

**TOWARDS CRITICAL LIBRARIANSHIP FRAMEWORK FOR  
ENHANCING RESEARCH SUPPORT SERVICES FOR DOCTORAL  
STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN  
KENYA**

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**DECLARATION**

I declare that this thesis is my original work and has not been presented for an award of a degree in any university.




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## **DEDICATION**

To my wonderful children, Sharleen, Wayne, Zawadi, and Janelle. You have been my inspiration and not forgetting my dear husband for the moral support he accorded all through.

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## ABSTRACT

University libraries today operate in a dynamic, technology-driven environment that requires them to continuously adapt and enhance research support services in order to meet the evolving needs of proactive researchers. The ever-changing and dynamic scholarly environment calls for examining university library research support services since doctoral students depend on university libraries for information. As university libraries work to improve RSS and, to assist doctoral students, there was a need to assess their preparedness and conformity to 21st-century information ideals. This study investigated how a critical librarianship approach could enhance research support services among doctoral students in selected public university libraries in Kenya. Specifically, this study examined the existing research support services for doctoral students, assessed the extent of research support services utilization by doctoral students, established strategies used by university libraries to offer research support services for doctoral students, and identified challenges faced by libraries in providing research support services. To achieve these objectives, this study was guided by critical librarianship theory. The research adopted a pragmatic paradigm, which provided a basis for using mixed research methods encompassing qualitative and quantitative approaches in the form of a convergent parallel research design. The study population were doctoral students, university librarians, and library staff involved with research support services from universities in Kenya. The study purposively selected eight universities and respective libraries from whom data was collected from 283 doctoral students through a questionnaire, 26 library staff, and seven university librarians using semi-structured interviews. Quantitative data was analyzed using descriptive analysis using SPSS, while qualitative data was analyzed thematically using ATLAS.ti. Quantitative data was presented using tables and charts, while qualitative data was presented as narratives and appropriate verbatim quotes. The study findings showed that university libraries offered a range of RSS, library resources were the most used by doctoral students, and research impact services were the least used. The strategies used to empower the students were online and face-to-face instructional services and collaborations with research scientists. The challenges found include poor communication, inadequate qualified staff to provide research services at the doctoral level, and unavailability of doctoral students. The study concluded that the provision and use of RSS for doctoral students in specific university libraries vary from one service to another, and several strategies to empower doctoral students were used by university library staff, albeit with several difficulties emanating from both the university libraries and doctoral students. The study recommended recruitment of adequate and competent library staff to adequately guide doctoral students, and vigorous awareness creation and sensitization campaigns on crucial research support. The findings will inform the development of critical librarianship programs and initiatives and offer insights on strategies to market RSS effectively. The proposed framework would ideally guide university libraries in enhancing the availability and usability of RSS.

Keywords: Research Support Services; User Empowerment; Librarian Empowerment; librarian power; User Disempowerment, critical librarianship; University Libraries; Kenya

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>ACRL:</b>	Association of College and Research Libraries
<b>AI:</b>	Artificial Intelligence
<b>CAS:</b>	Current Awareness Services
<b>CUE:</b>	Commission for University Education
<b>ERC:</b>	Ethic and Research Committee
<b>ICT:</b>	Information and Communication Technology
<b>IL:</b>	Information Literacy
<b>IP:</b>	Intellectual Property
<b>KARU:</b>	Karatina University
<b>KU:</b>	Kenyatta University
<b>LMS:</b>	Learner Management Software
<b>MU:</b>	Moi University
<b>NARCOSTI:</b>	National Council for Science and Technology
<b>OA:</b>	Open Access
<b>PhD:</b>	Doctor of Philosophy
<b>RDM:</b>	Research Data Management
<b>RDS:</b>	Research Data Services
<b>RIS:</b>	Research Impact Services
<b>RSS:</b>	Research Support Services
<b>SPSS:</b>	Statistical Package for the Social Sciences
<b>TUK:</b>	Technical University of Kenya
<b>TUM:</b>	Technical University of Mombasa
<b>UK:</b>	United Kingdom
<b>UL:</b>	University Librarian
<b>UoE:</b>	University of Embu
<b>UON:</b>	University of Nairobi
<b>USA:</b>	United States of America

## **DEFINITION OF TERMS**

### **University Libraries**

According to Morillas (2022), A university library is a central resource hub that supports academic activities, including learning, teaching, and research, while also contributing to the efficient operation and management of the university. For this research, university libraries are libraries in university institutions that support, research, teaching, learning and community services.

### **Critical Theory**

Critical theory is a framework for understanding social structures and social phenomena by examining the struggles between domination and liberation (Branum & Masland, 2017; Devetak, 2013).

### **Critical Librarianship**

It is a movement of library workers dedicated to bringing social justice principles into libraries services (Critlib, 2022). According to Rapchak (2021), critical librarianship, critiques the role of libraries and information professionals in maintaining systems of oppression, has been growing in popularity in the profession, and instructors in Library and Information Science (LIS) have begun to address it in their coursework.

### **Postgraduate Students**

A postgraduate student is someone who has already obtained a degree from a university or any other institution of higher education and is now pursuing further advanced studies for a higher qualification (Stevenson, 2010). For the purpose of this research, a postgraduate student refers to someone who is currently enrolled in and pursuing graduate or further studies at the university level after completing their first degree.

## **Research**

According to Gisbert and Chaparro (2020), research is the application of scientific knowledge which is useful in socio-cultural development. For the purpose of this study, research is the education and learning process in universities that create knowledge and new discoveries to transform humanity in the society.

## **Research Support Services**

Research support services are the backbone of research and academic excellence in universities and research institutions (Pulford et al., 2020). For the purpose of this study, research support services refer to management and provision of specific information services that promote the needs and desires of researchers and scholars in university libraries and institutions.

## **Researchers**

A researcher is someone who conducts investigations to gain new knowledge or systematically establish facts in academic, government, private or industrial institutions (Gisbert & Chaparro, 2020). For the purpose of this study, a researcher implies a scholar who demonstrates through learning and experience specialized knowledge or expertise, conceptual and intellectual abilities, academic skills suchlike ability to produce scholarly and high-quality written works and papers.

## **Researcher Life Cycle**

The term describes the cyclical research process from idea to implementation to dissemination and back to the idea (Gessner et al., 2017).

## **Scholarly Communication**

According to Association of College and Research Libraries (2016), scholarly communication is the process of creating, evaluating, disseminating, and preserving research and scholarly writings.

## **Scholarly Publishing**

Scholarly publication means the procedure of generating, producing, and judging scholarly content, distributing and circulating it to the scholarly community and conserving it for future use, writing and publishing novel academic ideas in scholarly communication outlets (Tella & Onyancha, 2020).

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND TO THE STUDY**

Across the globe, the research environment where academic libraries operate has largely changed, partly owing to technological developments (Bras & DeMillo, 2017; Chaputula & Mutula, 2018). Academic libraries are taking steps to change and move towards wider types of research support services (RSS), such as helping postgraduate students, researchers, and other clients with scholarly publishing, research data management, open access, and intellectual property, among other services (Brown, et al., 2018 & Si et al., 2019). Research support services help researchers strengthen scholarly communication literacy, evaluate and disseminate data and results to the community, and understand how the impact of scholarly output is measured (Rothfritz & Strecker, 2018).

It has become important to shift the research environment to diversify researchers' needs towards new types of services and make research support services more diverse in university libraries (Jubb, 2016). University libraries worldwide are reconceptualizing ways of supporting the research agenda in their respective institutions Richardson et al. (2012). Researchers use traditional library services to support their research, including information literacy training, literature searching assistance, referencing style, and managing citations training. However, according to Abubakar (2011), these traditional services need to reflect better research support services trends in modern university libraries.

Depending on the national context and the institutional research agenda, library's core activities and services should address changing patterns in scholarly communication and researcher needs. Such activities should respond to current trends and help increase research outputs such as research data services, open repositories, assistance on research grant applications and research impact evaluation among others. In addition, academic libraries serve different groups

of users including postgraduate and undergraduate students, academic and administrative staff, and even researchers. Graduate students are perhaps the greatest potential beneficiaries of research support services in academic libraries. Masters' and PhD students often must engage in research as part of their training, which calls for research support services (Rasul & Singh, 2010). However, even though research support services occupy a central role in academia, and more so among postgraduate students, the extent to which these practices are aligned in university libraries in Kenya remains largely unexplored, hence the need for this research.

