an analysis, and the authenticity of the scale item. The fourth stage assesses the viability of the scale. The last stage discusses the application of this item scale in an organisation. The investigation disclosed criteria revealed by consumers to assess service quality. Initial dimensions that are discovered from the customers were reliability, communication, tangibles, responsiveness, security, credibility, courtesy, competence, knowing and understanding the customer and access (Parasuraman et al., 1988). These ten dimensions were utilised as a service quality structure from which SERVQUAL scale was extracted.

Refinement was done through data collection to purify the 97 item-scale (Parasuraman et al., 1988). Several items were removed after the refinement and there were five dimensions that remained visible. Those dimensions were reliability, tangibility, responsiveness, understanding a customer and access. The remaining five dimensions, namely; credibility, security, communication, competence and courtesy, were grouped together to form a distinct item. A second stage of refinement was done, and an investigation led to the finalisation of the five dimensions of SERVQUAL. Three dimensions are original and two are grouped together. The final five dimensions are reliability, tangibles, responsiveness, empathy, and assurance. The last two dimensions, empathy and assurance, stand in for communication, security, credibility, courtesy, competence, understanding access and customers (Parasuraman et al., 1985).

Parasuraman et al. (1988) further highlighted that these five dimensions can be rephrased to make them suitable to the environment within which the instrument will be utilised. The University of Witwatersrand (2020) adopted Parasuraman et al.'s (1988) submission and unpacked the meaning of the dimensions. Reliability is about

providing consistent service and current information that users can depend on. Secondly, assurance is concerned with librarians' confidence to assist clients. Thirdly, tangibles are based on the physical elements of the service such as the library website. Empathy is librarians' ability to show care and attention to clients. Lastly, responsiveness focuses on the librarian's willingness to provide prompt services to the users.

This model was built on careful investigations that were accompanied by an extreme and repetitive data collection process. It has shortcomings when used in other business sectors; however, it has depicted good usability when employed in the information services sector (Handrinios, Folinias & Rostios, 2014). Mi, Zhang, Wu and Wu (2020) note that librarians started using Microsoft Teams and other platforms to deliver library workshops. They also highlighted the use of social media to promote library services such as e-books and electronic databases.

SERVQUAL dimensions, more especially the responsiveness dimension, was helpful in examining how the library has responded to the need to provide electronic resources and services to students during the COVID-19 pandemic. The model also assisted the researcher in measuring students' satisfaction with library electronic resources and services amid COVID-19 pandemic.

### 2.2.2. Comprehensive Information Seeking Model

A model is a graphical pattern for thoughts about a perceived issue and may be developed into a statement of relationships among theoretical recommendations (Rather & Ganaie, 2017). Robson and Robinson (2011) attest that many theories in library and information services are still at a modelling phase. Models are treated as proto theories by library and information services scholars in which one can distinguish relationships between ideas. Models can be tested to verify their reliability and validity. Before students can start seeking information, they need to be aware that they need information. Information need is an individual or a group's longing to find information (Tubachi, 2018). The process of locating information with a goal in mind is called information seeking behaviour (Garg, 2016).

Johnson, Donohue, Atkin and Johnson (1995) illustrate that there are predecessors that trigger information seeking process. The four primary predecessors are derived

from the Health Belief Model and the Gratification Perspective. They are described as demographics, personal experience, beliefs and salience. Demographics has to do with age, gender and the level of education. An organisation's workforce is diversified by age, gender, race and level of education, among others. Johnson et al. (1995) formed stated that of all the demographics pointers that are embraced in an organisation, the level of education is the main factor that contributes to the type of information that users want to access. Education enables information users to search technical information and critically understand the demerits of information systems they use to search for information. Personal experience includes the tenure of users in an institution, and it is related to the information seeking process. This is visible in the academic institution as first year students are not searching the same information as final year students. The level of technical knowledge rises as students continue to study in an institution. Salience is perceived as users' application of information to the problem faced. Trust and faith that a user is seeking information is recognised as a belief.

Johnson et al. (1995) highlight the importance of an information carrier in the process of seeking information. An information carrier is also known as an information source in the Library and Information Service sector. Hence, Chatterjee (2017) defines an information source as an object that carries information. Information carriers are evaluated before usage so that they can fill an information gap. Credibility and diversity of information carriers matter in the information seeking process. Users need to believe, rely, and trust the carrier of information that will fulfil their information needs (Ahmad & Jan, 2019). A good representation of ideas on the carrier assists users to understand ideas well. The structure of information and the tone of the medium of communication has a big effect on shaping information-seeking actions of users (Johnson et al., 1995). Han et al. (2010) argue that the primary goal of seeking information is that the information delivered in the right content should solve the users' exact problem based on their background and perceptions. The model enabled the researcher to scrutinise the attitudes, experiences, and demographics that motivate students to search for information, the awareness of students towards the information carriers and the challenges encountered when using the content of EIRs.

## 2.3. LITERATURE REVIEW

Molokisi (2019) asserts that the main purpose of a literature review is to acquire an understanding of and insights on a research topic, such as the use of EIRs and services. Previous studies that were consulted ranged from electronic books, electronic journals, and students' research articles to library websites. The literature was reviewed in accordance with the research objectives. In every reviewed study, the researcher stated where the study was conducted, data collection instruments utilised, or research designs followed. Furthermore, the researcher considered both the findings reported in previous studies before and during COVID-19 pandemic.

### 2.3.1. Electronic resources and services in the academic library during COVID-19

Academic libraries in developing and developed countries across the globe have remarkably provided resources and services to users amid COVID-19. Though developing countries encountered challenges, they still managed to deliver library services and resources to users. Rafiq, Batool, Ali and Ullah (2020) conducted an exploratory study on academic libraries' rejoinder to COVID-19 in Pakistan. The study revealed how university libraries in Pakistan, which is a developing country, managed to deliver library resources and services to academics during COVID-19. It was found that paper-based resources were digitised for easy access. That libraries were available 24/7 showed that librarians wanted the working hours to be redesigned and employee wellness support to be on standby to provide mental support in difficult times.

New services for sharing in academic libraries were designed. Tamaro (2020) conducted a study on the library and COVID-19 in Italy. Italian academic libraries utilised the interlibrary loan system to share research articles, book chapters and periodicals. A new service called Resource Sharing COVID-19 in the section of International Federation of Library Associations and Institutions Resource Sharing and Documents Delivery (RSDD) was established to meet the users' needs. Social media sites were used to deliver information instead of merely interacting with users.

Mehta and Wang (2020) indicate that librarians at Bridgewater State University in Massachusetts had to come together and alert users about the changes in the

provision of services on the library's website. Instruction sheets were uploaded onto the library's website to assist students to configure different search engines before searching information. An observational study by Yu and Mani (2020) found that medical health sciences libraries in the United States attached links of databases and online resources that offer free information about COVID-19 on the library's website. Furthermore, COVID-19 real-time data about cases was visualised on the library's website. The results of the study indicate that 90% of the webpages easily were accessible and Medical Health Science Libraries worked around the clock to provide research support to health workers.

Several institutions implemented digital libraries before COVID-19, such as the National University of Lesotho library (Mbambo-Thata, 2020). The National University of Lesotho Academic Library developed a tool named Remotex to monitor off campus access to the digital library. The academic library assessed their response to COVID-19 based on the state of readiness to deploy Remotex as a digital library as well as its adaptability and students' willingness to utilise it. Utilising reflective practice methodology, the results indicate that the tool was deployed successfully, and students enjoyed accessing online resources and services remotely.

A similar study was conducted by Fasae, Adekoya and Adegbilero-Iwari (2020) in Nigeria using a descriptive research design. Majority (87,96%) of the researchers, students and university staff members accessed library resources and services online as Nigerian higher education institutions were closed due to the spread of the virus. Access to digital libraries and online resources appeared to be a common feature highlighted in many studies. South African higher education institutions such as the University of Pretoria, University of Witwatersrand and University of Cape Town, provided online resources and utilised social media and university emails to communicate.

### 2.3.2. Students' awareness of academic libraries electronic resources and services

Awareness is the first stage before utilisation, without which utilisation will not be possible (Moyo, 2017). Academic libraries are focusing more on digitising library resources and funds are spent on subscribing to new resources and services. Bajpai and Sharma (2017) conducted a study on the awareness and use of electronic resources in special libraries of Delhi. Using structured questionnaires as a data

collection tool, researchers were able to decipher findings. It was found that the majority of students were aware of full text electronic databases, bibliographic databases and online books and journals. Few researchers are aware of the institutional repository and electronic standards. Though research was carried out in a special library, the findings are related to this inquiry because academic libraries have the same electronic library resources and services that are found in special libraries. Ananda, Tejashwini, Akshatha and Jagdeesh (2017) performed an awareness study on undergraduate and postgraduate students in Bangalore and found that a majority (81%) of the students are aware of electronic resources and services. Wang and Bai (2016) collected data using questionnaires and semi-structured interviews. The awareness level of students in China was very low. Students highlighted the barriers encountered when using electronic books, among which were lack of proper training, unsuitability for in depth reading and online rights management. Kwadzo (2015) conducted a study on students' awareness of electronic databases in the University of Ghana using a survey. It was found that students were quite aware of the electronic databases and that they were using them. However, the students were unfamiliar with the ones relevant to their field of study. Advancement in Information and Communication Technologies and research collaboration in higher institutions made academic libraries to reimagine and transform access to information.

Electronic resources and services augmented the traditional method of accessing information, which is generally paper-based and face-to-face. Osinulu (2020) conducted a study at a state university in Nigeria on students' awareness and use of electronic resources. Using the descriptive research design, the researcher found that a significant number of students were not well-versed with electronic resources. Lack of knowledge resulted in less awareness on electronic resources (Osinulu, 2020).

Moyo (2017) conducted a study at the University of South Africa (UNISA) using a descriptive survey as a research design and found that most students were not aware of electronic resources available in the UNISA academic library. Moreover, they do not receive communication from the library. Some students do not know their subject librarian and rely on different search engines to search information. The researcher further highlighted that the findings are impacted by the fact that UNISA is an open-distance learning and serves geographically dispersed students most of the time.



Atsango (2015) utilised the qualitative approach to determine the reasons behind students' usage of electronic books at the University of Witwatersrand. Friends and library catalogue made students aware of e-books. Unlimited access to e-books is one of the benefits that students enjoy when using e-books. The qualitative research approach has afforded the researcher an opportunity to capture special and opulent data. Majority (28%) of the students were made aware of e-books by their friends, 23% of students was through library orientation and 19% was through the lecturers. The study also traced back and found that previously, information literacy classes were not compulsory. However, information literacy classes are now compulsory, and the researcher believes that classes will increase the level of awareness.

### 2.3.3. Usage of academic libraries' electronic resources and services by undergraduate students

Academic libraries subscribe to electronic resources such as e-journals, databases and e-books for students and staff to utilise them. User Interface and User Experience (UI/UX) were established to simplify how users interact with software and systems. Students utilise interfaces when using e-resources and interact with those interfaces (Roth, 2017). Soni, Gupta and Shrivastava (2018) discuss the usage of electronic resources amongst library and information science students at Jiwaji University in India. Using a survey to collect data, the study outlined that a great number of students use electronic resources. Humanities students utilise electronic resources at the start of research when developing research topics and ideologies. Taiwan humanities students use electronic books and later check traditional books for verification purposes (Chen, 2019). Detailed interviews enabled Chen (2019) to find that humanities students use electronic books when generating ideas for the research and then consult classic traditional books to authenticate the information checked on electronic books.

Hendal (2020) investigated the use of electronic resources and services during COVID-19 in Kuwait University. The researcher's focus was on lecturers, research assistants and other scholars from the faculty. Due to the intense research and reading that is required from those scholars, the researcher recorded that there was a sharp increase on the use of electronic resources and services. It was also found that non-

users wanted to know more about electronic resources so that they can use them. More training for non-users will encourage them to start using electronic resources.

A comparative study by Bana, Eze and Esievo (2019) suggests that computer science students use information resources more than library and information science students at Nigerian universities. Furthermore, the use of questionnaires enabled the scholars to find that some electronic resources are used lightly. This was because most first year students from Nigerian universities come from previously disadvantaged communities where access to technology is not equally distributed. They further stated that the use of e-reference resources, databases and online newspapers was at a minimum and that this could be the result of a lack of information literacy training planned for undergraduate students. University libraries in developing countries have embraced the use of electronic resources even though the distribution of technological resources differs in terms of locations, case in point being Greater Zimbabwe University (Mawere & Sai, 2018).

Sejane (2017) relied on self-administered questionnaires and semi-structured interviews to conduct a study on academic libraries under the Lesotho Library Consortium. Findings disclosed that majority of students and staff used EIRs. Many students and faculty members used EIRs for assignments, recreation, and research. The frequency with which electronic resources were used was low. Conditions highlighted that hindrances to the use of electronic resources were difficulties in accessing e-resources off campus and access control. They also discovered that most students are using library electronic resources, but are disappointed that some e-resources require them to subscribe to a library web page to gain access.

Maya (2018) researched the use of electronic resources at the University of Fort Hare's library services. The researcher provided a high-level view on the use of EIRs in developing countries by students. One of the key points that the researcher highlighted was that students prefer to use keywords to search for EIRs and are less likely to use the date of publication. Several articles were reviewed that investigated the use of electronic resources on undergraduate and postgraduate students.

Tlakula and Fombad (2016); Moyo (2017) discovered that students mostly use search engines such as Google and online encyclopaedia called Wikipedia, thinking that they

are EIRs. It is not surprising as the results indicate that 49.7% of students are aware of EIRs. These are not regarded as scholarly EIRs. These studies conducted in South African universities have proven that internet search engines care less about the authenticity of the information shared. International and local studies have revealed that lack of information literacy training and less marketing of EIRs contribute to the limited use of EIRs.

Fakoya and Fakoya (2019) researched on the use of the library by accounting students, comparing University of South Africa and UL using survey research design. Fifty-one percent of undergraduate students in accounting were successful in attempting to use electronic journals. A significant number (32%) of students were neither successful nor unsuccessful in using electronic journals, as they still rely on lecturers' recommended textbooks.

#### 2.3.4. Students' satisfaction with academic libraries' electronic resources and services

Academic libraries always strive to meet or go beyond students' expectations (Kadir, Ab Ghani, Bakar, Bunawan & Seman, 2016). Elshami, Taha, Abuzaid, Saravanan, Kawas and Abdalla (2021) conducted a study on students' satisfaction on online learning during the COVID-19 pandemic at the University of Sharjah. Based on the findings of the study, 47.5% of students are satisfied with the flexibility that comes with online learning. Online learning also enabled students to use the library's electronic resources and services for information. The flexibility includes having access to the library's electronic resources and services on and off campus and there are no data charges for accessing electronic content. However, 35.2% of students were not satisfied with the time it takes to download electronic information and lack of communication from instructors and information specialists.