### **1.1.1 RESEARCH SUPPORT SERVICES**

Research support services are the backbone of research and academic excellence in universities and research institutions (Pulford et al., 2020). According to researchers, research support services are specific information services provided to promote the research needs of library clients in institutions (Leenaraj & Tuamsuk, 2016). Similarly, RSS is an activity that libraries do to support scholarship and research in the parent institutions (Hoffman, 2016). In addition, Daland and Hidle (2016) viewed research support as any service that enables researchers to spend more time on actual research and less on administrative tasks, for example, data entry after data collection. According to Tise et al. (2015) as well as Schoombee (2014), research support services refer to the management and provision of specific information services that enhance the research life cycle process in university libraries.

Research support can be viewed from three lenses: that of research impact of publications and institutions using tools like altmetrics, bibliometrics or webometrics; scholarly communication, which focuses on aspects such as open access movements and institutional repositories; and research data management, which focuses on aspects such as archiving and curation of research (Moll & Moll-Willard, 2019). In this study, research support services refer to the services that

are offered to researchers and scholars during the research process in academic organizations and institutions.

#### **1.1.1.1 Globally Overview Research Support Services**

University libraries worldwide are re-conceptualizing how they support the research agenda in their respective institutions (Richardson et al., 2012). Largely, the value of academic libraries in the 21st century is measured by how well they serve the learning, teaching and research components of their institutions (Howie & Kara, 2022; Wawrzaszek & Wedaman, 2008). Roles of academic librarians involved in user support are evolving from custodians of books into knowledge workers and this has seen their roles change over the years owing to the changing demands of students and academic staff (Cherinet, 2018; González-Alcaide & Poveda-Pastor, 2018).

Accordingly, a 21st-century librarian should play the apomediation role, which include being an information broker, a change agent, a facilitator, an educator, and a business manager as well (Cherinet, 2018; Enakrire, 2019; Nakitare et al. 2020). However, most librarians, especially in developing countries, are oriented towards the provision of traditional library services such as cataloguing, indexing and related services, but exclude research-related services (Pasipamire & Hoskins, 2019). Other scholars such as Onyancha (2018), have also argued that academic libraries in Sub-Saharan African focus on traditional research services, yet need to be equipped in areas such as metrics, scholarly communication, RDM, among others.

Therefore, academic libraries need to reconceptualize the provision of research support services to support their institutional teaching and research goals. From a global perspective, university libraries and information systems have put more emphasis and priority on research and development programs to support and manage teaching, research, learning and community

services. Corral (2012) argued that decreased funding and the need for accountability in higher education spending and research evaluation policies have led to requirements for reforming academic library services, particularly in research support services.

In countries such as the United States of America and the United Kingdom, academic libraries have created special roles appropriately referred to as "scholarly communication librarians" which are aimed at enhancing research support services (Rothfritz & Strecker, 2018). These roles include those on scholarly communication literacy, information quality and legal certainty (barrier to Open Science). Australian academic libraries, on the other hand, have increasingly aligned research support services with assessment criteria used in the national research evaluation exercise (Haddow & Mamtora, 2017). For example, Queensland University in Australia uses e-research as a core driver for research support services. In Spain, the contexts in which academic libraries provide information services have changed and transformed due to the transition from print to digital information (Borrego & Anglada, 2018).

According to a survey conducted by Rey et al. (2018), 85% of academic libraries in Spain offer research support services to their users. The primary areas of these services include training, document delivery, reference, and repositories. Other services such as training on issues related to open access and intellectual property, remote access to electronic resources, and research evaluation are also provided in partnership with other university departments. Therefore, research support services mark the beginning of the transformation of libraries from providers of traditional consulting services to intelligence analysis services and even think tank services and tailor-made support services based on the lifecycle of research activities (Tang & Zhang, 2019).

### **1.1.1.2 Research Support Services in Africa**

The presence of research support services in Africa is a journey in progress, and while developments have been witnessed, the progress has been slower than in developed contexts. According to Pasipamire and Hoskins (2019), library roles have traditionally been conceptualized ‘around collection development and information discovery without librarians getting involved in the research process itself.’ This suggests that librarians have over time been at the periphery of the research process, and consequently, have had a reduced understanding of their roles. The evolving research landscape, with technological advancements being the catalyst, has however redefined research support by demanding that librarians be involved in every step of the process (Enakrire, 2019; Schoombee, 2014).

University libraries need to rethink the best ways in which to support the research processes, which are indeed fundamental within the parent institutions (Richardson et al., 2012). The preceding author noted that increased focus on university research, guided by governments’ research agenda, has increased research interest in academic libraries and improved the service. For example, Bitso and Raju (2015) observed that in Uganda, academic libraries were still heavily focused on the provision of traditional services such as borrowing and lending books to their users.

Mutibwa et al. (2015) in their study focused on use of social media for research support among selected university libraries in four countries, and realized that only one out of the four libraries utilized social media for research support. Later studies by Avuglah and Underwood (2019) which examined Research Data Management (RDM) at the University of Ghana revealed that there were challenges related to policies, skills and knowledge on RDM, even though the prospects for RDM were promising. It was noted that the slow progress of research support services was associated with low postgraduate completion rates in Africa. According to Raju et al. (2016), postgraduate students who receive inadequate support from their academic

libraries faced many research-related challenges, for instance, a lack of academic publishing skills or research data management, which consequently slowed their progress and extended their completion time. According to Besseah et al. (2017), low research output by postgraduate students can be improved through digital literacy offered by research support services. Nevertheless, there have been encouraging developments in the recent past with regard to research support in Africa.

In the South African context, Ocholla and Ocholla (2020) observed that owing to the changing higher education context and the proliferation of technological platforms and tools, academic libraries in the country were now offering services such as library as the publisher, use of robotics and Artificial Intelligence (AI), research data services, research commons, among others. This shows some progress as far as research support services is concerned in the Sub-Saharan context. In another study at the University of Venda in South Africa, data indicated that the library was providing most research support services and facilities for postgraduate students, even though there was a need for improvement in terms of library facilities and staff skills (Mahwasane, 2019). In Nigeria, a study was done at Redeemer's University and the Nigeria Natural Medicine Development Agency that examined academic libraries' research support and the challenges associated with the utilization of such services by researchers. That Nigerian study by Adeniran and Oyovwevotu (2019) recommended that academic libraries should take advantage of the opportunities presented by technological advances to improve their research support services.

Some scholars have argued that research support is the backbone of research and academic excellence in universities in Sub-Saharan African institutions, for example those in South Africa and Uganda (Tise et al., 2015; Pulford et al., 2020; Schoombee, 2014). For university libraries, research support and development are fundamental cultural and socio-economic aspects of information and knowledge management. Onyancha (2018) advocated for academic

librarians, and more so those from Sub-Saharan Africa, to be ‘familiar with the most commonly applied metrics, methodologies and tools in bibliometrics, cybermetrics, webometrics and altmetrics’. This will enable such librarians to be more useful to postgraduate researchers and other library users to maximize on their research.

### **1.1.1.3 Contextual Setting**

The provision of research support services in Kenya is linked to the higher education environment. The higher education space has expanded tremendously since 1963 when the country attained independence; this is largely owing to many students seeking higher education (Makori, 2015; Sifuna, 2010). The establishment of the Commission for University Education in 2012 further facilitated this growth, resulting in the chartering of nearly 50 universities, both public and private (Commission for University Education Kenya, 2019). The universities have also established affiliate colleges or campuses within the country or in the East African Community. Constituent colleges still need to be fully operational as accredited universities but manage programmes on behalf of their parent institutions. The list of chartered public and private universities in Kenya is shown in Appendix 1.

Research, teaching, dissemination of knowledge and community development are key mandates of universities. In Sub-Saharan Africa, universities play a crucial role in the economic development (Cloete et al., 2012). Given these important roles, university libraries are vital in supporting these functions by providing research support services to students, researchers and faculty. The research sites for this study were universities that provided doctoral degrees: these were selected based on the enrolments and graduation rates as per CUE university statistics. The universities under study were: The University of Nairobi, Jomo Kenyatta University of Science and Technology, Moi University, Maseno University, Masinde Muliro University, Egerton University, Chuka University and Pwani University.