Binu and Baskaran (2017) conducted a survey to solicit information on user satisfaction with the use of electronic resources. They discovered that 75% of the students are satisfied with the library's electronic resources and have a significant impact on their academic work. Wagwu and Obuezie (2018) discovered that when Nigerian students have access to electronic resources and use them, they will be satisfied regardless of age, gender and field of study. Fakoya and Fakoya (2019) utilised the Expectation Confirmation Theory to understand students' satisfaction with the use of library. This explanatory tool postulates that if expectations are met

positively, the party will be satisfied. On the contrary, if expectations are not met, the party will be dissatisfied. The Expectation Confirmation Theory purports that a frequent use of services is determined by satisfaction with prior service. This theory confirms that when students receive a great service on the library's website and continuous support from the librarians, they will be satisfied and frequently use the library's resources.

Makwanya and Oni (2019) used a case study at the University of Fort Hare to unearth students' preference between electronic books and print books. They found that 61.5% of students are satisfied with using electronic books because they get enough information to meet their academic needs.

#### 2.3.5. Challenges encountered by students when using the academic library's electronic resources and services

The lockdown in South Africa resulted in most universities implementing online learning with the intention to cover the curriculum. Students had to use their personal or borrowed gadgets to learn remotely. Heng and Sol (2020) show that technology infrastructure, socioeconomic elements, too much work, adaptation and compatibility are identified as major problems students face during the pandemic when accessing college content electronically. These scholars further provided scenarios where students do not have reliable internet connection because they reside in rural areas. Most students from rural areas do not afford broadband connections and laptops. Internet issues and socio-economic factors also form part of the challenges. Alsadoon (2020) could not ignore health and navigation issues students face when using electronic resources. Hence, Alsadoon (2020) investigated different challenges students face when utilising electronic resources at Saudi Electronic University. Contrary to other researchers, the scholar found that students found it difficult to make notes on electronic resources, suffered eye strains eyes, with some students ending up having problems with their eyesight. Some electronic books cannot be opened on all browsers, requiring students to install certain applications to open certain electronic resources.

Ugwu and Orsu (2017) utilised both the qualitative and quantitative approaches to uncover the challenges that undergraduate students encounter when accessing e-

resources. The study outlined that most (80%) of students do not have personal computers and reliable mobile devices with which to access e-resources. Poor network connectivity and unreliable power supply was also recorded as of these challenges. Nnadi (2016) also discovered that undergraduate students find it difficult to access electronic resources and services because they do not afford personal laptops. Slow internet connectivity and intermittent power-cuts are some of the challenges most students encounter when accessing electronic resources and services. Sohail and Ahmed (2017) investigated the challenges faced by undergraduate students with the use of survey. They found that 5.71% of students are complaining about a lack of cooperation by the library staff and 6.42% complain about slow downloading process.

Ifijeh and Yusuf (2020) conducted a study on COVID-19 and the future of Nigerian's university systems. The main purpose of the study was to question the relevance of libraries during the COVID-19 pandemic. Nigerian's university libraries faced challenges when delivering services during the pandemic. It was found that academic libraries do not have websites to market information resources, had a lack of skilled workers, poor technological infrastructure, lack of funding and academic employees regard librarians as support staff. Challenges outlined in Nigerian university libraries indicated that not only students faced challenges when accessing library materials during COVID-19, libraries also could not reach out to their clients due to the challenges they are facing.

South Africa is also not immune to some of the foregoing obstacles, such as lack or insufficient technology infrastructure, personal devices, funding issues, health issues and intermittent power cuts. Kahn (2013) conducted a study to understand the growth of electronic resources in Western Cape universities. The survey method assisted the researcher to find that more students (69,99%) are not using electronic books because libraries do not communicate about them. This implies that there is no open communication between students and libraries on the availability of electronic books. Academic libraries rely on suppliers for electronic resources and often, the library website has a link that directs users to the suppliers' content. Sometimes, the supplier does maintenance on the site and forgets to alert academic libraries about downtime, which poses a challenge to students because they will find errors when trying to retrieve electronic information (Conyers, Lambert, Wong & Jones, 2017). A significant

number (96,59%) of students mentioned that access to electronic books is an issue. They want to access books anytime regardless of their geographical location. Some of the e-books have restrictions on making notes (Kahn, 2013).

#### 2.4. CHAPTER SUMMARY

This chapter discussed the Service Quality Model and Comprehensive Information Seeking Model as the study's theoretical framework. Previous studies on issues related to the present study were reviewed systematically as guided by the research objectives. The review focused on the challenges that students faced when using electronic resources and services, the use of electronic resources and services, their satisfaction and attitudes toward them, and the electronic resources and services made available by academic libraries during the pandemic. It was noted that it is important to constantly understand users' needs and provide virtual resources and services that are useable even though socio economic factors and technology are still major challenges. The next chapter discusses the research methodology employed in the study.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1. INTRODUCTION

This chapter discusses the research methodology of this study. It covers the research paradigm, research approach, research design, population, sampling, data collection, data analysis and the quality criteria (reliability and validity) of the study. The research methodology entails the techniques used by the researcher to find answers to the research questions (Kumar, 2019). “It provides guidelines on a set of methods, and practices that can be applied on a specific case” (Igwenagu, 2016). Ahmed, Opoku and Aziz (2016) in consensus with Buchanan and Bryman (2007) aver that when selecting a research methodology, one should take into consideration the aim of the research, previous research related to the topic and epistemological concerns.

#### 3.2. RESEARCH PARADIGM

Rehman and Alharthi (2016); Blaikie and Priest (2017) define research paradigm as a researchers’ way of viewing and making sense of the real world. Blaikie and Priest (2017) proffer that although it is difficult for social science researchers to reduce subjectivity in scientific research, they must, however, adopt a certain view and stand somewhere with it. Therefore, a research paradigm is the conceptual lens through which scholars scrutinise the methodological facets of their project to determine the research methods that will be utilised and the process of analysing data (Kivunja & Kuyini, 2017). Epistemology, ontology, methodology and axiology are four elements of the research paradigm. Held (2019) briefly defines epistemology as the knowledge and the essence of nature, whereas ontology is the nature of the reality. Axiology is the ethical procedures that need to be considered during the planning stage of research. Methodology encompasses the research design, approaches and procedures used in the inquiry (Held, 2019). Research paradigms can be grouped into three categories, namely; positivist, interpretivist or critical theory paradigms. The fourth paradigm, pragmatic paradigm, borrows components from these three taxonomies (Kivunja & Kuyini, 2017).

Positivist supporters choose a scientific method to generate results (Rahi, 2017). Bonache and Festing (2020) analysed the positivism approach and discovered that it is common to make assumptions that models and relations of variables understand things and that the role of the researcher is to provide clarifications through generalising techniques. Park, Konge and Artino (2020) state that positivists hold the belief that knowledge should be developed objectively. Researchers' values should never influence the process of knowledge development. Ryan (2018) says that knowledge that is proven by science is authentic knowledge; therefore, science should be unbiased. In essence, theory develops a hypothesis that can be tested and proved; knowledge is gained by gathering facts.

Interpretivism is more concerned with in depth attributes (Alharahsheh & Pius, 2020). Interpretivists believe that a single event can have multiple interpretations rather than a single truth that can be determined through a data quantification process (Pham, 2018). Interpretivism paradigm is subjective and favours more qualitative methods rather than quantitative research (Packard, 2017). Critical theory paradigm exponents assume reality exists, but it is formed by cultural, political, religion, gender and ethnic factors, which interrelate with each other to develop a social system (Rehman & Alharthi, 2016). Critical theory, also known as advocacy paradigm, emphasises that research inquiry should be intertwined with political and social issues (Rahi, Alnaser & Adb Ghani, 2019). It is subjective in its nature because it exposes injustices after understanding the social and political factors in a situation that is researched. The aim of this paradigm is to change the society once more information is gathered about it. It is effective in cases where the agenda seeks to transform and address inequality, oppression, domination, suppression and alienation (Rahi, 2017).

Pragmatism paradigm embraces several methods and approaches (Kaushik & Walsh, 2019). Pragmatism paradigm holds the notion that reality changes. Different people have different world views, and their experiences are not identical. Furthermore, pragmatists believe that apart from real life experiences, there is an objective reality that exists. Instead of focusing on the objectivity and subjectivity, pragmatists advise the researcher to focus on two approaches for inquiry.



### 3.3. PARADIGMS ADOPTED IN THE STUDY

Research can be based on a single or more paradigms (Thomas, 2010). Dikotla (2016) agrees that research should treasure all research methods and use them appropriately. Pham (2018) concurs that each paradigm has its own special role, according to scholars a comprehensive foundation and multiple perspectives to address issues. Pragmatism paradigm was required for the purpose of understanding the electronic library resources and services that were made available to students amid COVID-19 pandemic. It was also found to be relevant because this study assessed the use of electronic library and information resources by students at UL and provided quantitative data to understand the trends on utilisation.

### 3.4. RESEARCH APPROACH

Grover (2015) holds the notion that research is about studying the problem by means of drafting the strategy, which starts by defining the research approach or orientation. A research approach further acts as a plan that is decided upon and guides the researcher towards selecting research methods, paradigms, data collection tools and data analysis and interpretation. The three main research approaches found in research studies are qualitative, quantitative, and mixed research approaches.

#### 3.4.1. Qualitative research approach

Qualitative research approach mainly focuses on exploring the places, phenomenon, and people as they exist in original settings (Biddix, Renn & Roper, 2018). It deals with ways people experience the original setting. A great advantage of the qualitative research approach is that it provides a detailed description of the phenomenon and participants can express their feelings, opinions, and experiences (Rahman, 2017). The main paradigms in qualitative research approach are interpretivism and positivism (Mohajan, 2018). Weaknesses of the qualitative research approach include the difficulties in verifying data to provide objective results and that it requires skilled interviewers to execute the process of collecting data without judgements (Mohajan, 2018).

#### 3.4.2. Quantitative research approach

The quantitative research approach is concerned with quantifying data. Rahman (2017) mentions that the quantitative research approach attempts to investigate the

questions that address how many, to what extent and how much. Briefly, it deals with measuring variables, describing, and finding patterns in a phenomenon. The strength of the quantitative research approach is drawn from the fact that it is scientific. Furthermore, the use of statistical data to derive meaning from data reduces the amount of time it takes for the researcher to work on the results (Daniel, 2016). Daniel (2016) further describes some of the shortcomings of the quantitative research approach, such as the researcher having an outer look on a phenomenon, there is no interest in looking for an in-depth information. Again, the quantitative research approach is not interested in unravelling the unknown, it works on the known to accept or reject the set of ideologies.

#### 3.4.3. Mixed-methods research

The Mixed-methods research approach gathers and analyses data within the same research (Shorten & Smith, 2017). Shorten and Smith (2017) further state that the mixed methods research approach allows the researcher to draw potential strength from both the qualitative and quantitative research approaches that will enable them to explore the relationships that exist among research objectives. Ngulube and Ngulube (2015) explain some of the criticisms that levelled against the mixed methods research approach are that not all studies can use the mixed methods approach, they simply need to follow pure qualitative or pure quantitative research approach. Lastly, the mixed methods research approach can reveal biasness when the researcher starts to support the qualitative research approach as compared to the quantitative research approach.

#### 3.4.4. Adopted research approach

This study adopted both the qualitative and quantitative research approaches. The qualitative research approach enabled the researcher to solicit information from librarians about the library services and electronic resources made available to students during the COVID-19 pandemic. On the other hand, the quantitative research approach assisted the researcher to decode information from students about their utilisation of EIRs at UL amid COVID-19 pandemic.

### 3.5. RESEARCH DESIGN

A research design is a presentation of parameters for the collection and analysis of data considering the study's aim and objectives (Akhtar, 2016). According to Bouchrika (2020), the research design describes how the researcher will investigate the research's key issues. Bouchrika (2020) further highlights that the main goal of the research design is to make data address the research problem clearly, accurately and in an unbiased manner. Babbie (2004), O'Sullivan et al. (2007) and Creswell (2008) believe that a research design is a master plan. The purpose of the study, skills, expertise and resources at the researcher's disposal to conduct the study are the main factors that influence the choice of the design (Babbie 2004; O'Sullivan et al., 2007). The audience of the research, philosophical perspectives, strategies of research and methods influence scholars in their selection of a research design (Creswell, 2008).

According to Akhtar (2016), a research design can take an experimental, exploratory, explanatory and a descriptive form. An exploratory design is concerned with discovering something new and interesting (Swedberg, 2018). Cash, Stankovic and Storga (2016) describe experimental research design as the scientific design that focuses on hypothesis, a variable that can be tested, measured, calculated and compared. The researcher uses data to agree with a hypothesis or reject it. An explanatory research design is employed where the problem has not been well-researched. It focuses more on elucidating the aspects of one's research in a comprehensive manner (China Scholarship Council, 2018). A descriptive research design is concerned with what has happened rather than why and how the phenomena has happened (Nassaji, 2015).

A survey descriptive research design was employed in this study as it enabled the researcher to focus on "need to know" questions rather than "nice to know" questions (Story & Tait, 2019). Furthermore, the aim of the survey is to help in addressing the research objectives that is interesting for the target population. Smith (2017) defines a survey as a method of collecting information from a sample or individuals that form a larger population for the purpose of describing attributes. It can gather quantitative data, which includes numerically rated questions and qualitative data which includes open-ended questions (Ponto, 2015). Survey descriptive research design is often utilised in social and psychological research (Ball, 2019). It is best utilised to answer

sensitive questions and guarantees anonymity (Nardi, 2018). The researcher drafted questions that are unbiased, understandable and inviting to attract students and librarians and inspire them to provide honest answers (Kelley-Quon, 2018). As with all research methods, the survey descriptive research design has disadvantages. The utilisation of surveys descriptive research design in research requires the researcher to be skilled in designing the questions. The return rate can be low and that jeopardises generalisability (Nardi, 2018). Open-ended questions for semi-structured interviews were prepared for librarians.

### 3.6. POPULATION OF THE STUDY

Taherdoost (2016) describes population as the number of people residing in a particular community where the researcher intends to conduct a study and draw conclusion(s). Asiamah, Mensah and Oteng-Abayie (2017); Martinez-Meza, Gonzalez-Chica, Duquia, Bonamigo and Bastos (2016) refer to research population as the target population. Target population is defined as a group of participants that have specific characteristics and interests the researcher is interested in investigating (Asiamah, Mensah & Oteng-Abayie, 2017). Students are the key stakeholders of the university. The population of the study was UL undergraduate students under the Faculty of Humanities and librarians from UL Department of Library Services. The University comprises four faculties, namely; Faculty of Humanities, Health Sciences, Science and Agriculture and Management and Law. The Faculty of Humanities, which was the focus of this study, consists of three schools, namely; School of Education, School of Languages and Communication Studies and School of Social Sciences. The researcher selected the Faculty of Humanities because social studies students engage in critical thinking and solve problems that aim to improve peoples' social environment; the library is one such a social and educational environment (Social Science Matters, 2020). Librarians were selected to participate in the study because they deliver information services to students.

### 3.7. SAMPLING

It was not possible to study the whole population of undergraduate students at the University due to limited financial resources and time to complete the research project (Taherdoost, 2016). It was therefore important for the researcher to draw a sample

from the target population (Moyo, 2017). A sample is a group of participants drawn from the target population to be studied and based on the results procured from it, the researcher may draw conclusions from the target population (Martinez-Meza, Gonzalez-Chica, Duquia, Bonamigo & Bastos, 2016). Quantitative research involves a big population such that it is almost impossible to study the whole of it (Moyo, 2017). Furthermore, Moyo (2017) advises that the sample should be sufficiently large to represent the target population but not too big, as this may lead to the waste of resources invested in the research project.

There are two main types of sampling approach, namely; probability (random) and non-probability (non-random sampling). In probability sampling, there are high chances that each member of the target population may be selected in the sample, whereas in non-probability sampling, the probability of the population being chosen is not known (Bhardwaj, 2019). The differences between the two sampling approaches are tabulated in table 3.1.

**Table 3.1: Probability vs non-probability sampling** (Bhardwaj, 2019; Alvi, 2016; Wilson, 2016; Sharma, 2017; Taherdoost, 2016; and Etikan, Musa & Alkassim, 2016).

<b>Probability sampling</b>	<b>Non-probability sampling</b>
When the population is homogenous, chances are high that each member of the population will be selected for the study.	It does not allow generalising from the sample to the population and is based on judgement and biasness.
The sample is more representative of the population.	The technique is often associated with case studies as they tend to focus on small sample and does not need to be representative.
This technique reduces the biasness in sampling process.	It is utilised in situations where drawing inference is not a big deal.
Probability sampling includes simple random sampling, stratified random sampling, systematic sampling, cluster sampling and multistage sampling.	Non-probability sampling includes quota sampling, convenience sampling, snowball sampling and purposive sampling.

<p>This technique requires a lot of effort, can be time consuming and exorbitant as compared to purposive and convenience sampling.</p>	<p>For purposive sampling, participants suit the purpose of the study.</p>
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Both probability and non-probability sampling were utilised in the study. For the selection of students' sample, stratified and systematic sampling processes were used.

### 3.7.1. Stratified and systematic random sampling

Stratified sampling refers to instances where the population is divided into subgroups and a random sample is drawn from each subgroup (Taherdoost, 2016). Moreover, when elements are selected at regular intervals, the process is called systematic random sampling (Taherdoost, 2016). Systematic random sampling occurs when units are selected in a predetermined interval (Etikan & Bala, 2017). The researcher selected the sample from programmes namely Information Studies, Media Studies and Communication Studies found in the School of Languages and Communication Studies, which were recognised as strata in this study. Furthermore, the 11<sup>th</sup> element interval from systematic sampling was utilised to select participants from each stratum. The study was intended to cover all schools under the Faculty of Humanities. However, due to the limited access to class lists from all schools and departments, the researcher decided to use the class lists that were provided by the School of Languages and Communication Studies. The School of Languages and Communication Studies is divided into three departments, namely; Languages, Linguistics, Translation and Interpretation Studies, as well as Communication, Media and Information Studies. The researcher was unable to secure the list of students from the latter two departments, that is, Department of Languages and Department of Linguistics, Translation and Interpretation Studies. The researcher only relied on one department only, which consists of three programmes, namely, Information Studies, Media Studies and Communication Studies. The programme of Information Studies had 234 undergraduate students; the Programme of Media Studies had 303 and the

programme of Communication Studies had 194 as per the class lists that were provided by the departmental secretary.

**Table 3.2: Sampling procedure for students**

<b>Programmes as strata</b>	<b>No. of population per school</b>	<b>No. of sample per school</b>
Programme of Media Studies	303	60
Programme of Communication Studies	194	40
Programme of Information Studies	234	48
<b>Total no. of sample for study</b>		<b>148</b>

Students were selected at regular intervals on class lists as per the systematic sample process. The researcher adopted a regular interval of selecting the fifth student and counting until five from the last fifth student on class lists, which resulted in a total sample frame of 148 targeted participants. This is shown in table 3.2 above.

### 3.7.2. Purposive sampling

For library staff, the researcher used the purposive sampling technique. According to Campbell, Greenwood, Prior, Shearer, Walkem, Young, Bywaters and Walker (2020), purposive sampling holds the notion that there are certain people who have knowledge that will help to address research objectives. The library's Executive Director, Head of Acquisition Librarian, Reader's Services and Information Services Librarian were selected purposively because they possessed information on the kind of library resources and services made available to students since the inception of the COVID-19 lockdown. The Acquisition Librarian is responsible for acquiring information resources for students and staff; therefore, the librarian knows which information resources were requested by students and staff for purchase amid the COVID-19 pandemic. The Library Executive Director is heading the library and therefore understands most of the challenges faced by different divisions within the academic library during the pandemic. The Information Services Librarian deals directly with students when they require assistance on information searches.

### 3.8. DATA INSTRUMENTS

Data collection techniques for the study included the questionnaire (appendix 1) and semi-structured interviews (appendix 2). This means that both the qualitative and quantitative data collection methods were utilised. Quantitative data provides truthful information involving numbers and categories which include selecting between options that range from strongly agree to strongly disagree (Samuels, 2020). Qualitative data is collected to understand the experiences and interests of the population using interviews, observations, and content analysis.

#### 3.8.1. Questionnaires

In this study, survey refers to the research design and questionnaire refers to the instrument employed (Pozzo, Borgobello & Pierella, 2019). A questionnaire is described as an instrument that consists of a set of questions based on specific objectives within the research project (Pozzo, Borgobello & Pierella, 2019). To create the rapport with participants, questions should start being general then specific on a questionnaire (Krosnick, 2018). When designing questionnaires, it is important to use familiar words, avoid double-barrelled questions and avoid loaded questions that forces participants to provide responses (Krosnick, 2018).

Questionnaires are used to provide standardised data collection method across subjects (Brace, 2018). Questionnaires can be administered in different ways such as self-administered questionnaires conducted through mail and online (Dalati & Gomez, 2018; Intrac for Civil Society, 2017). Online self-administered questionnaires were utilised as a data collection instrument in the study. According to Dalati and Gomez (2018), self-administered questionnaires are structured questionnaires that are designed to be filled by the respondents without the assistance of the researcher. The researcher selected self-administered questionnaires because they are free from biasness, there is some degree of anonymity and sensitive questions can be answered (Dalati & Gomez, 2018).

The main advantages of online questionnaires are cost-efficiency – e.g. printing costs, scanning and keeping the questionnaires safe, researchers can analyse data in real-time and respondents are more honest (Salama, Uzunboylu & El Muti, 2020). Some dominant disadvantages of online questionnaires are that respondents are usually



bombarded with online questionnaires on their emails, therefore, chances are that the online questionnaire can be overlooked, no control over incomplete questionnaires and respondents seldom understand open-ended questions (Dikotla, 2016; Dalati & Gomez, 2018).

Online questionnaires can be designed and distributed using Google forms, Survey Monkey, Type Form, Survey Planet, Zoho Survey and Survey Gizmo. Google Forms were utilised to gather data from the students. It is defined as the survey administration application that is incorporated in the Google drive office's suite (Salama, Uzunboylu & El Muti, 2020). An advantage of using Google forms is that it is connected to the spreadsheet, survey data and answers are automatically loaded on Google sheets, which will in turn assist the researcher to keep track of answered questions (Salama, Uzunboylu & El Muti, 2020).

### 3.8.2. Questionnaire design

The questionnaires were transformed from related studies. Some of the studies are cited in this study. To ensure that all issues are conveyed, questionnaires were developed in accordance or aligned with objectives outlined in this study. Each section in a questionnaire represented a specific objective of the study. Closed-ended questions were asked to retrieve numerical data and open-ended questions collected wealthy information (Thwaites Bee & Murdoch-Eaton, 2016). Online questionnaires were selected as a data collection instrument to comply with COVID-19 rules and regulations such as social distancing. Questions were carefully drafted, single points were made in each line and questions were jargon-free to avoid confusion (Thwaites Bee & Murdoch-Eaton, 2016).

The questionnaire was divided into six sections. Section one briefly requested students to complete the questionnaire. Section two covered the demographics of the participants such as gender, mode of internet access and type of settlement. Section three dealt with the awareness levels of EIRs among undergraduate students at the UL library. Section four dealt with the extent to which undergraduate students use the EIRs at the UL library during the COVID-19 pandemic. Section five covered the satisfaction of students with the use of library EIRs and services at the UL during the COVID-19 pandemic. Lastly section six covered the challenges experienced by undergraduate students when using library EIRs at UL during and after the COVID-19

pandemic. Likert scales were used to measure how well students are aware of and satisfied with library electronic resources and services. An online questionnaire was distributed to students via the University's email address. The detailed questionnaire that includes all sections is attached as Appendix 1.

### 3.8.3. Semi-structured interviews

According to Modjadji (2019), semi-structured interviews consist of prepared structured questions and additional questions that are influenced by interviewees' responses, which allows possibilities of seeking clarity. Semi-structured interviews to some degree are participants-led because the sequencing of questions allows the researcher to ask follow-up questions to probe further (Roulston & Choi, 2018). Semi-structured interviews were carried out with the Library Director, Library Head of Acquisition, Reader's Service and Information Services Librarian using Google Meet. Interviews were recorded. These participants were perceived by the researcher to be key informants who would provide valuable information to achieve one of the research objectives.

Semi-structured interviews allow the researcher and the respondents to be equal during the interview (Smit, 2018). Smit (2018) further states that the researcher should attempt to balance control and flexibility during the interview process, that is, allowing the researcher to probe further, but not forgetting that questions should be able to solicit information that will address research objectives. All respondents were asked the same five questions and follow-up questions came after to get more information from the respondents. Follow-up questions allowed the researcher to get different insights from librarians that are situated in different portfolios in the academic library.

Semi-structured interviews are valuable when the researcher is asking probing questions and want to know individual thoughts from each librarian (Adams, 2015). Time consumption and labour intensity can be drawbacks of semi-structured interviews since they allow the researcher to probe further on top of planned questions (Adams, 2015). However, they are effective when conducted in a small group such as the sample of librarians selected for this study.

The researcher created a rapport with the librarians and allowed them to introduce themselves. Furthermore, the study was introduced to the librarians and the purpose

of conducting the research was communicated before interviews commenced. Recording was allowed by the librarians during interviews. The researcher assured the librarians that interviews are recorded and will be accessed by the researcher and supervisor only; however, an opportunity was made for librarians to say whatever they wanted to say off record (Rutakumwa, Mugisha, Bernays, Kabunga, Tumwekwase, Mbonye & Seeley, 2019). Rutakumwa et al. (2019) have proven that the absence of recording may pose a threat to the validity and credibility of data, and yet the presence of recording may allow librarians to feel vulnerable. It was therefore important for the researcher to strike a balance between the times when librarians allow their responses to be recorded and when they want to discontinue recording to make comments off tape.

#### 3.8.4. Data collection procedure

For the library staff sample, an ethical clearance certificate (Appendix 7) accompanied by the permission request letter (Appendix 4) were sent to the Department of Library Services (DLS) Director who later shared the information with other librarians. Upon consultation with the DLS Director and going through the objectives of the research and the interview questions, it was agreed that the DLS director, Information Service Librarian and Head of Acquisition Librarian participate in the study. Regarding students, an email was sent to the University's Registrar requesting permission to conduct the study under the Faculty of Humanities. An ethical clearance certificate (Appendix 7), Gatekeeper's permission request letter (Appendix 5) and research proposal were attached to the email when the request was made.

### 3.9. DATA ANALYSIS

Data analysis is the process of organising and making meaning, noting relationships and ideas of the collected data (Migrant & Seasonal Head Start Technical Assistant Center, 2006). The data analysis procedure followed both the quantitative and qualitative routes. The study implemented the descriptive research analysis. The descriptive research analysis focuses on what has happened rather than why and how the phenomenon has happened. Quantitative data was analysed using Microsoft Excel and presented in tabular form using frequencies, percentages and average.

Thematic analysis was used to analyse qualitative data. This is defined as an approach that identifies patterns and trends on data that is collected (Lester, Cho & Lochmiller, 2020). Themes were prepared in chunks and the researcher investigated potential connections among categories and group them according to the connections (Mackey & Gass, 2016). As guided by Vaismoradi, Jones, Turunen and Snelgrove (2016), theme development includes initialising theme by drafting notes, constructing labels, rectifying themes to group related themes and finalising themes by means of displaying them. Some themes emerged from the data rather than being decided upon before data collection (Mackey & Gass, 2016).

### 3.10. QUALITY CRITERIA

The purpose of this section is to ensure that methods and data collection instruments utilised in the research process are credible, truthful and followed accordingly. Quantitative criteria focused on reliability and validity. Leedy and Ormrod (2015) define reliability as the stability of the data collection tool used consistently over time to harvest results when the attributes are not changed. It was achieved in the study by following the research design through-out the research process. The test-retest reliability approach assisted in measuring the questionnaire's reliability.

Validity is defined as the state of relevancy, meaningful and logical to conform to the accepted standards of research process (Cypress, 2017). Cypress (2017) regards validity was realised by making sure that the study exhibits accurate findings and the instrument measures what is intended to measure. A panel of experts such as lecturers were requested to inspect a data collection tool and give well-thought-out opinions before it was shared with respondents (Leedy & Ormrod, 2015).

For the qualitative criteria, the researcher considered objectivity, credibility, confirmability, trustworthiness and transferability. Ahmed (2017) avers that objectivity is an important criterion in scientific inquiry where ideas are expressed without the influence of the researchers' biasness and prejudices. Emotions and biasness are not allowed in the process of research inquiry and fairness should always be maintained (O'Leary, 2017). Objectivity was achieved by presenting findings based on the data collected. Critical criticism was allowed by fellow researchers and lecturers to fulfil the

objectives of the research. Credibility is about presenting truthful findings based on data collected and ensure that findings accomplish research objectives (O'Leary, 2017). In this study, credibility was ensured by making sure that validity and reliability processes were performed on data collection instruments.

Furthermore, the researcher engaged with experts for a rigorous briefing to ensure that the research presents what is intended (Daniel, 2019). An external supervisor was appointed to examine this research. Confirmability was another element of quality in qualitative research. It refers to a way the results are linked to the conclusion of the research in a way that can be followed and replicated (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016). Confirmability was realised by consulting with research experts to verify that indeed the study is shaped by the respondents' motivation, bias and interests and are linked to the conclusion (Amankwaa, 2016). Trustworthiness refers to the process where the researcher maintains clear and transparent decisions on the research process (Noble & Smith, 2015). The researcher's transparency was demonstrated on analysis and interpretation of the findings. Finally, transferability implies that knowledge can be passed to others and utilised by them (Kirk & Miller, 2020). It is possible to conduct this study on postgraduate students as well, the researcher extended the participation to postgraduate students when undergraduate students were unreachable.

### 3.11. ETHICAL CONSIDERATIONS

It is important to protect human subjects throughout the research process (Arifin, 2018). According to Economic and Social Research Council (2016) cited in Carpenter (2017), there are six principles that should be considered for ethics in research. That is, individuals' rights and dignity should be respected, research should be transparent and of high integrity, responsibility and accountability should be clearly defined, open communication should occur where a conflict of interest is unavoidable, participation should be voluntary, and risk and harm should be minimised at all costs.