Similar to other Sub-Saharan countries, the development of RSS in Kenya faces a number of challenges owing to institutional, personnel as well as contextual factors. For example, although academic librarians in Kenya are aware of their users' needs, including research support services (RSS), most do not possess the necessary skills to fully attend to these needs (Nakitare et al., 2020). According to Chiware (2020), the inadequate skills among academic librarians can partly be attribute to the curriculum used for training them in most parts of Sub-Saharan Africa which does not include RSS and related components, hence ill-prepare them for RSS in academic libraries. Rotich (2021) examined the current curricula used by selected Library and Information Schools (LIS). The study found that the curricula used by LIS schools in Kenya do not adequately cover Information Communication Technology courses, which are essential for aspiring Systems Librarians to effectively carry out their responsibilities. This suggests that the research support services (RSS) effectiveness may be limited due to the inadequacies in the curricula used to train academic librarians. This suggests that librarians are constrained in delivering adequate RSS due to the inadequacies in the curricula used in their training.

### **1.1.2 CRITICAL LIBRARIANSHIP APPROACHES**

Critical librarianship is influenced by critical theories Foster et al. (2022) and aims to transform traditional library practices by questioning and examination (Drabinski, 2019). Further, Drabinski (2019, p.50) argued that "Libraries are about fixing things, in ideological structures and in time and space". Librarians actively participate in critical librarianship through various aspects of their work, namely instruction, cataloguing, and acquisitions (Sowa et al., 2020). Critical librarians aim to establish libraries that prioritize equity, inclusivity and social justice (Drabinski, 2019). Critical librarians acknowledge that information seekers are active participants, not passive consumers. Librarians have the responsibility of utilizing their

authority to advocate for the principles of social justice and equity (Sowa et al., 2020). This study focused on user empowerment, librarian empowerment, librarian power, advocacy and outreach, as well as user disempowerment.

#### **1.1.2.1 Library User Empowerment**

In a digital context, user empowerment is important for the efficient use of library resources and also the development and output of high-quality research. In the 21st century, librarianship, value-added services, and satisfaction of the library users are keywords for any library (Manoj & Neela, 2012). Providing library services and ensuring user satisfaction are the primary goals of university libraries since their users are empowered through information literacy education. Information literacy develops skills of people from all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals (Arua et al., 2018).

#### **1.1.2.2 Librarian Empowerment**

Empowerment impacts the degree to which a person can influence operating outcomes at work (Odine, 2013). There is a growing demand for academic libraries to provide services to researchers engaging with new models of scholarly communication, requirements for research data management and emerging technologies (Blatchford et al., 2016). Further, Rin and RLUK (2011) opined that librarians can use their skills to help researchers improve the quality of their funding applications, and to increase the institution's success in winning research income. Librarians need knowledge of the research process, what aspects of library services are needed and when.

Daland and Hidle (2016) however observed that librarians feel less confident in contacting doctoral candidates and researchers because they do not know what they can offer. The reason

for this may be a lack of confidence in their skills and lack of knowledge when it comes to the research process. With increasing pressure on researchers to plan and manage their output, and a growing adoption of open-access publishing, research libraries are now compelled to understand and support all processes of instruction and scholarship, which calls for an engagement model (Jaguszewski & Williams, 2013). It is essential to determine the skills and expertise required for librarians to fully support research (Cherinet, 2018; Enakrire, 2019). It is therefore crucial for librarians to understand the activities that researchers engage in during the research process, and this will place them (librarians) in a position of to be supportive of such researchers.

### **1.1.2.3 Librarian Power**

Librarian power is linked to critical theory where questions of power are prominent (Devetak, 2013; Oyieke & Dick, 2017). Librarians act in accordance with a set of professional competencies, values, and attributes that place them in positions of power as elite professionals (Thompson, 1974). Traditional roles like reference work and collection management are gradually losing their prominence as librarians' primary duties. Increasingly, new tasks relating to research support, data management, bibliometrics, digital initiatives, scholarly communication, and user experience are becoming part of the responsibility of the academic librarian. Understanding the role of power in library practice is crucial for library and information science (LIS) scholars, as a deeper grasp of critical-theoretical approaches, such as Foucault's concept of power, can sharpen our perspective when examining issues related to librarian authority and its impact on professional practice and real-world applications (Smith, 2011).

#### **1.1.2.4 Advocacy and Outreach**

Advocacy and outreach involve some of the marketing strategies used to create awareness about the outreach programs and services in an academic library. Generally, academic libraries have many standard methods used to promote new and existing research services and collections (Torrence, 2015). The essential utilization of library resources and services will involve creating awareness and educating users on the benefits of using the library's resources and services. Advocacy and outreach can be achieved through adopting various strategies (Joshua & Michael, 2020). Adegoke (2015) identified some of these techniques as current awareness service, exhibition and display, selective dissemination of information; bulletin boards, users' education courses, and online dissemination of information via the Internet technology by creating links for current information on the library portal among others.

#### **1.1.2.5 User Disempowerment**

When it comes to using library resources and services, user disempowerment refers to circumstances in which patrons encounter obstacles, difficulties, or restrictions that prohibit them from fully using and benefiting from a library's resources and services. According to Oyieke (2015), user empowerment can be the result of a lack of library skills training opportunities and access to information resources and networks.

### **1.1.3 UNIVERSITY LIBRARIES IN KENYA**

University libraries have a close relationship with the universities' core functions of teaching, learning and research activities. These core functions cannot be accomplished without the input of the university libraries (Nnadozie, 2013). This may explain why among the Commission of University Education (CUE) guidelines on university libraries in Kenya, having well-equipped, information-rich and adequately staffed libraries is a requirement for university acceptance and

accreditation of courses offered thereon (Commission for University Education, 2014). The provision of services in Kenyan university libraries has been continuously and rapidly changing due to the changing needs of library patrons within the institutions of higher education (Makori, 2009; Wachira & Onyancha, 2016). Academic libraries cannot effectively prepare for the future or position themselves within universities until they understand their changing roles in the current learning and research environment, which is radically different from the environment that existed a decade ago (Chepkwony, 2012). Academic libraries are facing challenges on how to effectively engage in academic communities and better support and facilitate new paradigms of teaching, learning and research.

Academic libraries are evolving in a changing environment of scholarly publishing, information delivery models, and technologies (Enakrire, 2019; Chen & Lin, 2018). Kenya's Vision 2030, under the education and training sector, states that the country will provide globally competitive and quality education, training, and research by 2030 (Government of Kenya (GoK), 2007). Kenya aims to be a regional centre of research and development in new technologies, implying that the role of university libraries in the provision of RSS is fundamental. The eight libraries that were included in this study were public universities libraries of the institutions under study, which were: Jomo Kenyatta Memorial Library, Jomo Kenyatta University of Science and Technology Library, Maseno University Library, Masinde Muliro University Library, Egerton University Library, Chuka University Library, Pwani University Library and Moi University Library.

## **1.2 STATEMENT OF THE PROBLEM**

Students' knowledge and overall academic performance improve when information resources are readily available and effectively utilized (Ojobo, 2020). In an ideal academic setting, doctoral students should have access to comprehensive and efficient research support services

that are aligned with their evolving needs. Research shows that students exposed to appropriate research support services succeed in their studies within the stipulated time (Howlett et al., 2017; Johnson et al., 2022; Miss et al., 2023). In Sub-Saharan Africa, research support services play a critical role in promoting excellence in research and academic institutions (Pulford et al., 2020). However, according to Pulford et al. (2020), there is a significant lack of research management services (RMS) across the region, which hampers the effectiveness of these institutions in supporting research activities. This deficiency in comprehensive RMS is a major issue that needs to be addressed in order to enhance the quality of research support services. However, although research support services are widely acknowledged as being crucial for the success of doctoral students, many university libraries, especially in Sub-Saharan Africa, concentrate on traditional aspects of research support services such as collection development, reference services, information literacy services and institutional repositories. Kenyan universities tend to focus primarily on traditional services such as collection development and information literacy (Wachira & Maina, 2020). This disconnects between the existing services and the evolving requirements of the students hinders the development of their research skills, their ability to navigate the complex research landscape, and ultimately, their productivity (Miss et al., 2023; Ojobo, 2020; Tang & Zhang, 2019).