#### 3.11.1. Permission to conduct the study

The researcher protected the rights and dignity of the participants by communicating the purpose of the study before participation and ensured that participation was voluntary. The researcher applied to the Turfloop Research Ethics Committee seeking

permission to conduct the study at UL. An ethical clearance certificate with reference number (TREC/89/2021:PG) was issued as per the ethics criteria the researcher considered in the research process. It is attached as Appendix 7. It was attached on Gatekeeper's letter to University Registrar (Appendix 8), the Dean of Faculty' letter (Appendix 5) and DLS permission letter (Appendix 4). Furthermore, permission to conduct the study was granted by the University Registrar, Executive Dean of Faculty and Library and Information Services, respectively. An ethical clearance certificate was attached after the permission letters that were distributed to impacted stakeholders.

### 3.11.2. Informed consent, harm, anonymity, and confidentiality

The purpose of the research and security measures were put in place to protect the data communicated to the participants. An effort was taken to protect the welfare of participants by ensuring that participants consent to participate in this study, and they could withdraw from the study any time. As guided by Pickard (2013), the participants were advised not to disclose their names when completing questionnaires. For confidentiality purposes, only the researcher and supervisors could access to completed questionnaires and interview recordings. It was important for the researcher to avoid harm during data collection process. According to Williams (2017), researchers are forced to avoid physical, social, emotional and psychological harm to participants and research should also be conducted in a conducive environment to avoid harm to the research squad. To avoid harm during the research process, the researcher adhered to COVID-19 rules and regulations, such as avoiding close contact with research participants; therefore, an online questionnaire and semi-structured interview were used. The questionnaire was distributed through the University email in a form of Google Forms to avoid contact with students. Semi-structured interviews were conducted using Google Meet to avoid face to face interactions with library representatives. The researcher labelled library representatives as librarian 1, librarian 2 and librarian 3. A few students sent signed consent forms (Appendix 6) to the researcher; however, the researcher did not mention their names.

### 3.11.3. Plagiarism

Plagiarism is described as using someone's idea without acknowledging them (Helgesson & Eriksson, 2015). The study avoided plagiarism at all costs. Sources that were cited in the research project were acknowledged in text and referenced at the end of the project. The researcher followed the Harvard referencing style as per the standards set out by the UL Research Office. An anti-plagiarism software called Turnitin was used to detect plagiarism to avoid intentional and unintentional plagiarism and 15% similarity was achieved (Yadav, Rawal & Baxi, 2016).

### 3.12. CHAPTER SUMMARY

This chapter discussed the research methodology, which includes research paradigm, research approach, research design, population, sampling, data collection methods, quality criteria and ethical considerations. The research paradigm and research approach were discussed to understand how the researcher views the research world. The researcher's choice of a researcher's design was justified. The population of the study was stated, and sampling techniques employed in the study were outlined. The online questionnaire was created with Google Forms, and students were sent an email with a link to complete it. The email included an introduction of the researcher, an introduction to the study and an attachment of consent form. An interview schedule was compiled for semi-structured interviews with librarians. It was sent to librarians via email for them to prepare for the semi-structured interviews. The email included an introduction of the researcher, ethical clearance certificate, gatekeepers' letter, and consent form. Google forms exported graphs and pie charts. In addition to the graphs and pie charts automatically created by Google Forms, other tables were created using Microsoft Excel. The questionnaire included open and closed-ended questions. Open-ended questions were coded into numeric from Google Forms to warrant the analysis of data since the study is also quantitative. The next chapter presents, analyses and interprets the results of the study in tables and graphs labelled as figures.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS, AND INTERPRETATION OF FINDINGS

#### 4.1. INTRODUCTION

The previous chapter discusses the research methodology used in the study for the purpose of data collection from the participants, that is, students in the Faculty of Humanities, and the librarians at UL. This chapter presents, analyses and interprets the results using the descriptive research design. An online questionnaire using Google forms was a data collection instrument. It was sent to UL, Faculty of Humanities and School of Languages and Communication Studies students. An interview schedule was used to collect data from librarians. Google Meet was the platform used to host interviews.

Microsoft Excel was used to analyse the results from students. Google Forms provided a summarised analysis of the results by exporting graphs and pie charts. The study used thematic analysis to analyse the results of the responses from the library staff. According to de Farias, Dutra-Thome, Koller and de Castro (2020), thematic analysis is used to explore patterns on narratives as a blueprint to interpret and describe experiences. Thematic analysis was used on the data collected from librarians. The analysis starts with the process of familiarisation with data. Secondly, the researcher identified and jotted down the codes that emerged. Thirdly, patterns were assessed to look at the similarities and differences. Lastly, final themes were named (de Farias, 2020).

#### 4.2. RESPONSE RATE

##### 4.2.1. Student participants' response rate

The target population for this study was UL undergraduate students and librarians. The online questionnaire was sent out to the drawn sample from the Faculty of Humanities, School of Languages and Communication Studies. Students participated in the study were from Media Studies, Information Studies, and Communication Studies. Stratified and systematic random sampling methods were used on the total number of target population. The researcher applied the systematic sampling method



from class lists to get the 148 undergraduate students that form part of the sample frame. Nayak and Nayaran (2019) confirm that the online questionnaires have a low response rate and respondents may not respond to an email that fails to interest them. Out of 148 undergraduate students, 80 undergraduate students managed to complete the questionnaire. The response rate of the study was 54%. According to Punch (2003), a 50% response rate on email questionnaires is also acceptable.

Table 4.1: Student participants' response rate

Programmes as strata	No. of population per school	No. of sample per school	Response rate	Percentage
Programme of Media Studies	303	60	09	11,3
Programme of Communication Studies	194	40	14	14,5
Programme of Information Studies	234	48	57	71,2
<b>Total no. of sample for study</b>		<b>148</b>	<b>80</b>	<b>100</b>

#### 4.2.2. Librarian participants' response rate

Data was also collected from librarians. The researcher targeted the Director of Libraries, Head of Acquisition, Head of Information Services and Head of Client Services. The total number of librarians that were supposed to participate in the study was 6. Out of 6 librarians, only 3 librarians managed to participate in this study. Three librarians that participated in the study were job shadowing for the Head of Client Services. A semi-structured interview was held with only one librarian via Google Meet. Two librarians completed the interview schedule and sent it back to the researcher.

#### 4.3. BIOGRAPHICAL INFORMATION

Biographical information assisted the researcher in outlining the demographics of the respondents under the subtopics: age, programme respondents are attached to, residential area, method of accessing internet gadgets owned by the respondents and the level of study.

#### 4.3.1. Age

Respondents were asked to choose between the age groups to which they belong. Age distribution information is usually important as one of the variables, which may influence the usage or non-usage of EIRs in university libraries. The results are presented in Figure 4.1.

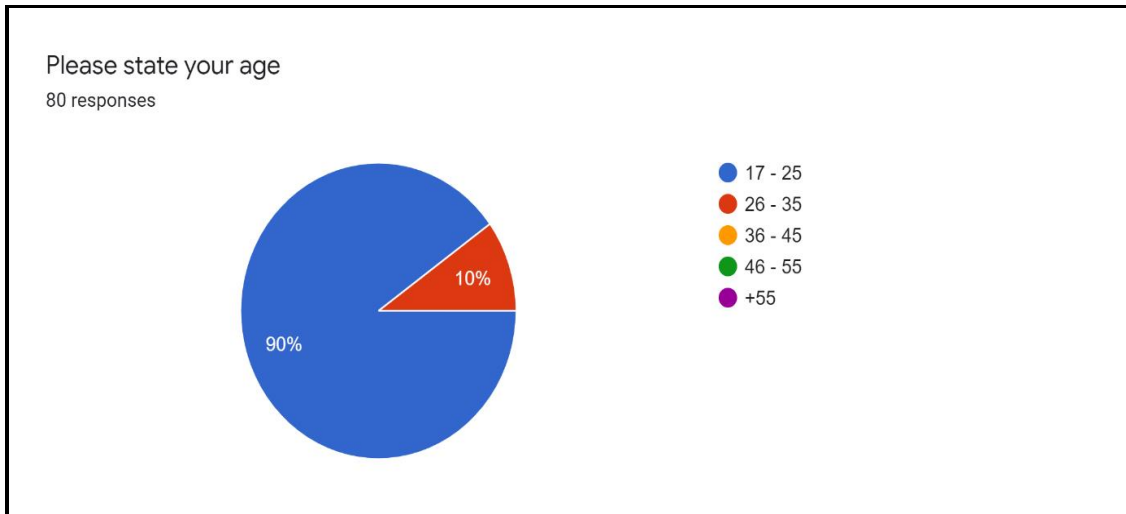


Figure 4.1: Age of respondents

Out of 80 respondents, 72 (90%) respondents' age ranged from 17-25 years and 8 (10%) respondents' age ranged from 26-35. The question was asked to determine the age group of respondents registered in the Faculty of Humanities, School of Languages and Communication Studies. Thus, it was found that most 72 (90%) of the respondents in this study registered to further their studies in the Faculty of Humanities are aged between 17-25 years.

#### 4.3.2. Programmes' respondents are attached to

The respondents were asked to indicate the programmes they are attached to from the School of Languages and Communications Studies. The question aimed to establish the number of respondents that participated in the study from School of Languages and Communications Studies. Results are presented on Figure 4.2.

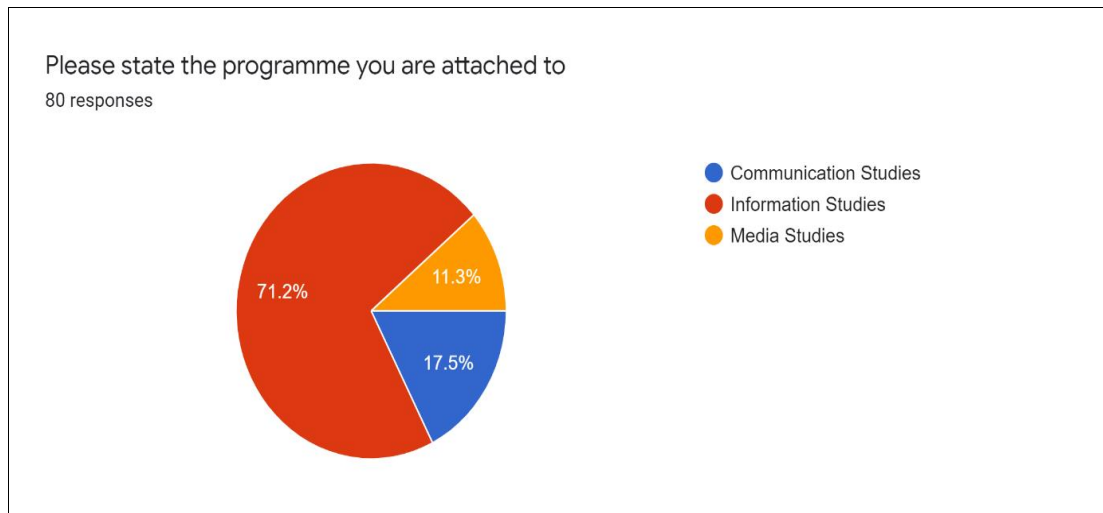


Figure 4.2: Programmes attached to the School of Languages and Communication Studies

There are five programmes under the Department of Communication, Media and Information Studies. Fourteen (17, 5%) respondents were registered students in the Programme of Communication Studies, 57 (71, 2%) respondents were attached to the Programme of Information Studies, 9 (11, 3%) respondents were attached to the Programme of Media Studies. Most 57 (71, 2%) respondents in this study were attached to the Programme of Information Studies. Most of the class lists that were received by the researcher are for students in the Programme of Information Studies.

#### 4.3.3. Residential area of respondents

Respondents were asked to indicate their residential areas on Figure 4.3. A residential area is important in this study as it may influence the challenges respondents encountered when accessing EIRs.

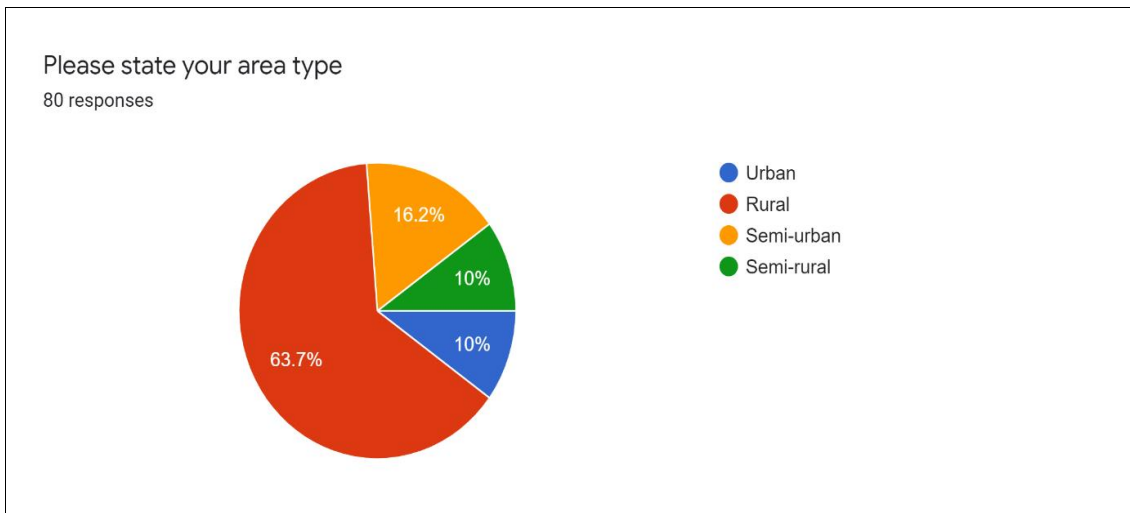


Figure 4.3: Residential area of respondents

Eight (10%) of the respondents reside in urban areas, a significant number 51 (63, 7%) of respondents stated that they reside in rural areas, 13 (16, 2%) respondents were from semi-urban areas and 8 (10%) respondents reside in semi-rural areas. A majority, 51 (63, 7%), of the respondents were from rural areas. The question was meant to establish the respondents' residential place as it contributes to the challenges of accessing EIRs. Rural areas face challenges because of their remoteness. In most cases, they are less politically and economically fused than the other parts of the country (Kosec & Wantchekon, 2020). Nnadi (2016) confirms that the challenges encountered by undergraduate students at their rural residence are poor network connectivity, intermittent power outages and some of the students cannot afford personal laptops. Thus, the remoteness of rural areas and lack of economic activities and political activities make it difficult for students to access EIRs because government does not prioritise them for service delivery.

#### 4.3.4. Mode of accessing internet

Respondents were asked about the method they used to connect to the internet on Figure 4.4. The mode of accessing the internet as a variable may create a pattern of methods used to connect to the internet and access EIRs.

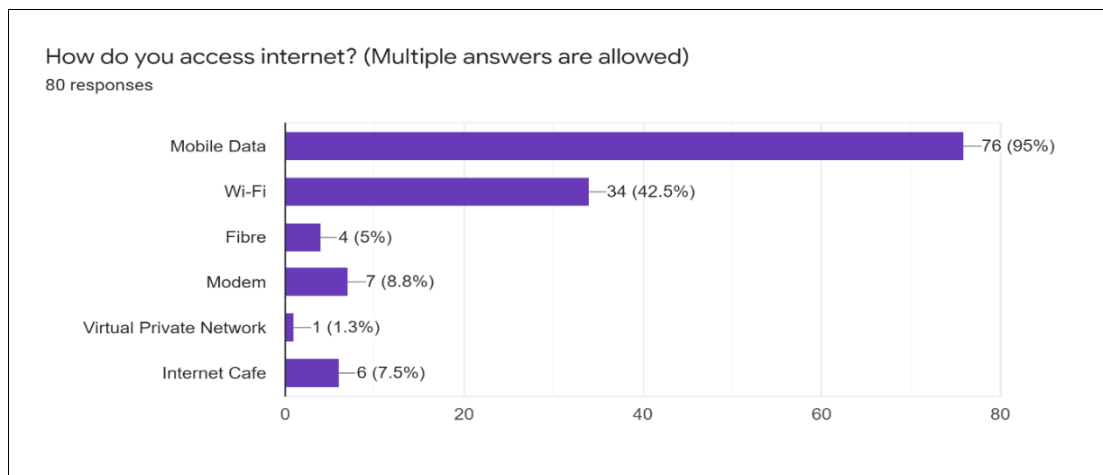


Figure 4.4: Mode of accessing internet

A resounding number, 76 (95%), of the respondents specified that were using mobile data, followed by 34 (42, 5%) respondents who used Wi-Fi, 4 (5%) respondents using fibre, 7 (8, 8%) respondents using a modem, 1 (1, 3%) respondent a Virtual Private Network and 6 (7, 5%) respondents used internet café. A majority of the respondents were depending on mobile data. This significant number of respondents using mobile data is not astonishing as UL has partnered with mobile network operators to distribute mobile data to respondents. The mobile data enabled respondents to access academic materials and EIRs off-campus. Budiman (2020) has shown that the monthly distribution of data packages to students by local government and universities have reduced the costs for students when accessing electronic information during the COVID-19 pandemic.

#### 4.3.5 Gadgets owned by respondents

Figure 4.5 presented the results on gadgets owned by respondents. Respondents were asked to indicate gadgets owned. They were allowed to indicate more than one gadget. Responses to the question may reveal the gadgets that were easily accessible by the respondents during COVID-19 pandemic.

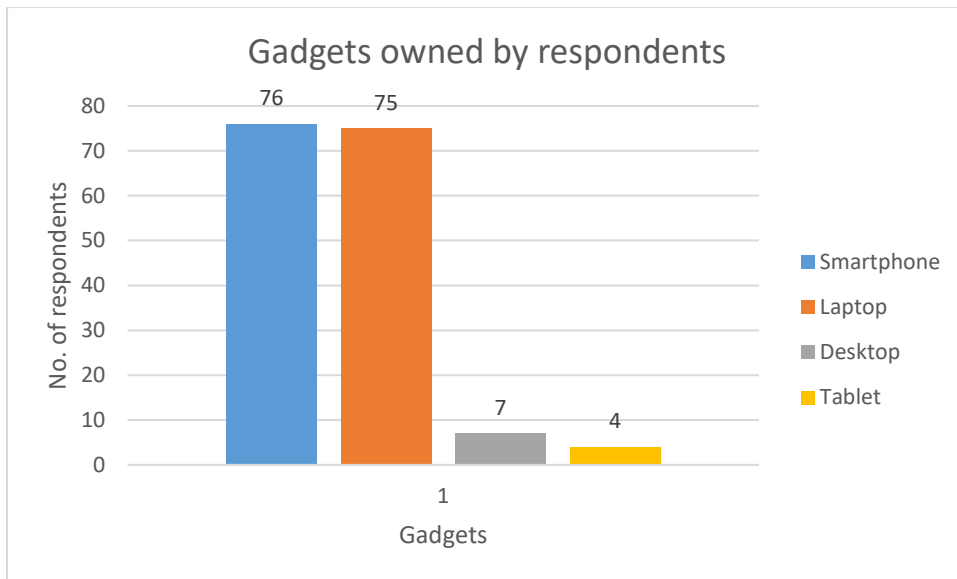


Figure 4.5: Gadgets owned by respondents

Seventy-six respondents were owning a smartphone, 75 were owning a laptop, 7 were owning a desktop and 4 were owning a tablet. This meant that a majority of the respondents, 76 and 75, were owning a smartphone and a laptop. These two gadgets have been found to be primary gadgets that were owned by respondents. Smartphones' usage amongst students increased tremendously during the COVID-19 pandemic because information was accessed online (Saadeh, Al-Fayez, Refaei, Shewaikani, Khawaldah, Abu-Shanab & Al-Hussaini, 2021). Kotowski and Davis (2021) also confirms that laptops were highly used by students during the COVID-19 pandemic.

#### 4.3.6. Level of study of respondents

Respondents were awarded an opportunity to select their level of study on Figure 4.6. The question was asked to understand the trend on students' usage of EIRs during the COVID-19 pandemic.

Please select your level of study?

80 responses

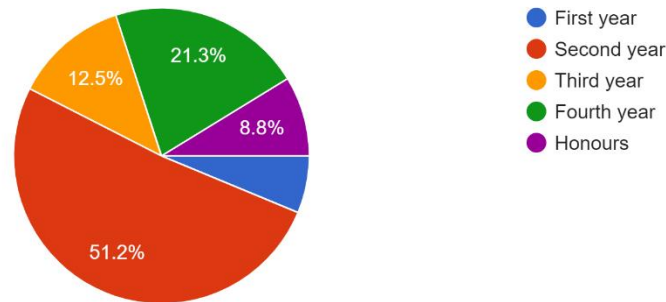


Figure 4.6: Level of study of respondents

Figure 4.6 depicts that 5 (6, 3%) respondents were doing their first year, 41 (51,2%) were doing their second year, 10 (12, 5%) respondents were doing their third year, 17 (21,3%) were doing their fourth year and 7 (8,8%) were doing their honours qualification. Most respondents, 41 (51, 2%), in this study were doing their second year. The level of education and tenure of respondents in the University impacts the use of EIRs (Johnson et al., 1995). It is visible that first year students at UL are not searching the same information as second year students. A significant number, 41(5, 2%), of the respondents were doing second year. The number has increased from first year to second year. However, there is a decrease from third year till honours. An increase could result in respondents in first year were not aware of many academic activities and still adapting to the environment as compared to second year. A decrease could result in the respondents who used to the environment to a point where they checked other sources of information available instead of using academic library services.

#### 4.4. STUDENTS' AWARENESS OF ELECTRONIC RESOURCES

As outlined in Chapter 1, the first objective of the study was to determine undergraduate students' level of awareness of library EIRs at the UL library. This was done through the questionnaire on section three.

#### 4.4.1. Awareness level towards EIRs

Table 4 depicts the level of awareness on multiple EIRs. Respondents were asked to rate their level of awareness. They rated from not being aware at all to extremely aware on EIRs.

Table 4.2: Respondents' levels of awareness of EIRs

	<b>Not at all</b>	<b>Slightly</b>	<b>Moderately</b>	<b>Very much aware</b>	<b>Extremely aware</b>
Electronic databases	8 (10%)	16 (20%)	23 (29%)	19 (23,5%)	14 (17,5%)
Institutional repository	22 (27,5%)	27 (34%)	16 (20%)	9 (11,3%)	6 (7,5%)
Online Public Access Catalogue	8 (9,9%)	20 (25%)	14 (17,5%)	18 (22%)	21 (25,6%)
Electronic books	2 (2%)	11 (14%)	22 (27%)	17 (21%)	30 (36%)
Electronic journals	6 (7,5%)	8 (10%)	16 (20%)	21 (25,7%)	29 (36,8%)
Electronic Thesis and dissertations	15 (18,5%)	15 (18,5%)	18 (21,5%)	17 (20,5%)	17 (21%)
Online magazines	10 (12,5%)	19 (23,5%)	17 (20,5%)	10 (12,5%)	25 (31%)
Online newspapers	9 (11%)	14 (17,5%)	22 (27%)	10 (12,5%)	26 (32%)
Online articles	4 (5%)	9 (11,3%)	18 (22,7%)	19 (23,5%)	30 (37,5%)
Online government gazettes and law documents	12 (15%)	19 (24,2%)	17 (21,3%)	14 (17,5%)	18 (22%)

With regards to the level of awareness of EIRs found in the academic library, most respondents, 30 (36%), said they were extremely aware of electronic books and online articles as compared to those who said they were very much aware, moderately, slightly, and not aware at all. Furthermore, 27 (34%) respondents said they were slightly aware of the institutional repository as compared to those who said moderately, very much aware, and extremely aware. A significant number, 26 (32%), were



extremely aware of online newspapers as compared to those who were very much aware, moderately, slightly, and not aware at all. Moreover, regarding electronic theses and dissertations, 18 (21, 5%) respondents specified that they were moderately aware of them. 19 (24, 2%) respondents were slightly aware of the online government gazettes and law documents. However, 17 (21, 3%) respondents specified that they were moderately aware and a reasonable number, 18 (22%), indicated that they are extremely aware. Twenty-one (25, 6%) respondents were extremely aware of online public access catalogue considering those who either said they are very much aware, moderately, slightly, or not aware at all. A relatively 23 (29%) number of respondents were very much aware of electronic databases in contrast to those who were extremely aware, moderately, slightly, and not aware at all. It was found that most respondents were extremely aware of electronic journals, electronic books, online magazines, and online articles. Awareness is a point of departure before a student can start using EIRs. Based on the Comprehensive Information Seeking Model, UL undergraduate students were aware of electronic information before they can start utilising them (Johnson et al., 1995 & Tubachi, 2018). The results in this study complement what Bajpai and Sharma (2017) discovered in their study. Majority of students are aware of electronic journals, electronic books, electronic magazines, and electronic newspapers. The use of EIRs increased during the COVID-19 pandemic and librarians digitised some of grey literature content to meet students' information needs (Browne, 2021).

A few students are aware of the institutional repository, electronic standards, full-text, and bibliographic databases. The results contradict Moyo's (2017) results which indicated the low level of awareness from University of South Africa (UNISA) undergraduate students because they are geographically dispersed and their knowledge of what UNISA library offers is very limited. The findings reveal that 29 (36.8%) respondents are extremely aware of electronic journals, 30 (36%) electronic books, and 30 (37,5%) online articles, concurred with the discovery by Akpojotor (2016) that recorded a mean of 4,71 for students' awareness towards electronic journals, 4,63 for electronic articles and 4,53 for electronic books. The average mean of 4, 51 in Akpojotor's (2016) study reveals that students are aware of electronic journals, electronic books, and online articles. They were recorded as top-rated online information resources respondents were aware of.

According to Johnson et al. (1995), on Comprehensive Information Seeking Model, respondents need to be aware that they need information before they can start to search for information. Johnson et al. (1995) further realised that information carrier is important on Comprehensive Information Seeking Model. Information carriers in this study are EIRs. Undergraduate students need to rely, and trust EIRs, therefore, credibility is imperative to fulfil information needs. The results indicate that the respondents were aware of electronic books, electronic journals and electronic articles before they start using them.

#### 4.4.2. How respondents became aware of EIRs

Respondents were asked how they became aware of EIRs. Sources of awareness from which the respondents had to choose from are library orientation, information literacy, bibliographic instruction session and other depicted on Figure 4.7. The respondents were given the latitude to choose more than one response. The results are depicted in Figure 4.7.

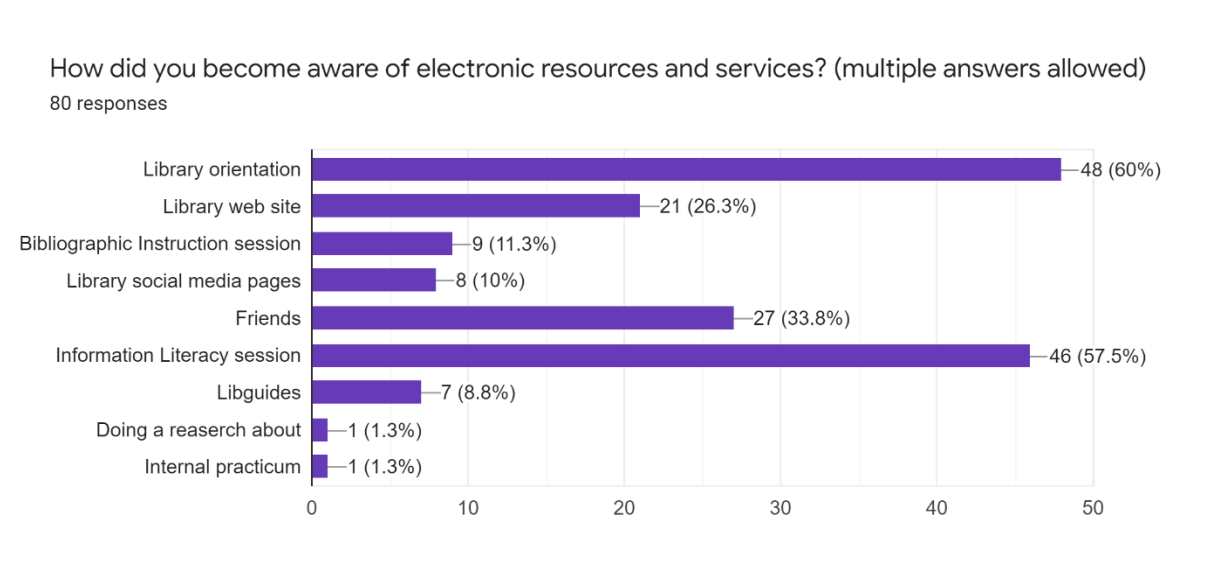


Figure 4.7: Respondents awareness of EIRs

48 (60%) respondents said the library orientation helped them to be aware of EIRs. 21 (26, 3%) said it was through the library website, 9 (11, 3%) said bibliographic instruction session, 8 (10%) said library social media pages, 27 (33, 8%) respondents specified that it was through friends, followed by 46 (57, 5%) respondents that were

assisted by information literacy session. 7 (8, 8%) respondents learnt about EIRs through libguides. Libguides manage content and information of libraries (Pikes Peak Library District, 2021). Librarians use them to document subject matter information such as database access, that is, specialised databases. They were useful during the COVID-19 pandemic because librarians were using it to post COVID-19 research, electronic databases and electronic journals. Respondents were given an opportunity to specify other avenues that made them to be aware of EIRs, 1 (1, 3%) respondent identified that it was through doing research and another 1 (1, 3%) respondent said it was during the internal practicum at the library that made them to be aware of EIRs. The respondents predominantly identified that library orientation and information literacy session made them aware of EIRs that are specified on Figure 4.7. A study conducted by Kwadzo (2015) contradict the results as a majority of students indicated that they heard about databases from their lecturer. It was advantageous for them because lecturers recommended databases that specialise in their area of study.

#### 4.4.3. When respondents became aware of EIRs

When respondents were asked when they became aware of EIRs, statements used to establish the time frame was before the COVID-19 pandemic, during the pandemic and not aware at all. Results are presented on Figure 4.8. The question was asked to understand if the pandemic had an influence on the awareness of EIRs.