Doctoral students in Kenyan public university libraries face significant challenges in accessing research support services tailored to their diverse needs, such as mastering complex methodologies, managing publication requirements, and navigating digital resources. The inadequacy of existing research support services limits their ability to excel in their academic pursuits, and this consequently delays the doctoral completion, yet this is linked to economic development in SSA (Cloete et al., 2012; Raju et al., 2016). There is a pressing need for services that are customized to the specific challenges of doctoral students within the Kenyan context. Previous studies (Howlett et al., 2017; Johnson et al., 2022) highlight the importance of

developing tailored research support services to enhance student outcomes, indicating that the absence of a targeted framework severely impacts their research progress and academic success. Specifically, Howlett et al. (2017) called for further regional studies that can enhance the understanding between postgraduate students and academic libraries, demonstrating a contextual gap. In Kenya, Rotich (2021) focussed on the curriculum by university academic libraries in Kenya but did not include postgraduate students (conceptual gap), while Anduvaro (2019) and Wachira et al. (2020) focussed on RSS but were limited to universities in the Nairobi metropolitan area and did not adopt critical librarianship theory, hence a theoretical gap.

This gap highlights the urgent need for a "critical librarianship" approach, wherein librarians actively partner with students to guide their research journeys. The mismatch between existing services and students' needs, compounded by mandatory publication requirements (Mukhwana et al., 2017) and the difficulties librarians face in adapting to these changing needs (Wachira & Maina, 2020), reinforces the necessity for developing tailored research support frameworks for doctoral students in Kenya. While recent studies have explored various aspects of research support services in Kenyan universities, limited empirical research has examined how librarians can effectively contribute to doctoral students' success. This study aims to bridge this gap by investigating the potential of a critical librarianship approach to address the existing RSS challenges in public universities' academic libraries in Kenya.

### **1.3 AIM OF THE STUDY**

The purpose of this study was to investigate how a critical librarianship approach can enhance research support services for doctoral students in selected public university libraries in Kenya, and propose a critical librarianship framework for enhancing research support services for doctoral candidates in university libraries

### **1.3.1 OBJECTIVES OF THE STUDY**

The objective of this study are as follows:

1. Examine the existing research support services for doctoral students in selected public university libraries in Kenya.
2. Determine the extent of utilization of research support services by doctoral students in selected public university libraries in Kenya.
3. Establish the strategies used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya.
4. Determine the challenges faced by libraries in providing research support services for doctoral students in selected public university libraries in Kenya.
5. Propose a critical librarianship framework for enhancing research support services for doctoral candidates in university libraries.

### **1.3.2 RESEARCH QUESTIONS**

1. What are the existing research support services for doctoral students in selected public university libraries in Kenya?
2. To what extent are the research support services utilized by doctoral students in selected public university libraries in Kenya?
3. Which strategies are used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya?
4. What challenges do libraries face in offering research support services for doctoral students in selected public university libraries in Kenya?
5. How can a critical librarianship approach enhance the RSS in university libraries in Kenya?

#### **1.4 ASSUMPTIONS OF THE STUDY**

This study was carried out with a number of assumptions, such as: librarians in the selected public universities were open to adopting a critical librarianship approach; doctoral students were receptive to the idea of adopting a critical librarianship approach for research support; a critical librarianship approach could improve research support for PhD students; doctoral students needed better research support services to enhance the quality of their research work; and finally, Kenyan public university libraries could enhance their research support services by integrating critical librarianship ideas.

#### **1.5 SIGNIFICANCE OF THE STUDY**

This research has the potential to bridge the gaps in the literature by presenting empirical evidence on research support services among postgraduate students in the African context specifically in Kenya. Academics and researchers therefore are likely to benefit from this study with the increasing clarity on the nature and extent of research support services in university libraries in Kenya. More knowledge and insight have been generated on research support services in the Kenyan context from this study. Policymakers are also likely to benefit from the data provided by this study. Research support services play a pivotal role in the research lives of postgraduate students, which is a great concern for policymakers in the education and related sectors. The data and findings from this study are therefore instrumental in the provision of guidance which allows libraries to have more emphasis and better-planned strategies to offer research support services in universities. The study also promotes awareness and advocacy about the importance of research support as a service to university libraries. Since one of the objectives is to analyze the challenges in the provision of research support services by universities, it is hoped that academic libraries will find this study useful in this regard.

As strategic pillars of their institutions' missions and visions, academic libraries need to be aware of not only the models that work for research support services, but also the challenges they may face. This study sheds light on models as well as challenges that such libraries face in the provision of research support services. Doctoral students are also likely to benefit from the findings emerging from this study. Doctoral students engage in high quality research and learning whose quality could be compromised if the necessary support and services are not provided. This study yielded useful data and results that are of importance to doctoral students, for example, on models libraries were used for research support services and challenges in the provision of research support, among others. The study also serves as a platform for educating doctoral students on making informed decisions on the different ways and channels of dissemination of research data. Finally, it explains the advantages of using the research portal of the academic library on the library website to facilitate research.

## **1.6 JUSTIFICATION OF THE STUDY**

The library plays a vital role in the provision of information services, and in support of users in their studies and research activities (Edeole, 2019). Academic libraries need to maintain links with researchers further develop their functions and remain viable and competitive in this new information environment, so that researchers can effectively learn and apply the full potential of the resources and services offered (Rasul & Singh, 2010). University libraries manage research support services based on the general and traditional frameworks that serve both undergraduate and doctoral students, without giving special attention to doctoral students' needs. This has had profound and far-reaching implications, and university libraries must act to ensure that they are able to address this challenge. Despite that, research supporting librarianship globally is still in its infancy (Raju & Schoombee, 2014). Therefore, this study investigated the RSS practices of doctoral students and proposed appropriate strategies that

could be used to enhance research support services for doctoral students in Kenyan university libraries. No known research had been done to establish how university libraries in Kenya went about supporting the research needs of PhD students.

## **1.6 SCOPE OF THE STUDY**

The study focused on research support services offered in chartered public universities and university libraries in Kenya. Public universities usually share similar characteristics as publicly funded and operated institutions, and university libraries in Kenya have some kind of resemblance and functional likeness as guided by the Commission for University Education (CUE). Selected public universities included the University of Nairobi, Jomo Kenyatta University of Science and Technology, Moi University, Maseno University, Masinde Muliro University, Egerton University, Chuka University and Pwani University. The research was limited to universities' doctoral program enrolments and graduation rates. Doctoral studies play an important role in developing future innovations by training the researchers needed to advance knowledge and explore new research areas relevant to the economy and society of tomorrow (OECD, 2019). The main areas of concentration were the research support services that these eight public university libraries offered. In particular, the main campus libraries of these university libraries were selected using purposive sampling. These were: The University of Nairobi Library, JKUAT University Library, Maseno University Library, Masinde Muliro University Library, Egerton University Library, Chuka University Library, Pwani University Library and Moi University Library. The target population for this research comprised doctoral students who are actively involved in research (research and course-based), librarians in charge of research support services, and university librarians in selected public university libraries. This study was limited to libraries of public chartered universities that offered doctoral programs. In Kenya, 28 public universities offer doctoral programs and only eight were

selected for this study. The study focused on research support services provided to registered doctoral students, who were enrolled in either coursework-based or research-based doctoral programs in the selected universities. The research was limited to doctoral program enrolments and graduation rates as per the CUE university statistics of the 2017/2018 academic year (Commission for University Education, 2019). Other programs, such as Master's and undergraduate programs, were excluded. The population of the study comprised doctoral students, library staff who provided research support services to the doctoral students and university librarians.

### **1.7 LIMITATIONS IN THE STUDY**

The study had some limitations. Firstly, the researcher faced constraints due to limited access to doctoral students. Obtaining their email addresses required authorization from university registrars, which delayed data collection. Data collection took place during a recess period, making it difficult to locate participants on campus. The use of SPSS and ATLAS.ti software for data analysis presented another limitation, as the researcher lacked prior experience with these tools, potentially affecting the depth of analysis. Lastly, logistical challenges, including the distance between selected universities, restricted the number of in-person interviews conducted. As a result, the researcher utilized a hybrid data collection method by obtaining email addresses from the Board of Graduate Studies

### **1.8 DISSEMINATION OF FINDINGS**

The findings of this study were disseminated through a multifaceted approach such as publishing in peer-reviewed journals, presentations at relevant conferences, contributing to scholarly discourse in online forums, as well as engaging with policymakers through

workshops and open-access repositories. These multifaceted strategies were chosen because they ensure that these findings reach a wider and more appropriate stakeholder.