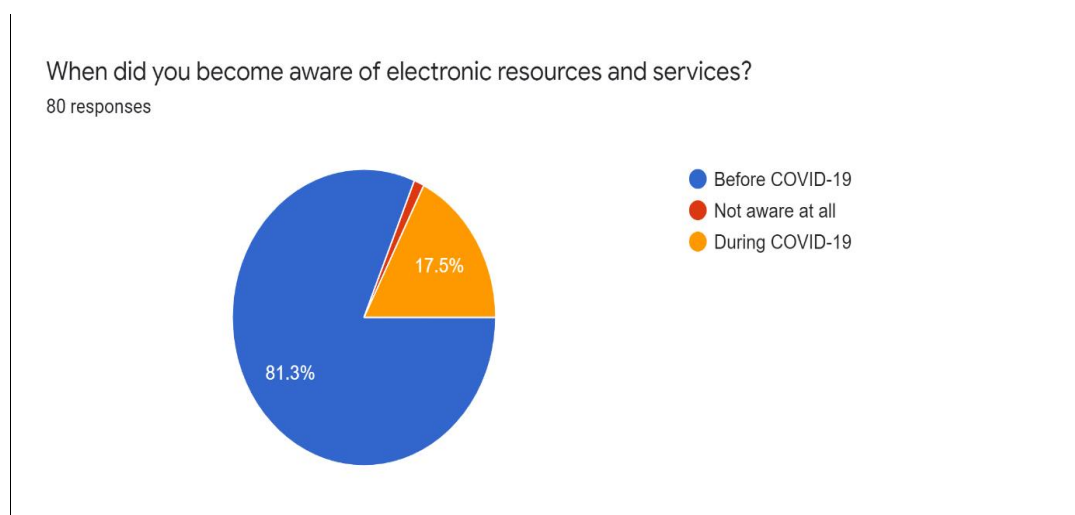


Figure 4.8: When respondents became aware of EIRs

When it comes to understanding when respondents became aware of electronic resources and services, 65 (81, 3%) respondents specified that they were aware before COVID-19 pandemic, followed by 14 (17, 5%) respondents that were aware during the COVID-19 pandemic and 1 (1, 2%) respondent was not aware at all. Figure 4.8 depicts that most respondents cited that they became aware of EIRs and services before the COVID-19 pandemic. The findings are in accordance with Matonkar and Dhuri's (2021) study, which found that 12, 1% respondents were aware of open access online resources during the COVID-19 pandemic. Yeboowah and Plockey (2017) conducted an awareness study before the pandemic and discovered that a majority of the respondents, 65%, were familiar with EIRs.

#### 4.5. THE EXTENT TO WHICH STUDENTS USE THE EIRS during COVID-19

The second objective of the study was to determine the extent to which undergraduate students use library EIRs at the UL library during the COVID-19 pandemic. Questions about the use of EIRs were asked through a questionnaire in section 4. The content covered on questions aimed to determine the extent to which EIRs were used and how often they were used.

##### 4.5.1. The extent to which the respondents use EIRs and services

Figure 4.9 presents the results of the degree to which respondents were utilising EIRs. The question was asked to understand the degree of utilisation of electronic information during the COVID-19 pandemic.

How often do you use electronic resources and services during COVID-19 lockdown?

80 responses

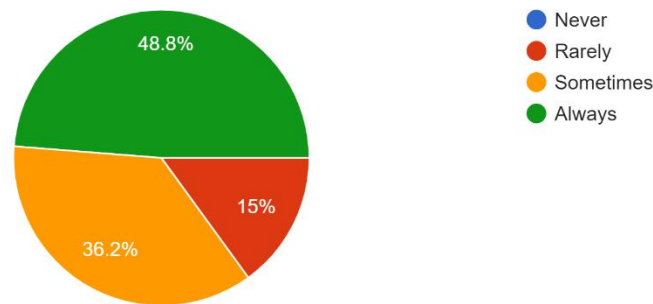


Figure 4.9: The extent to which respondents use EIRs and services

The respondents were asked to indicate the extent to which they used EIRs and services during the lockdown. It was found that 39 (48, 8%) respondents were always using EIRs and services during the lockdown, 29 (36, 2%) were sometimes using them and 12 (15%) respondents rarely utilised EIRs and services during lockdown. Figure 4.9 shows that a majority of the respondents, 39 (48,8%), were always using EIRs and services during the COVID-19 lockdown. Of the 80 respondents that participated in the study, there is no single respondent that never utilised EIRs and services during COVID-19 lockdown. The findings contradict those of Hendal (2020) that recorded 40% of the respondents were using EIRs during the COVID-19 pandemic. More than half of the respondents, 60%, were using electronic resources before COVID-19. Ambrose, Ogunbodede and Imade's (2021) findings concur with the results that found students frequently utilised EIRs during the COVID-19 pandemic.

The Comprehensive Information Seeking Model established that information must be delivered at the right time to fulfil users' needs (Han et al., 2010). It is evident on the results that most of the respondents, 39 (48, 8%), were utilising EIRs. It was the right time for the respondents as they were banned from accessing library buildings because of lockdown rules and regulations.

#### 4.5.2. How often EIRs and services were utilised during COVID-19 lockdown

The respondents were asked to rate how often they were utilising EIRs during COVID-19 pandemic lockdown on Table 4.3. EIRs that were rated are electronic databases,

institutional repository, electronic books, electronic journals, online newspapers, online magazines; online public access catalogue, electronic theses and dissertations, online government gazettes, ask a librarian and chat to a librarian. The question was asked to demonstrate the frequency of utilisation of EIRs.

Table 4.3: How often EIRs and services were utilised

<b>Electronic resources</b>	<b>Never</b>	<b>Seldom</b>	<b>Sometimes</b>	<b>Always</b>
Electronic databases	10 (12,5%)	9 (10,5%)	39 (47,5%)	24 (29,5%)
Institutional repository	33 (41,5%)	20 (25%)	19 (23,5%)	8 (10%)
Electronic books	4 (5%)	9 (11,3%)	37 (46,7%)	30 (37%)
Electronic journals	8 (10%)	6 (7,5%)	33 (41,25%)	33 (41,25%)
Online newspapers	25 (30,5%)	14 (16,5%)	31 (37,5%)	13 (15,5%)
Online magazines	31 (38,5%)	13 (16,2%)	26 (32,8%)	10 (12,5%)
Online Public Access Catalogue	15 (18,5%)	19 (23,5%)	31 (37,5%)	17 (20,5%)
Electronic thesis and dissertations	25 (30,5%)	14 (17,5%)	23 (28%)	20 (24%)
Online government gazettes	31 (37%)	23 (28%)	16 (19,8%)	13 (15,2%)
Ask a librarian	46 (55%)	15 (18%)	17 (20%)	6 (7%)
Chat to a librarian	49 (61%)	14 (17,5%)	11 (14%)	6 (7,5%)

The respondents were asked how often they were utilising EIRs and services specified on Table 4.4 during the lockdown. 10 (12,5%) respondents said never, 9 (10,5%) said seldom, 39 (47,5%) said sometimes and 24 (29,5%) said they always utilise electronic databases. On the use of the institutional repository, 33 (41,5%) respondents said never, 20 (25%) respondents said seldom, 19 (23,5%) respondents said sometimes, and 8 (10%) respondents said always. Concerning electronic books, 4 (5%) respondents said never, 9 (11,3%) respondents said seldom, 37 (46,7%) respondents said sometimes, and 30 (37%) respondents said always. 8 (10%) respondents said they never used electronic journals, 6 (7,5%) respondents said seldom, 33 (41,25%) respondents said they sometimes use electronic journals. Again, 33 (41, 25%) respondents said always. Furthermore, 25 (30, 7%) said they never used online

newspapers, 14 (16,5%) respondents said they seldom use online newspapers, 30 (37,5%) respondents said they sometimes used online newspapers and 13 (15,5%) respondents said they always used online newspapers. 31 (38,5%) respondents said they never used online magazines, 13 (16,2%) respondents said seldom, 26 (32,8%) respondents said sometimes and 10 (12,5%) said always. Online public access catalogue was never used by 15 (18,5%) respondents, 19 (23,5%) respondents said seldom, 31 (37,5%) respondents said sometimes and 17 (20,5%) respondents said always. Moreover, 25 (30,5%) respondents said they never used electronic theses and dissertations, 14 (17,5%) respondents said seldom, 23 (28%) said sometimes and 20 (24%) respondents said always. 31 (37%) respondents said they never used online government gazettes, 23 (28%) respondents said seldom, 16 (19,8%) respondents said sometimes, and 13 (15,2%) respondents said always. 46 (55%) respondents said they never used the “ask a librarian” platform, 15 (18%) respondents said seldom, 17 (20%) respondents said sometimes, and 6 (7%) respondents said always. Finally, 49 (61%) was the number recorded for respondents that never used “chat to a librarian”, 14 (17,5%) respondents said seldom, 11 (14%) respondents said sometimes, and 6 (7,5%) respondents said always.

The results corroborate with the findings of Ambrose, Ogunbodede and Imade (2021) who recorded that a high number of undergraduate students, 71(76%), were frequently using electronic journals. E-books and online databases were occasionally used as compared to the results of this study that identified students who were sometimes using them. The study corroborates with Hendal’s (2020) findings as it recorded that most students are not using electronic theses and dissertations. One of the librarians even commented on the low usage of electronic theses and dissertations.

#### 4.6. STUDENTS’ SATISFACTION WITH EIRS

The third objective of the study was to assess students’ satisfaction towards the use of library EIRs at UL during the COVID-19 pandemic. The assessment was done through a question that was indicated on a questionnaire under section 5.

##### 4.6.1. Respondents’ satisfaction with EIRs

The respondents were asked about their level of satisfaction with EIRs on, to which they responded variously, as shown on Table 4.4. They had to indicate their degree of satisfaction by choosing the statements documented on Table 4.4.

Table 4.4: Respondents' satisfaction towards EIRs

<b>I am satisfied with...</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
The way EIRs and services were introduced to us	4 (4,8%)	3 (3,5%)	31 (38%)	21 (25,5%)	23 (28,2%)
The way EIRs are accessible on the library webpage	2 (2,5%)	5 (6,5%)	24 (30%)	34 (42,5%)	15 (18,5%)
The way librarians support us	6 (7,5%)	7 (8,8%)	32 (40,5%)	21 (25,7%)	14 (17,5%)
With the library's website	3 (2,8%)	6 (7,5%)	29 (35,7%)	23 (29%)	20 (25%)
With EIRs content that is up to date	3 (2,8%)	5 (6,5%)	29 (35,7%)	23 (29%)	21 (26%)

Table 4.5 indicates the respondents' level of disagreement or agreement with specified levels of satisfaction with EIRs and services during COVID-19 pandemic. 31 (38%) respondents were neutral on the way EIRs and services were introduced to them as compared to those who strongly disagreed, disagreed, agreed, and strongly agreed. In terms of the way EIRs are accessible on the library webpage, 34 (42,5%) respondents agreed that they were satisfied in contrast to those who strongly disagreed, disagreed, neutral and strongly agreed. 32 (40,5%) respondents either agreed or disagreed in the way librarians supported them, their response was neutral as compared to those who responded otherwise. 29 (35,7%) respondents were neither dissatisfied nor satisfied with the library's website. They were also neutral in contrast to a few who strongly disagreed, disagreed, agreed, and strongly agreed. Moreover, 29 (35,7%) respondents were neither dissatisfied nor satisfied with EIRs content that is up to date, as opposed to those who strongly disagreed, disagreed, agreed, and strongly agreed. Thus, it was found that a majority of respondents were neither dissatisfied nor satisfied with many statements that were specified in Table 4.5. The



findings of the study relate with those of Wagwu and Obuezie (2018) who recorded that most of the students were somewhat satisfied with the quality or resources in the library, including navigation of electronic journals and research activities. Furthermore, Kuwaiti (2020) concurs with the findings of the study that discovered that students are satisfied with the accessibility of EIRs, with a highest sigma rating of  $2.5\sigma$ . The lowest rate  $2.2\sigma$  was indicated on the aspect 'services of the library'. Kuwaiti's (2020) findings relate with the results of the study because students highlighted that they adapted to using EIRs during the COVID-19 pandemic, but their level of satisfaction was neutral. Therefore, academic libraries can improve their service levels to reach students' satisfaction level.

Based on the five dimensions of the SERVQUAL Model, namely; reliability, tangibles, responsiveness, assurance and empathy, respondents were neither satisfied nor dissatisfied with the aspects mentioned on table 4.5. Results depict that the quality of service did not meet the respondents' level of satisfaction to an extent that could attract them to using the library's website (tangibles). However, the librarians understood their clients' information needs (empathy) and were available to assist all the time (responsiveness). Parasuraman et al. (1988) state that SERVQUAL dimensions are used to assess the quality of service. Satisfaction is determined by the quality of service. Thus, if the quality of service is not up to standard, undergraduate students will not be satisfied. Furthermore, the Comprehensive Information Seeking Model emphasises the importance of trust and faith when using information resources. The satisfaction level of undergraduate students was neutral, which could result in the lack of trust and faith on EIRs (Hartoonian, Ormseth, Hanson, Bantum, & Owen, 2014). Undergraduate students become satisfied when their expectations are met (Patil & Sawant, 2017). Nelson and Tugwell (2022) point out that the fact that undergraduate students tend to use readily packaged EIRs, such as lecture notes and recommended articles, should not be overlooked. This can result in undergraduate students neither satisfied nor dissatisfied with EIRs.

#### 4.7. CHALLENGES ENCOUNTERED BY STUDENTS WHEN USING EIRS AND SERVICES

The fourth objective of the study was to identify the challenges experienced by undergraduate students when using library EIRs and services at the UL during and after the COVID-19 pandemic. The question was asked on section 6 of the questionnaire. The researcher wanted to understand the challenges encountered by the students during and post COVID-19 pandemic. Noteworthy, the results were presented during the COVID-19 pandemic.

##### 4.7.1. Challenges encountered by respondents when accessing EIRs and services

Figure 4.10 summarises the responses of respondents when asked to indicate challenges they faced when accessing EIRs and services. They could select as many options as possible.

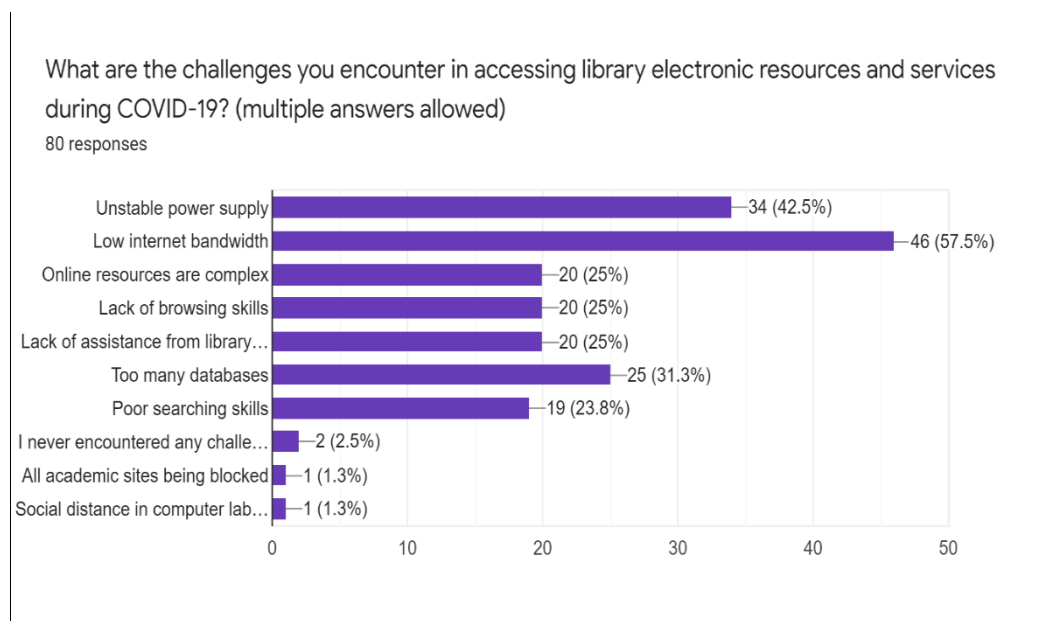


Figure 4.10: Challenges related to the respondents' access to EIRs

46 (57,5%) respondents cited low internet bandwidth as a major challenge they encountered when accessing information resources and services. 34 (42,5%) respondents reported unstable power supply as another challenge, 20 (25%) respondents cited certain online resources as too complex for them, lack of browsing skills and lack of assistance from library staff also formed part of the challenges. 25

(31, 3%) respondents recorded that there were too many databases whereas 19 (23, 8%) respondents said they had poor searching skills. The respondents were further given an opportunity to identify other challenges the researcher did not cover. 2 (2, 5%) respondents said they had never faced any challenges, 1 (1, 3%) said all academic sites were blocked and another 1 (1, 3%) respondent said social distance in computer laboratories disadvantaged them as a limited number of people were supposed to be in the laboratories at a particular time.

An information seeking journey has challenges and that is because, before an information need is fulfilled, one should experience impediments (Tubachi, 2018). One of the challenges was that undergraduate students complain about too many databases. The Comprehensive Information Seeking Model addressed the importance of an information carrier (Johnson *et al*, 1995). The content structure and language of the carrier should be user friendly. An electronic information resource must be credible and utilised at the right time. Therefore, too many databases confused undergraduate students. As such, it was difficult for them to navigate the relevant databases. This supports the findings of Ugwu and Orsu (2017) and Nnadi (2016) who discovered that a majority of students faced difficulties such as inadequate bandwidth, recurring power-cuts and large mass of information that is difficult to filter and limited access to gadgets. Ifijeh and Yusuf's (2020) findings indicate that low power supply and poor technological infrastructure are the challenges Nigerian academic libraries encountered. Load shedding negatively impacts students in South African higher education institutions. Online learning requires students to be active on their gadgets. Unfortunately, those gadgets do not have a signal because of the rotational load shedding that occurs in the country (Qakoshe, 2022). Load shedding was a challenge to the respondents as they were forced to either wait or leave their households to access EIRs during COVID-19 pandemic. Socio and economic imbalances became visible as majority of the respondents reside in rural communities and network signal is low as compared to urban areas (Qakoshe, 2022; cf. Lai & Widmar, 2020). The challenges encountered by the respondents could have contributed to their level of satisfaction and dissatisfaction as it was difficult for them to access EIRs because of power outages and intermittent power supply. It was compulsory for the respondents to be online to access EIRs.

#### 4.8. RESPONSES FROM THE LIBRARIANS

The second set of questions was directed to the librarians attached to UL library. The questions sought to address the objectives that were drafted on an interview schedule. The themes that emerged were:

- EIRs made available to students during COVID-19.
- Librarians' support towards students during the COVID-19 lockdown.
- Library's availability during the COVID-19 lockdown.
- Marketing EIRs during the COVID-19 lockdown.
- The use of EIRs during the COVID-19 compared to before COVID-19.
- Challenges encountered when providing services remotely to users.
- Librarians' way of dealing with challenges.

##### 4.8.1. EIRs made available to students during COVID-19

Interviewees were asked to identify the EIRs they made available to students during the COVID-19 lockdown. Electronic databases, libguides, electronic books and electronic journals emerged from the remarks made. Remarks were as follows:

Librarian 1 indicated that: *"E-books, e-databases and e-journals were made to be accessible off-campus and students were using single-sign on all electronic resources and the library catalogue"*.

When the researcher asked a follow-up question on institutional repository, a remark such as *"an institutional repository was not part of the resources that were readily available"* was made.

Librarian 2 indicated that: *"Databases, ebooks and libguides"*.

Librarian 3 indicated that: *"Electronic journals, Electronic Books and electronic reserves, and previous question papers are available during COVID-19"*.

Thus, all the interviewees mentioned that there were EIRs that were made available to students. The results corroborate those of Rafiq, Batool, Ali and Ullah (2020) and Fasaie, Adekoya and Adegbilero-Iwari (2020), which revealed that databases, e-books and e-journals digital resources were made available to students during the COVID-19 pandemic. Off-campus access to digital resources was granted to students to enable them to access library resources. Some electronic resources that were made

available to the students were thesis and dissertation repositories. Librarians were scanning books and sending them to students to do their schoolwork. Academic libraries in Pakistan implemented a hybrid model to run their services amid the COVID-19 pandemic.

#### 4.8.2. Librarians' support to students during the COVID-19 lockdown

The interviewees were asked to remark on how they supported students during the COVID-19 lockdown. In their responses, it emerged that they offered virtual information literacy and bibliographic sessions to students. Their responses were recorded thus:

Librarian 1 indicated that: *“Librarians communicated with schools and lecturers to organise students to attend bibliographic instruction and information literacy sessions, however very few students were attending sessions”*.

Librarian 2 indicated that: *“By making available resources and services remotely and onsite”*.

Librarian 3 indicated that: *“We offer virtual training or bibliography Instruction to students. We also teach the 1<sup>st</sup> entering students Information Literacy. Inter-Library Loans is still running even during COVID-19 pandemic. We also do a literature search for students who send their research topics and the citations to retrieve the full-text articles for them”*.

The results complement those of Mbambo-Thata (2020) who recorded that students were registered on a digital library system to grant them access to EIRs. Librarians documented instructions on how EIRs could be accessed off campus. Parasuraman et al. (1988) mentioned responsiveness and empathy as part of the dimensions of service quality. The librarians were willing to assist students and were communicating with the lecturers to encourage them to attend bibliographic instruction sessions. Due to problems of network connectivity and power outages, librarians empathised with students by recording bibliographic sessions for them to be accessed at a later stage.

#### 4.8.3. Library's availability during COVID-19 lockdown

Regarding how the library was made available to assist students during the COVID-19 lockdown, the interviewees mentioned that EIRs were readily available 24/7 and could be accessed onsite and remotely. They said:

Librarian 1 indicated that: *"Librarians were sending libguides to schools get more students to use EIRs and services"*.

Librarian 2 indicated that: *"The library has remote access to most resources but print with minimal access"*.

Librarian 3 indicated that: *"The library e-resources are available 24/7 to assist students during COVID 19. It is also open for the students who are permitted to enter the campus"*.

Okike's (2020) study on information dissemination in an era of the COVID-19 pandemic reported that librarians discovered methods that can be used to disseminate information to many users. Hence, users were able to access electronic information using mobile gadgets with the help of librarians. Therefore, the findings corroborate the results of this study.

#### 4.8.4. Marketing EIRs during COVID-19 lockdown

There were various marketing tools librarians used to make students aware of EIRs. In the response below it emerged that email address, library webpage and libguides were used to make students aware of EIRs. Concerning how librarians made students aware of EIRs during COVID-19 lockdown, the interviewees said:

Librarian 1 indicated that: *"Library used keyaka email addresses to reach out students and shared libguides and engage with schools"*.

Librarian 2 indicated that: *"Subject librarians market the services and resources to their respective schools and the library webpage and the libguides are resourceful in that case"*.

Librarian 3 indicated that: *"By sending emails to the students, during training sessions organised by Library and Research office as well as on Facebook"*.

The results corroborate the findings of Okike (2020) who states that librarians found that social media was suitable to market electronic information. UL librarians were using Facebook, which is one of social media sites, to engage with the students.

#### 4.8.5. The use of EIRs during COVID-19 compared to before COVID-19

Interviewees were given an opportunity to compare the use of EIRs before and during COVID-19. It was established that the usage level increased during COVID-19 pandemic as compared to before. This was supported by the some of the interviewees:

Librarian 1 indicated that: *“The usage has increased; however, most students are not using keyaka emails, so they end up missing important information”*.

Librarian 2 indicated that: *“The usage varies within faculties, yet it has increased tremendously due to limited access to print”*.

Librarian 3 did not respond to this question. Overall, it was found that the use of EIRs has remarkably increased during the COVID-19 pandemic. Connell, Wallis and Comeaux (2021) support the results of this study by stating that the use of databases, libguides and “Ask a librarian” increased during COVID-19.

#### 4.8.6. Challenges encountered in providing services remotely to users

Librarians connect students with information (Johnson, 2018). Interviewees were asked to mention the challenges they faced when providing information services to students. Interviewees quoted technological issues such as lack of laptops and training for librarians, unstable network, and students not using their university email addresses. This statement was supported by the remark:

Librarian 1 indicated that: *“Laptops and data for internet connectivity were delivered late to librarians. It was difficult for them to serve students at the start of lockdown. Lack of understanding of open access from lecturers hence the institutional repository does not have recent research outputs. Thesis and dissertations are not submitted to the library on time so that they can be uploaded on institutional repository. Lecturers are not keen on understanding open access, they do not want to share their scholarly articles with the library”*.

A remark about lack of understanding of open access from lecturers emerged when the researcher asked a follow-up question on whether librarians were marketing institutional repository to students.

Librarian 2 indicated that: *“Sometimes we encounter technological challenges, like the system being down or some databases not accessible through some browsers”*.

Librarian 3 indicated that: *“Yes, there are challenges, some of the students do not have access to emails, some are experiencing network problems, and some do not attend training because they say they do not have data. The other challenge is that there are students who are not able to use technology”*.

Librarians encountered technological challenges during the COVID-19 pandemic. Chakraborty and Jana (2021) cited librarians who also complained about inadequate training on handling digital library systems. Librarians should continue to teach lecturers about the importance of open access even though the results revealed that lecturers are reluctant to adopt open access even when librarians are teaching them about it. Due to the impediments that were faced by librarians, respondents could not be assured that their needs would be attended to, which could negatively impact their satisfaction levels.

#### 4.8.7. Librarians' way of dealing with challenges

When the interviewees were asked how they dealt with the challenges they encountered, one major theme emerged, that is, recording of information literacy and bibliographic instruction sessions for students, which was stated thus:

Librarian 1 indicated that: *“When we were not coming to the office to assist students, we were going to campus to attend school body meetings to remind lecturers about trainings that are offered in department of library services for students”*.

Librarian 2 indicated that: *“By being in constant contact with our technicians or resorting to source out the resources and sent to the clients”*.

Librarian 3 indicated that: *“We try to record the sessions that we have with students so that those who did not attend will be able to find the session at the later stage”*.

The way librarians dealt with the challenges faced during the COVID-19 pandemic enabled them to be more technologically savvy and to be mindful of students' needs.



Tunga (2021) encouraged the idea that librarians should become technologically savvy, by mentioning that librarians should acquire skill sets that will enable them to work with technology. The results corroborate Asif and Singh's (2020) suggestions who state that librarians can conduct seminars by using audio-visual interactive tools such as Microsoft Teams, Google meet, and Zoom. Sessions can be recorded for delegates that did not attend the meeting to catch up. Delegates can also send documents on that interactive tool and discuss amongst themselves. Librarians in this study were also recording sessions for students who did not attend information literacy sessions. Omeluzor, Nwaomah, Molokwu and Sambo (2022) concur that there was insufficient and at some point, no provision of data to enable librarians to work from home.

#### 4.9. CHAPTER SUMMARY

This chapter presented and analysed the data that was collected for this study using survey descriptive research design. Both quantitative and qualitative data were collected using an online questionnaire and interview schedule, respectively. The discussion of the results and findings were based on the structure of an online questionnaire. It consisted of six sections. The first section included a brief instruction of the questionnaire, the second section covered biographical information, the third to sixth sections addressed the objectives of the study. The next chapter is the final chapter of the study, which presents the summary of findings, conclusion and recommendations of the study.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. INTRODUCTION

The aim of this chapter is to summarise the findings of the study in view of the theoretical framework and objectives of the study, final conclusions of the study and make recommendations based on the findings. The objectives of the study were to:

- Determine undergraduate students' levels of satisfaction with EIRs at the UL library.
- Identify the extent to which undergraduate students use the EIRs at the UL library during COVID 19 pandemic.
- Assess students' satisfaction with the use of library EIRs and services at UL during the COVID-19 pandemic.
- Identify the challenges experienced by undergraduate students when using library EIRs at UL during and after the COVID-19 pandemic.
- Establish the types of EIRs the library made available to students amid the COVID-19 pandemic.

#### 5.2. SUMMARY OF FINDINGS

Based on the objectives of the study mentioned in Chapter One, section 1.4.2, the study established that:

- Undergraduate students at UL are aware of EIRs.
- Undergraduate students at UL are using EIRs.
- UL undergraduate students are somewhat satisfied with the EIRs the library offers.
- Low internet bandwidth, unstable power supply and too many databases emerged as challenges undergraduate students encountered when accessing EIRs during the COVID-19 pandemic.
- Librarians at UL library made EIRs available to students.

### 5.2.1. Students' awareness of EIRs

UL undergraduate students are aware of EIRs such as electronic journals, electronic books, online articles, online magazines, and online newspapers. Undergraduate students are slightly aware of the institutional repository, online government gazettes and law documents. Library orientation and information literacy sessions emerged as the strategies that enabled undergraduate students to be aware of EIRs. They were also aware of EIRs before COVID-19 pandemic.

### 5.2.2. The use of EIRs by students

Undergraduate students were always using EIRs even before COVID-19 pandemic. The findings of the study show that undergraduate students were always using electronic journals as compared to other EIRs. Moreover, there was a continuous usage during the COVID-19 pandemic, which means that EIRs reached the respondents at the right time.

### 5.2.3. Students' satisfaction with EIRs

A trend of students' satisfaction with EIRs indicates that undergraduate students were neither satisfied nor dissatisfied with EIRs at UL. The satisfaction level of undergraduate students was neutral.

### 5.2.4. Challenges students encountered when accessing EIRs

UL undergraduate students were facing challenges such as low internet bandwidth, unstable power supply and too many databases during the COVID-19 pandemic when accessing EIRs. During lockdown, students were accessing EIRs from home. Majority of students reside in rural areas and network connectivity in those areas is very poor. Unstable power supply also hindered undergraduate students from accessing EIRs. Unstable power supply is caused by load shedding and load reduction that is implemented by the power supply company to ease constraints on established infrastructure. Undergraduate students find it difficult to navigate many electronic databases hosted by the academic library when there is no electricity.

### 5.2.5. EIRs that were made available to students during COVID-19 pandemic

Librarians made electronic books, electronic journals, electronic databases and libguides available to undergraduate students at UL during the COVID19 pandemic.