## **1.9 CHAPTER ONE SUMMARY**

This chapter has provided the background of the study which shows that university libraries around the world are evolving to meet new research needs in the digital age. They are expanding their services beyond traditional support. While these services benefit all researchers, graduate students stand to benefit the most because their studies typically include research projects. Traditional library services and lack of tailored support impact the evolving needs of doctoral students, thus hindering their research progress and completion rates. However, it needs to be clarified how well university libraries in Kenya are aligning their research support practices with these changing needs, necessitating further research. The chapter further emphasizes the evolving roles of librarians from traditional bookkeepers to infomediaries, which requires librarians to enhance their skill sets through critical librarianship. Critical librarianship empowers users with information literacy skills which are deemed crucial in the digital age, while librarians are empowered by broadening their skill set to better support researchers. Although librarians play a crucial role in supporting doctoral students' research needs, they need to gain the skills and framework necessary for adapting to the changing needs of their doctoral students. The lack of tailored support towards doctoral students' needs, and the need for the librarians to adapt to the critical librarians' approaches requires a framework that university libraries should use to enhance research support provision for doctoral students in Kenyan university libraries. This is the gap this study is focusing on and intends to fill. The next chapter discusses the literature review related to the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

#### **2.1 INTRODUCTION**

This chapter provides a comprehensive review of the relevant literature on research support services in academic libraries, particularly as they relate to doctoral students in public universities. The chapter describes the theoretical and empirical perspectives guiding the topic. The organization of the chapter involves two aspects: literature review and theoretical framework. For a better understanding and interpretation of the topic, the review also highlights case studies from across the globe. This logical, systematic exploration and organization of the literature is guided based on the objectives of the research, which guide the formulation of themes and subthemes. The review provides a critical analysis of the published research studies and findings on the upward mobility of librarians and information professionals in public university libraries. Fundamental perspectives that impact the career development and advancement of librarians are discussed.

#### **2.2 EMPIRICAL REVIEW ON RESEARCH SUPPORT SERVICES IN UNIVERSITY LIBRARIES**

There is progress in the provision of research support services globally. University libraries in the U.S.A., Europe, and Australia are more mature in providing research support services than those outside these regions (Tang & Zhang, 2019). Such libraries provide services corresponding to different stages of research lifecycles; for example, research guides, research support tools, research data management services, publication, distribution and intellectual property services (Liang et al., 2016). A survey on research support services among eight universities in New Zealand established that there was noticeable progress in the libraries under study in areas like scholarly communication, research data management and research impact

(Howie and Kara, 2022). Even then, the preceding authors argued that despite the progress noted, improvements were still needed in equipping and strategically positioning librarians. In Australian academic libraries, the driving force for research support services was the increasing demand by researchers and library users for these services, and the opportunities that library staff had built to meet this need (Haddow & Mamtora, 2017). However, challenges, including competing priorities and the need for librarians to upskill, were identified.

A related case study of Victoria University's Wellington library showed that collaboration and partnerships with key stakeholders, including the library, academic and research departments, were helpful in enhancing the provision of research support services (Lang et al., 2021). In addition, quantitative research of 76 of the 100 top-ranking universities in the QS World University Rankings in 2017 revealed that research support services offered included scholarly communication, research data management, open access, and research consultation, among others (Si et al., 2019). Using secondary data from the South African context, Ocholla and Ocholla (2020) revealed how academic libraries are adjusting by adopting technology (namely robotics and AI) to provide better support services to clients. In Kenya, a qualitative case study on support services offered to remote users revealed that such services included requests for print and electronic materials and access to journals, among others (Wachira & Onyancha, 2016). To these authors, challenges of personnel shortage and inadequate skills were noted.

### **2.2.1 RESEARCH SUPPORT SERVICES PROVIDED IN UNIVERSITY LIBRARIES**

One of the primary goals of establishing a university library is to provide services to members of its parent institution by providing information resources and services that support learning, teaching, and research (Udem et al., 2020). Kutu and Olabode (2020) opines that there is massive information around the world, thus, it becomes necessary to review information resource availability. Postgraduate students conduct research on a regular basis throughout

their studies, allowing them to constantly access information sources and services through the library (Omeluzor & Aluko-Arowolo, 2023). This section highlights the different research support services provided in public university libraries for the support of doctoral students' research needs.

### **2.2.1.1 Instructional Services**

University libraries provide instructional services that test the different competencies as per the ACRL information literacy framework (ACRL, 2016). Access to relevant and high-quality information has become more difficult because of the availability of numerous and voluminous information sources, particularly in electronic form. This has posed a significant challenge to academic libraries, for they have to train their clients on how to search and retrieve information from different sources, a phenomenon that necessitates the provision of information literacy training to users for lifelong learning (Lau, 2006). Zhao (2019) opined that many libraries have made information literacy a top priority in their strategic plans in order to increase students' abilities to seek information. It is crucial to prepare students for information literacy skills as these literacy skills are critical to students' success in higher education (Arman et al., 2020).

Mungwabi (2019) investigated the impact of Information Literacy (IL) training on students. The findings indicated that IL training had more influence on search skills and evaluation for credibility though moderately than ethical use of information. Also, the study aimed to establish the extent to which respondents were satisfied with the contents of the information literacy instructions provided. The results indicated that 25(37%) respondents were satisfied to a large extent, 29 (43%) respondents were moderately satisfied, 11(16%) indicated that they were satisfied to a small extent and 3(04%) were not satisfied at all. A study by Zeeshan et al. (2020) which examined existing information literacy skills revealed that the students had skills to identify their information needs, the sources to access the required information and authenticate

the retrieved information. A related study by Obande and Abdulsalami (2020) found that the majority of the researchers needed more information literacy skills, which hampered their access to and use of e-resources.

### **2.2.1.2 Scholarly Communication**

Scholarly communication involves the use of formal and informal channels to disseminate new knowledge to scholars (Million et al., 2018). Scholarly publishing has gained more prominence in recent years, with university rankings based on scholarly publications being one of the parameters. A mixed-method study by Klain-Gabbay and Shoham (2016) examined scholarly communication processes among academics and librarians in colleges in Israel. Data from the study revealed that there was contention among faculty members about whether academic librarians should be involved in scholarly publishing and communication or not, with some supporting while others opposed the idea. Purdue University, one of the institutions in the Si et al. (2019) study, engaged in scholarly communication stages namely, authoring, production (copyediting and others), dissemination and preservation (that is, archiving) of scholarly works and it was noted that librarians needed to be effective in scholarly communication including other research support. Continuous professional training was therefore needed. Sewell and Kingsley (2017) whose study focused on one such programme (Research Support Ambassador Programme at Cambridge University) argued for the need for academic librarians to be in tandem with developments in the scholarly communication world. Thus, when on-going professional development programme is undertaken, academic librarians become more effective in research support.

### **2.2.1.3 Research Data Services (RDS)**

According to Tenopir et al. (2017, p.27), the scope of Research Data Services (RDS) is broad and includes:

...creation and management of institutional data repositories, providing tools for data mining and visualization, training for researchers on data management activities, guidance on institutional policies, help with creating data management plans and metadata for data sets, and assistance with intellectual property and privacy issues surrounding research data, and other services.

A survey on the state of RDS in selected countries (Australia, Canada, Germany, Ireland, the Netherlands, New Zealand, the UK and USA) by Cox et al. (2019) revealed a more significant commitment towards RDS, more so on consultative roles than on technical ones. Even then, a challenge among the librarians surveyed was the skills gap in the provision of RDS. An earlier study by Tenopir et al. (2017) agrees with the observation that libraries were performing more consultative roles than technical ones. To enhance the provision of RDS in academic libraries, more so in this era where its need is predominant, training of academic librarians is inevitable. A study in this regard by Gao et al. (2018) revealed how secondary data (from the University of Houston Library) could be used to show areas where academic librarians have a need for training. In developing countries, RDS development is still low, and can be strengthened. A qualitative case study among postgraduate students, researchers and library officials at the University of Dodoma Library in Tanzania observed that there was a low awareness of RDS among the study respondents, hence the need for sensitization on this matter (Mushi et al., 2020). A study by Cox et al. (2019) revealed that while libraries in the study were committed to Research Data Services (RDS), the academic librarians were challenged in their skill gaps (for example in offering metric-related services for which they had yet to be trained). There was, therefore, a need to improve in this aspect.

#### **2.2.1.4 Research Data Management**

Research Data Management (RDM) is the service that most libraries seem to focus on, as the process of curation and archiving of information is familiar to librarians (Corrall, 2012; Langley, 2019). In their international survey on how libraries support RDM, Cox et al. (2017) discovered that there was evident progress in RDM in areas like policy and governance, service development and staff deployment and skills. However, the same study by Cox et al. (2017) pointed out the need to continually re-train librarians on the skills relevant to RDM, as sometimes there appeared to be some incongruence between professional development offered to librarians and RDM needs. Howie and Kara's (2022) New Zealand study demonstrated that staff capacity in relation to RDM was growing, though this needed to be kept in tandem with factors such as technological developments. In the African context, a recent study that focused on the views of directors of research on RDM in two Malawian universities established that RDM faced challenges related to infrastructure, policy, inaccessible data and inadequate skills among librarians (Chawinga & Zinn, 2020). This appears to point to the challenges affecting Sub Saharan institutions in relation to RDM.

#### **2.2.1.5 Library Resources**

According to Abubakar (2020), every university library, regardless of size, should have appropriate library resources for studying, and research by its users. One essential service that cannot be overlooked is the availability and accessibility of information resources in academic (university) libraries (Abubakar, 2020). In accordance with this, Effiowan and Kuburat (2022) revealed that the most prevailing information resources used by postgraduate students are: textbooks, printed and e-journals, newspapers / magazines, thesis/dissertations, and research commons among others. Academic libraries offer a quiet and friendly environment for

learning, as well as support services and the circulation of materials and documents that help in academic research (Mandrekar, 2020).

Research commons can be described as a dedicated space that has diverse state of the art equipment, ICT infrastructure, and services specifically catering to the needs of researchers (Kleinveldt, 2018). In South Africa, specifically at the Stellenbosch University Library, Moll and Moll-Willard (2019) argued that research commons is not an old-fashioned idea but allows postgraduate students to meet and consult library specialists and consequently enhance their research towards completion. Another study on postgraduate students in South Africa showed that these spaces were handy to postgraduate students as they mainly visited the library to make use of research commons available for private study (Bangani et al., 2019). In Kenya, Musangi et al. (2019) focused on the Information Commons, which is an 'advanced' form of research commons where researchers discuss matters related to their work and have technological support. In their study, Musangi et al. (2019) noted that while many academic librarians were aware of information commons, not much provision had been given for this in their institutions.

#### **2.2.1.6 Research Impact Management**

Research impact is a trend that focuses on using metrics (for example, bibliometrics and altimetric) in assisting in measuring research productivity and impact at the university; it uses tools, including citation databases that librarians are familiar with (Corrall, 2012; Haddow & Mamtora, 2017). In their study, Howie and Kara (2022) discovered that research impact was joint in all the eight universities under study, and the library was a strategic stakeholder in enhancing research impact management. Several scholars have studied bibliometric, one aspect used to ensure research impact. For example, in a focus on the development of bibliometric services among librarians, (Cox et al., 2019) realized that the majority of the staff working in

the bibliometric department of the library had not received any formal training in this area, with some opting for self-initiated professional development. This supports the view by Onyancha (2018) who argued for the need for academic librarians in the Sub-Saharan context to be skilled in metrics for instance bibliometrics, webometrics, and altmetrics.

#### **2.2.1.7 Open Access Institutional Repository Services**

The open access movement has increasingly been adopted by academic libraries globally, and researchers in universities are making use of these models. In their study, Si et al. (2019) comprehended that most of the 76 institutions sampled offered open access services to their researchers. Utrecht University in the Netherlands has for long adopted pragmatic open access models which include hosting open access journals and partnering with relevant institutions and bodies (Sondervan & Stigter, 2018). In Sub-Saharan Africa, although open access has somehow taken root, there exist challenges in knowledge and utilization of open access platforms. Chisita and Chiparausha's (2019) study in Zimbabwe revealed that although open institutions of higher learning had adopted access, there was a need for more strengthening in this line. In Nigeria, Baro and Eze's (2017) survey among academic librarians on their awareness of open access revealed that while most were aware of some of the open access models in the publishing world, they did not consider their institutional repositories or platforms like ResearchGate as avenues for open access. This suggests the need for researchers and library users to be made aware of all the open access platforms within their reach.

#### **2.2.1.8 Research Consultations**

Research consultations or 'the scheduled appointments between a librarian and an individual student or small group of students' Maddox and Stanfield (2019), are an essential component of support services by academic libraries. According to a survey by Butler and Byrd (2016), research consultations help in meeting students' research needs if the librarians understand the

language students speak on this matter. A qualitative study using interviews among students on research consultations in one university in the USA revealed that some students were unaware of consultation services provided by their library; yet would appreciate the opportunity, if available, to consult their librarians (Rogers & Carrier, 2017). This implies that while research consultation may be available in university libraries, it is essential that students as beneficiaries are made aware of such opportunities.

As the goal of the research consultation service is to empower the client with both the skills necessary to accomplish their research objectives, many libraries are putting greater emphasis on consultation with librarians and some libraries have moved to tiered or on-call reference using students and staff to triage patron questions (Alexander & Wakimoto, 2019). Universities today are also engaging in pragmatic approaches to enable students to consult the librarians on their research needs. Maddox and Stanfield (2019) for example, whose study targeted academic librarians offering virtual research consultations, found out that these consultations were going beyond face-to-face models to include virtual platforms example Zoom, Webex, Google Hangouts, Skype, and Learner Management Software (LMS). The increasingly important role of individualized and personalized support for students and researchers has continued to be emphasized in recent research consultation trends (Stapleton et al., 2020).

#### **2.2.1.9 Intellectual Property**

On Intellectual Property (IP), studies reveal the indifferent attitude of libraries, and the limited understanding of this research support service. Fernández-Molina et al. (2017) in their survey on intellectual property awareness among Brazilian academic librarians revealed that most had scant knowledge on matters such as copyright law and the role of the library in intellectual property space. The preceding authors noted that this limitation on the librarians was ‘an impediment for the academic librarian who aspires to take on an advisory role in matters of

intellectual property, orienting students and professors. Regarding attitude, Bossaller and Haggerty (2018) realized in their study that public librarians were unconcerned and indifferent towards intellectual property matters and did not assist their users on this matter. Many of them, who confessed to having little training on matters like IP, did not want to ‘police’ their users. In the Sub-Saharan context, knowledge of IP has not been deeply ventured into, even though some studies have focussed on related aspects. An empirical study in Kenya to explore librarians’ knowledge of copyright law showed that to some extent, there was insufficient understanding of copyright law among the librarians (Olaka & Adkins, 2012). There is a need, therefore, to further the study of intellectual property and how it is handled in academic libraries in Kenya.

### **2.2.2 UTILIZATION OF RESEARCH SUPPORT SERVICES**

The nature of research in academic institutions is undergoing a fundamental shift (Namachchivaya, 2015). These changes present new challenges and opportunities for research libraries. Libraries support researchers across the university through enhanced core facilities, spaces and services. Librarians are becoming more involved not only in helping researchers measure impact but also in helping to generate that impact (Walker, 2020). Librarians can use bibliometrics to broadly identify research strengths and measure some aspects of impact, for instance, policy citations and mentions in the media via services like altmetric (Walker, 2020). Many universities, according to Walker (2020), provide guidance on the use of social media to improve impact and how to measure impact via altmetrics. Workshops on establishing online profiles on academic and general social networking sites are also provided.

Research libraries have a unique opportunity to develop both content and services that are relevant to the current interests and to anticipate the future needs of research communities. Further, the nature of library work is changing considerably to incorporate additional functional roles that support the research process. Librarians ensure that research resources and collections

are both discoverable and accessible, including helping to make them intellectually accessible. Librarians aim to improve research practice through teaching good information and organizational skills, and they may also offer general skills and writing workshops (Helen, 2017).

### **2.2.2.1 User Needs Assessment and Expectations of Doctoral Students**

The library needs to perform needs assessments to establish the relevant audience for the services. For libraries to support researchers effectively, they must determine the type of support services their community requires (Oosthuizen & Kahn, 2022). Assessment of researchers' needs will help academic libraries improve the quality of the research services they render, which could positively impact researchers' outputs and the consequent establishment of emerging researchers (Auckland, 2012). The preceding author observed that researchers have diverse support needs that not only depend on their disciplines but also on the stage they are in their research projects. Improved research support is a consequence of understanding researchers' specific needs and therefore offering them research support that responds to these needs. Targeted research support services can contribute to an increase in their scholarly outputs (Oosthuizen & Kahn, 2022). Needs assessments are undertaken through surveys and interviews.