Librarians also offered online bibliographic instructions sessions to undergraduate students. Lecturers were advised by librarians to encourage students to attend online bibliographic sessions and information literacy sessions. The COVID-19 pandemic enabled academic libraries to focus more on transforming their digital world; hence, UL librarians ensured that students could access the library 24/7 through EIRs. Librarians marketed EIRs through students' keyaka emails, meetings with lecturers, during information literacy sessions with undergraduate students and social media platforms such as Facebook. Librarians observed an increased utilisation of EIRs during the COVID-19 pandemic. Librarians also encountered challenges when providing services to undergraduate students. For instance, librarians were working from home during Lockdown level 5. However, they still continued to serve students. Librarians were also facing technological issues such as system outages and some databases being inaccessible. Laptops and 3Gs were delivered late to librarians. It was, therefore, difficult for them to work remotely. It was also difficult for them to reach out to many students as some they complained about lack of data for connectivity and low bandwidth. Lecturers did not seem to understand the importance of open access, which made it difficult for the librarians to market the institutional repository.

UL librarians recorded information literacy sessions to accommodate students who did not attend. Furthermore, they created relationships with technicians to ease communication when they experienced system outages. Lastly, they attended School and Faculty meetings to determine the best possible ways of reaching out to undergraduate students. The SERVQUAL Model developed by Parasuraman et al. (1988) was applied by librarians when they empathised with undergraduate students and were responsive by providing online services. Attendance of Faculty meetings and communicating with lecturers, was a way of librarians assuring students that they were virtually available to provide services.

### 5.3. CONCLUSIONS

The study examined the use of EIRs by students at the UL amid the COVID-19 pandemic. The following are the conclusions of the study:

### 5.3.1. Students' awareness of EIRs

EIRs were readily available for students to use. Majority of undergraduate students are aware of EIRs, and prefer to use other EIRs found directly on the Google search engine. Library orientation and information literacy sessions appeared to be platforms that make students aware of EIRs. The COVID-19 pandemic did not impact students' awareness of EIRs as a majority of the students indicated that they were aware of these resources even before the COVID-19 pandemic.

### 5.3.2. The use of EIRs by students

UL undergraduate students were always using EIRs during the COVID-19 pandemic. They sometimes used EIRs even though they still needed to understand how "chat with a librarian" and "ask a librarian" work.

### 5.3.3. Students' satisfaction with EIRs

Undergraduate students were neither satisfied nor dissatisfied with the way EIRs were introduced to them, their accessibility on the library's webpage, the support they get from librarians, the library's website, and the content of EIRs. Therefore, there is a need for Department of Library Services at UL to improve their services to meet the students' expectations.

### 5.3.4. Challenges faced by the students when utilising EIRs

Unstable power supply and low internet bandwidth were some of the impediments that the students faced when using EIRs. Too many databases made it difficult for the students to utilise EIRs effectively. The university management's support was sufficient; however, the challenges stated here were beyond the university control. Therefore, the government should intervene by increasing the internet bandwidth in rural areas for students to access electronic information remotely.

### 5.3.5. EIRs made available to students

UL librarians made EIRs such as e-databases, e-books, e-journals and libguides available to students. They offered an online bibliographic instruction session for students and ensured that EIRs are accessible to students 24/7. Lack of training,

unstable power supply, system outages and low internet bandwidth were some of the barriers librarians had to face when providing services to students. However, it was difficult for librarians to get in touch with students; hence, they created and recorded online bibliographic sessions for students. Recorded sessions can be accessed anytime by students. Therefore, UL librarians tried their best in supporting the students amid the COVID-19 pandemic, despite facing challenges, some of which were even beyond the university's control.

#### 5.4. RECOMMENDATIONS

To encourage UL undergraduate students to use EIRs, the following recommendations are made:

- The UL Department of Library Services should support undergraduate students by marketing EIRs on multiple social media platforms and webpages should be managed often to increase students' level of awareness. 3D printing, poetry clubs, and other competitive activities that can make students use the library.
- The UL Department of Library Services should create videos for bibliographic instructions sessions so that students can access them in their own time using tools such as YouTube.
- The library's website should be user-friendly and attractive to undergraduate students. Chatbot can be introduced on the library's website to ease communication between the library and students. The Department of Library Services should create a poll for students to rate librarians after providing services to them. Constant checking on client experience can assist librarians to better their services.
- Considering the challenges that were provided by students, some of the challenges are beyond the University's management. Therefore, the researcher recommends that the government should take part in improving network connectivity in rural areas to bridge the digital divide.
- Having established that librarians did not receive training on Blackboard, the researcher recommends that librarians should organise training with the service providers of an application to understand the functionalities and how they can support students using the application.

- Having found that institutional repository is not updated with recent theses, dissertations and other university publications, the researcher recommends that UL top management should support librarians in encouraging faculties and supporting divisions to submit theses, dissertations and other research outputs to the institutional repository and market it to the students. This will enable UL to manage their knowledge base effectively.
- The University management should prioritise the Department of Library Services by providing them with laptops and technological gadgets that will enable them to work remotely.

### 5.5. LIMITATIONS OF THE STUDY

The study area was UL and the research subjects were undergraduate students in the Faculty of Humanities registered for the academic year 2021. The researcher considered examining the use of EIRs by undergraduate students in this Faculty. The Faculty has three schools, namely; Education; Languages and Communication Studies and Social Sciences. Due to limited access to other schools and programmes within the Faculty, the researcher through the advice of the supervisors decided to focus on three Programmes under the Department of Communication, Media and Information Studies. Those Programmes were Media Studies, Information Studies and Communication Studies. The participants were selected using stratified and systematic sampling. An online questionnaire was sent out to selected students, the response rate was very low as most of them were not utilising *keyaka* emails addresses often.

### 5.6. CHAPTER SUMMARY

This chapter summarised the main findings of the study considering the objectives, made conclusions and recommendations based on the findings of the study. Further research could focus on the management of institutional repositories as knowledge base tools of UL and the perception of UL lecturers towards open access.

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APPENDIX 1: QUESTIONNAIRE

**INSTRUCTIONS**

1. Use a tick [√] to select your answer
2. Multiple answers are allowed only when stated.

**Section A: Biographical information**

Participant – Number (e.g. 1, 2, 3): .....

1
---

**Question 1**

	25 - 35	36 - 45	46 - 55	+55
Please state your age:	<b>2</b>	3	4	5

2-5	

**Question 2**

	Black	White	Indian	Coloured
What is your race group?:	<b>6</b>	7	8	9

6-9	

**Question 3**

	Grade 12	Certificate course	Diploma	Bachelor's Degree	MA Degree
What is your highest educational qualification in ICT?	10	11	12	13	14

10-14	

**Question 4**

	Urban	Rural	Semi-urban
Please state your area type	15	16	17

15-17	

**Question 5**

How do you access internet?

Mobile data	Wi-Fi	Fibre	Virtual Private Network	Modem
18	19	20	21	22

18-22	

**Question 6**

Do you own one or more of the following gadgets?

Smartphone	Laptop	Desktop	Laptop	I do not own any gadget.
23	24	25	26	27

23-27	

**Question 7**

Please select your level of study?

First year	Second year	Third year	Fourth year
28	29	30	31

28-31	

**Section B: Awareness of library electronic resources and services**

1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Very much aware, 5 = Extremely aware

<b>Question 8</b>	<b>Not at all</b>	<b>Slightly</b>	<b>Moderately</b>	<b>Very much aware</b>	<b>Extremely aware</b>
How well are you aware of the following library electronic resources and services (multiple answers allowed)	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
32. Electronic databases					
33. Institutional repository					
34. OPAC					
35. E-books					
36. E-journals					
37. E-theses and dissertations					
38. Online magazines					



39. Online newspapers					
40. Online articles					
41. Online government gazettes and law documents					

**Question 9**

How did you become aware of electronic resources and services? (multiple answers allowed)

42. Library orientation	1	45. Library social media pages	4
43. Library web site	2	46. Friends	5
44. Library use education	3	47. Other (please specify):	6

**Question 10**

When did you become aware of e-resources and services?

Before COVID-19	Not aware at all	During COVID-19
48	49	50

48-50	

**Section C: Extent to which students use library electronic resources**

**Question 11**

How often do you use electronic resources and services?

<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>
1	2	3	4
51	52	53	54

51-54	

1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often

<b>Question 12</b> How often do you use the following library electronic resources (multiple answers allowed)	<b>Never</b>	<b>Seldom</b>	<b>Sometimes</b>	<b>Often</b>
	1	2	3	4
55. Electronic databases				

56. Institutional repository				
57. E-books				
58. E-journals				
59. Online newspapers				
60. Online magazines				
61. Online Public Access Catalogue				
62. E-theses and dissertations				
63. Online government gazettes				
64. Ask a librarian				
65. Chat to librarian				

#### **Section D: Satisfaction of undergraduate students towards electronic resources and services**

**1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree**

<b>Question 13</b>	<b>Strongly disagree</b> <b>1</b>	<b>Disagree</b> <b>2</b>	<b>Neutral</b> <b>3</b>	<b>Agree</b> <b>4</b>	<b>Strongly agree</b> <b>5</b>
I am satisfied with.... (multiple answers allowed)					
66. The way library EIR and resources were introduced to us					
67. The way EIR are accessible on the library web page					
68. The way librarians support us					
69. With the library's website					
70. With library electronic resources content that is up to date					

**Section E: Challenges encountered by students in using library electronic resources and services**

<b>Question 14</b>			
What are the challenges you encountered in accessing library electronic resources and services? (multiple answers allowed)			
71. Unstable power supply		75. Uncooperative library staff	
72. Low internet bandwidth		76. To many databases	
73. Online resources are complex		77. Poor searching skills	
74. Lack of browsing skills		78. Other:	

## APPENDIX 2: INTERVIEW SCHEDULE FOR LIBRARIANS

**Question 1** Which electronic resources and services were readily available during COVID-19?

--

**Question 2** How did you support students during the COVID-19 pandemic?

--

**Question 3** How is the library available to assist students during COVID-19 lockdown

--

**Question 4** How did you make library users aware of those resources that can be use used during the COVID-19 pandemic?

--

**Question 5** How is the use of Library EIR during COVID-19 compared to before COVID-19?

--

APPENDIX 3: TREC COVER LETTER



**UNIVERSITY OF LIMPOPO**

**Faculty of Humanities**

**School of Languages and Communication Studies**

**Private Bag X1112, Sovenga, 0727, South Africa**

**Tel: (015) 268 4012, Fax: (015) 268 2868, Email:tebogobadimo82@gmail.com**

-----  
*University of Limpopo*  
*Turfloop Research Ethics Committee*  
*P O Box X1106*  
*Sovenga*  
*0727*

Dear Sir/Madam

**REQUESTING A PERMISSION FOR MS. TPD BADIMO [REDACTED] TO CONDUCT RESEARCH AT UNIVERSITY OF LIMPOPO.**

This serves to formally introduce the above named as an MIS student in the Department of Media, Communication and Information Studies at University of Limpopo. Ms. T.P.D Badimo has proposed to conduct research on a research project titled *the use of academic library EIRs by selected undergraduate students at the University of Limpopo during Coronavirus pandemic.*

Ms TPD Badimo research proposal is on the process of approval at the Higher Degrees and Research Committee of the school of Languages and Communications. Ms. TPD Badimo would like to collect data for the research project by way of distributing questionnaires to students residing at faculty of humanities and interview librarians at DLS. You are therefore requested to permit Ms. T.P.D. Badimo to distribute questionnaires and conduct interviews at DLS.

The researcher will share the findings of the study with the department of library services and assist in the implementation of the recommendations. For any further information about Ms. T.P.D. Badimo please do not hesitate to contact the undersigned.

Thank you for your kind assistance.

Yours sincerely

.....  
M.J. Boloka – Supervisor

.....  
Date

APPENDIX 4: DLS COVER LETTER



**UNIVERSITY OF LIMPOPO**

**Faculty of Humanities**

**School of Languages and Communication Studies**

**Private Bag X1112, Sovenga, 0727, South Africa**

**Tel: (015) 268 4012, Fax: (015) 268 2868, Email:tebogobadimo82@gmail.com**

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*University of Limpopo  
Department of Library and services  
P O Box X1106  
Sovenga  
0727*

Dear Sir/Madam

**REQUEST FOR PERMISSION TO CONDUCT THE STUDY**

I am Badimo, T.P.D., student number [REDACTED], currently pursuing a Master of Information Studies at the University of Limpopo. I hereby request to permission to collect data. The title of the research is ***the use of academic library EIRs by selected undergraduate students at the University of Limpopo during Coronavirus pandemic***, supervised by M.J. Boloka.

My main purpose is to collect data to understand how librarians provided library electronic resources to students during the COVID-19 pandemic. You are most welcome to be aware of the following:

- Participation is voluntary.
- Please do not write your names during interviews.
- You can discontinue responding to the questions should you feel that your rights are violated.
- Please sign the consent form if you are ready to participate in the study.
- The interview will be recorded, kindly feel free to stop the recording process should you feel that your rights are violated.

Your participation would be highly appreciated.

Yours sincerely

Badimo TPD.



**UNIVERSITY OF LIMPOPO**

**Faculty of Humanities**

**School of Languages and Communication Studies**

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*University of Limpopo  
Dean of faculty  
P O Box X1106  
Sovenga  
0727*

Dear Sir/Madam

**REQUESTING A PERMISSION FOR MS. TPD BADIMO [REDACTED] TO CONDUCT RESEARCH AT UNIVERSITY OF LIMPOPO.**

This serves to formally introduce the above named as an MIS student in the Department of Media, Communication and Information Studies at University of Limpopo. Ms. T.P.D Badimo has proposed to conduct research on a research project titled *the use of academic library EIRs by selected undergraduate students at the University of Limpopo during Coronavirus pandemic.*

Ms TPD Badimo research proposal is on the process of approval at the Higher Degrees and Research Committee of the school of Languages and Communications. Ms. TPD Badimo would like to collect data for the research project by way of distributing questionnaires to students residing at faculty of humanities. You are therefore requested to permit Ms. T.P.D. Badimo to distribute questionnaires.

The researcher will share the findings of the study with the department and assist in the implementation of the recommendations. For any further information about Ms. T.P.D. Badimo please do not hesitate to contact the undersigned.

Thank you for your kind assistance.

Yours sincerely

.....  
M.J. Boloka – Supervisor

.....  
Date

APPENDIX 6: INFORMED CONSENT

I hereby agree to participate in the research ***the use of academic library EIRs by selected undergraduate students at the University of Limpopo during Coronavirus pandemic***. I understand that I am participating voluntarily, and the researcher did not force me to participate. I also understand that I can stop this interview / filling in questionnaire at any point should I feel that my rights are violated.

I understand that this is a research project whose purpose is not to benefit me.

I understand that this is consent from will not be linked to the questionnaire and that my answers will remain confidential.

I understand that completed research will be given to the Department of Library Service.

.....

Signature of participant

.....

Date





**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:** 08 June 2021

**PROJECT NUMBER:** TREC/89/2021: PG

**PROJECT:**

**Title:** The use of academic library EIRs by students at the University of Limpopo during the COVID-19 pandemic environment.

**Researcher:** TPD Badimo

**Supervisor:** Ms MJ Boloka

**Co-Supervisor/s:** Prof ST Bopape

**School:** Languages and Communications Studies

**Degree:** Master of Information Studies

**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.