Postgraduates, unlike their undergraduate counterparts, are more likely to have more research needs that require the support of academic libraries (Ince, 2018). As a result of their thesis and dissertation projects which are often stressful, many postgraduate students need support beyond the usual stipulated coursework. Fleming-May and Yuro (2009); Harkins et al. (2011); Harris (2011) have shown that many postgraduate students need to prepare for the rigours of graduate-level study and need immense support from supervisors and academic advisors or supervisors. Even then, studies show that these students are either likely to ignore or belittle the support

provided for their research by academic libraries (Bussell et al., 2017; Ince et al., 2019; Kayongo & Helm, 2010).

A Malaysian qualitative study among six non-native English PhD students revealed that they needed help in their research writing, explicitly understanding and writing in an academic style, which consequently led to the delay in their completion time (Jeyaraj, 2018). In the preceding study, isolation worsened the students' challenges as they had fewer people to consult. This study points to the unique need for doctoral students, and how support services from the library might help mitigate the challenges they face. While addressing the issue of experiencing impostor syndrome among postgraduate students, Cisco (2020: p. 201) observed:

“The data show that the majority of the postgraduate student participants suffered from impostor phenomenon, and that much of that suffering related to the participants feeling that they lacked academic skill sets, including how to read, write, and think in ‘appropriate’, academic ways”.

Cisco's work demonstrates that if postgraduate students do not receive help related to their academic and research work, their chances of dropping out are high. It is, therefore, crucial that appropriate library support services are given to such postgraduate students. The academic library in its support services is instrumental to the postgraduate student. A study by (Rasul & Singh, 2010) among Malaysian postgraduate students showed that the majority of them valued the library and utilized it for research consultations and seeking other relevant resources. This is an aspect that should be strengthened in university libraries.

A recent study by Cook (2020) at the University of Western Cape on library services and postgraduate students' perceptions of them, revealed that one of the challenges faced by the students was their ignorance of the services the library was already providing. This mirrors an earlier study by Rogers and Carrier (2017) in the USA where students were unaware of the research consultation opportunities their library was offering. Thus, while provision of support

services by a library is one crucial aspect, postgraduate students' awareness of them is another matter altogether and one which needs attention.

### **2.2.2.2 Satisfaction with Research Support Services**

Student satisfaction is a focal point for educational institutions (Alsheyadi & Albalushi, 2020). The success of any library depends on the extent to which users are satisfied; in view of this, libraries need to evaluate the services and satisfaction among users (Larson & Owusu-Acheaw, 2012). Meeting the information needs of users requires the provision of the actual information resources and services that will satisfy their information needs (Larson & Owusu-Acheaw, 2012).

Kekana and Kheswa's (2022) South African study focused on library use and the postgraduate students as users' satisfaction with service quality in one campus in KwaZulu Natal. The study investigated the environment for reading, studying and conducting research and postgraduate students' satisfaction with such. The study found that the majority of students were satisfied with the access to information, but there were a few dissatisfied students from honours, master's and PhD levels. The findings of the study revealed that though users were satisfied with the availability of materials and were using the materials as revealed from the study, they were not satisfied with the currency of the materials in the library. This finding collaborates with a study conducted by Senevratne (2006) which concluded that users were dissatisfied with the currency of the collection. This study aimed to investigate the satisfaction levels of doctoral students with the provided RSS in meeting their research needs.

### **2.2.3 STRATEGIES USED BY LIBRARIES FOR RESEARCH SUPPORT SERVICES**

Academic libraries use several strategies to provide research support services to their clients. It is important to first realize that graduate students sometimes see the library as a place to seek assistance when faced with research challenges (Bussell et al., 2017). Furthermore, adult

learners generally do not seek assistance from librarians, preferring instead to ask for help from classmates or instructors (Ince et al., 2019; Kayongo & Helm, 2010). A recent exploratory qualitative study by Moore and Singley (2019), which sought to understand the information-seeking behaviour of Humanities PhD students, revealed that the students in the study relied on people within their circles (such as peers, colleagues, advisors, etc.) to access relevant resources. Thus, while the libraries would ordinarily have the help that such postgraduate students are looking for, they either may need to be made aware of or choose to ignore the support the library offers. This then suggests that academic libraries should be strategic in meeting the needs of their postgraduate students.

#### **2.2.3.1 Marketing and Outreach of Research Support Services**

Academic libraries also engage in marketing their research support services in order to position themselves strategically (Garoufallou et al., 2013). Similarly, Delaney and Bates (2018) found in their study that there needed to be more awareness among doctoral students regarding library resources and services, much as they deemed these services to be essential to their research life. Since postgraduate students need to know the value of research support services in university libraries, marketing can be targeted toward postgraduate students, where information about the specific benefits of services can be included. There are many ways to communicate with library users, including in-person interactions, email, the internet, phone calls, newsletters and pamphlets, radio, and television, among others. These methods can be used to share marketing information with them, inform them of the services the library offers, and solicit feedback to determine whether the library is living up to their expectations (Arumuru, 2015). Yi (2016) discovered in his study that the librarians who were respondents segmented their libraries as per users, with postgraduates having their own section. This implies that marketing of library support services can be targeted at such groups. An earlier study in Kenya by Kavulya

(2004) focused on how universities marketed their services to their users. The study realized that most libraries used promotions and advertisements, but did not engage in market research strategies such as market segmentation, customer satisfaction studies among others.

### **2.2.3.2 User Empowerment**

Empowerment, defined as the process of providing people with essential skills for survival, can also be obtained in academic libraries through a variety of methods (Mubofu & Mambo, 2021). On empowerment, Proffitt et al. (2015) opined that “empowering can mean both enabling users to do something they could not do (or not easily do) and giving users more agency in controlling and directing an important part of their life” (pp.9-10). There are numerous ways in which librarians can assist users in making greater use of the library's services.

For example, library catalogues, signage for subjects, library orientation programmes, are some of the techniques for guiding the user for enhanced use of the library (Manoj & Neela, 2012). The users interact directly with the library management through services. Value added services and library user satisfaction are critical words in 21st century librarianship. User empowerment is essential in digital environment for the effective utilization of library resources and high-quality research production and output (Vyas & Patel, 2020).

### **2.2.3.3 Librarian Empowerment**

One of the strategies that university libraries need to employ is to ensure that their academic librarians are not only skilled but also up to the task of meeting the needs of postgraduate students. Library professionals need to develop new skills and expertise to extend new services and realign the old ones (Cherinet, 2018; Sanjeeva & Powdwal, 2018). The libraries should empower their staff in order to bridge the gap created between traditional library service

delivery and the ICT citizens who are modern information-seekers (Obi, 2021). In Sub-Saharan Africa, most academic librarians are still traditional in their provision of research support services and hence the need to be trained in areas such as metrics, scholarly communication, RDM, among others (Abubakar, 2020; Onyancha, 2018; Pasipamire & Hoskins, 2019). The dramatic transformation in higher education, the ever-shifting research and scholarly landscape, and the unrelenting advances in technology have had a significant impact on the responsibilities of academic librarians (Ducas et al., 2020). It is thus important for academic librarians to up their skills and knowledge.

Since technological developments are constantly taking place with consequent effects on the provision of library support services, continuous professional development of academic librarians is important if they are to remain relevant (Sewell & Kingsley, 2017). In their Pakistani study, Ahmad et al. (2019) demonstrated a correlation between academic librarians' skills and competencies, and big data analytics in their libraries. They suggested the need for such librarians to keep abreast of the developments in big data analytics as well as related technological developments.

Similarly, Rahman (2019), in an exploratory Bangladeshi study on digital technologies in use as well as required skills by academic librarians, realized that the libraries had adopted digital platforms in the provision of services. The study recommended that academic librarians have relevant digital skills and other soft skills for example leadership and managerial ones, which would help enhance their meeting user needs. According to the study of Esmailzadeh et al. (2020) on librarians' competencies in providing research services, "general competencies (communication skills, professional ethics, and basic abilities), and specialized competencies (information resource retrieval and evaluation, using research software, research assistance, intellectual property literacy, scientific publication literacy, scientometrics, and altmetrics)"

are the competencies required by the librarian to provide research service and advice for the researchers.

#### **2.2.3.4 Cooperation and Collaboration Strategy**

As universities and academic libraries may need to provide more research support services to their postgraduate students, collaboration and partnerships between relevant stakeholders would be another helpful strategy. In their study of Victoria University Wellington Library, Lang et al. (2021) concluded that the library was engaging in internal cooperation with departments such as academic, IT and other relevant ones to provide research support to their clients. Such collaborations and partnerships lead to more effective utilization of resources and a more strategized way of understanding students' needs.

Wainwright and Davidson (2017) found out from their study that internal cooperation between academic libraries and other non-academic departments led to enhanced utilization of library services as students became more aware of them, as well as enhancing cohesion among staff and departments. Collaborations and partnerships can also be with other universities and like-minded organizations. In Romania, Madge (2018) realized that university libraries were collaborating, internally and externally, even though this was still at the rudimentary stages.

#### **2.2.4 CHALLENGES IN THE PROVISION RESEARCH SUPPORT SERVICES FOR DOCTORAL STUDENTS BY PUBLIC UNIVERSITIES LIBRARIES**

Even though research support services are instrumental to library users, more so for postgraduate students, many challenges hinder academic libraries from providing them. Foremost among these, and already discussed in the preceding sections, is the issue of limited skills, knowledge and experience among academic librarians. In many universities both in developed regions and developing ones, academic librarians have been found to be

handicapped in one way or another in the provision of research support services like data management, metrics (bibliometrics, altmetrics, and webometrics), research consultations, among others (Avuglah & Underwood, 2019; Cox et al., 2019; Mahwasane, 2019; Onyancha, 2018; Pasipamire & Hoskins, 2019). Arguably, academic librarians' expertise (skills, knowledge and experiences) is the starting point in improving provision of research support services.

Funding is another salient challenge threatening the provision of research support services in academic libraries. Often, many academic libraries are in partnership with faculty and academic departments in sourcing grants and research funding, yet this can be a challenge. In New Zealand, Lang et al. (2021) observed that libraries received funding based on their performance, which is assessed from time to time. Inadequate funding is a challenge to many academic libraries in Africa. In agreement, Tenopir et al. (2017) noted that libraries may experience decreased funding if they do not provide support services for example Research Data Services (RDS) in Nigeria, Madu et al. (2017) realized that inadequate funding (worsened by corruption) was one of the challenges affecting the effectiveness of academic libraries in the country.

The lack of internal and external partnerships and collaborations also hinders the adequate provision of research support services. Studies have shown that collaboration between academic librarians and their academic and even IT staff in their institutions, as well as with other institutions and stakeholders, helps to break the silo mentality among academic and non-academic staff. This helps to enhance the provision of research support services to postgraduate students (Lang et al., 2021; Madge, 2018; Wainwright & Davidson, 2017).

## **2.2.5 RESEARCH SUPPORT SERVICES FRAMEWORK IN UNIVERSITY LIBRARIES**

Research Support Services is a new service developed by academic libraries worldwide to support the institution's research process. In this section, the researcher examined and compared the different models of research support services offered by university libraries around the world.

### **2.2.5.1 Framework for Managing Power Dynamics and Improving Web 2.0 Services**

This framework aims to educate library users on how Web 2.0 tools can enhance the potential of e-services. Interactive technologies empower users by bridging physical gaps, allowing for real-time communication and personalized information curation. This turns e-services into a dynamic hub for timely knowledge and collaboration (Oyieke, 2020).

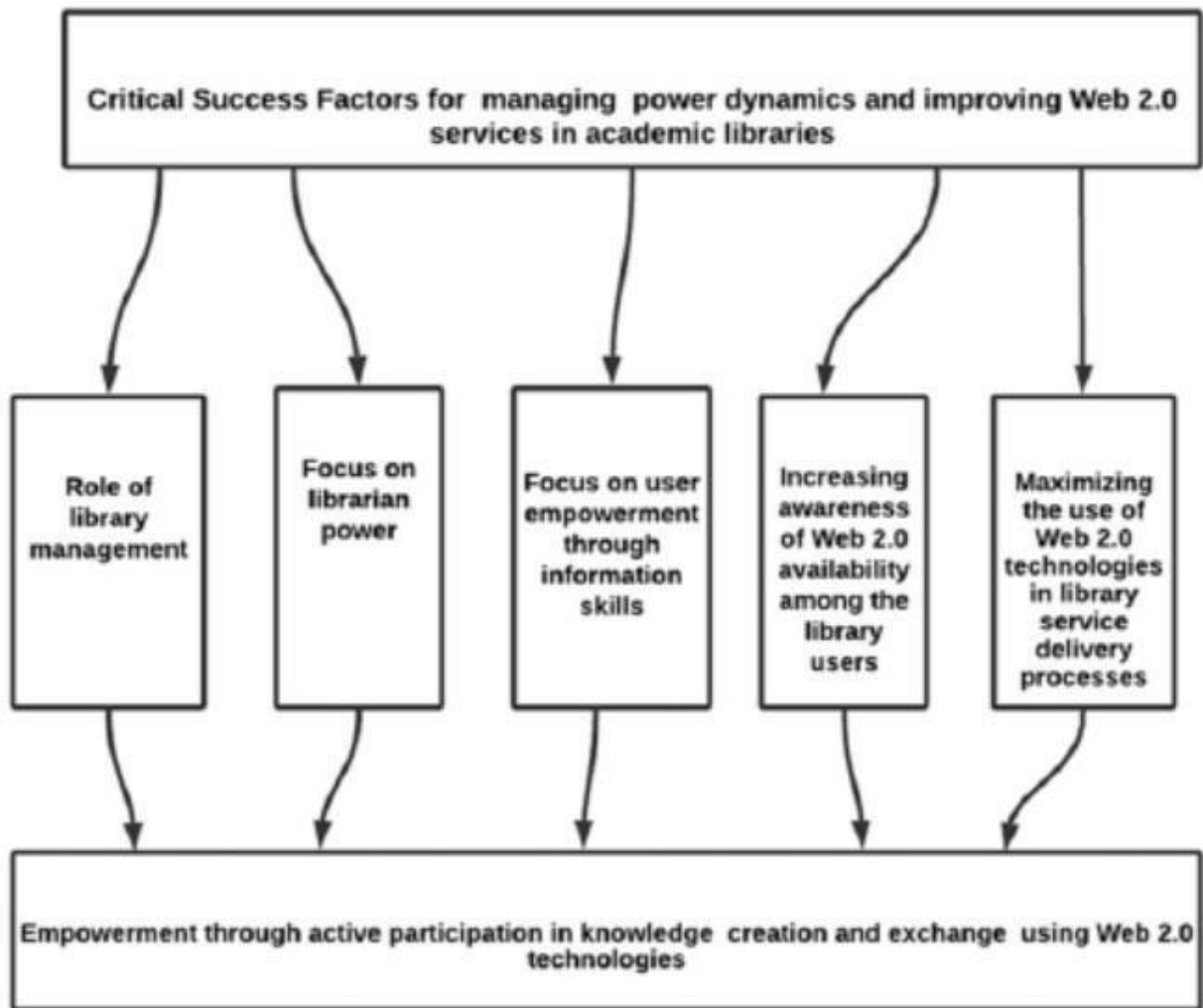


Figure 2. 1: Framework for Managing Power Dynamics and Improving Web 2.0 Services

Source: Oyieke (2020)

### 2.2.5.2 Research support model for Eastern University of Sri Lanka library

Santharoban (2022) investigated the research support service model of the library of Eastern University, Sri Lanka. The Eastern University of Sri Lanka library launched a research support service with a sole focus on training. Santharoban model was designed to train researchers on various aspects of research, particularly for undergraduates working on research projects. The

model has compiled a list of the RSS provided in Sri Lankan University libraries.



Figure 2.2: Research Support Model for Eastern University of Sri Lanka Library.

Source: Santharoban (2022)

### 2.2.5.3 Research Support Model for Zimbabwean University Libraries

According to Pasipamire and Hoskins (2019), the proposed model highlights that effective research support is dependent on the presence of a team of research librarians who possess knowledge, dedication, and sufficient resources. For example, librarians must be capable of conducting research themselves to be able to collaborate on research projects with researchers. In addition to this, research librarians should focus solely on providing support to researchers. The current library structure makes it challenging to offer effective research support as faculty

librarians responsible for research support are also responsible for other crucial organizational tasks such as collection development and supervision.

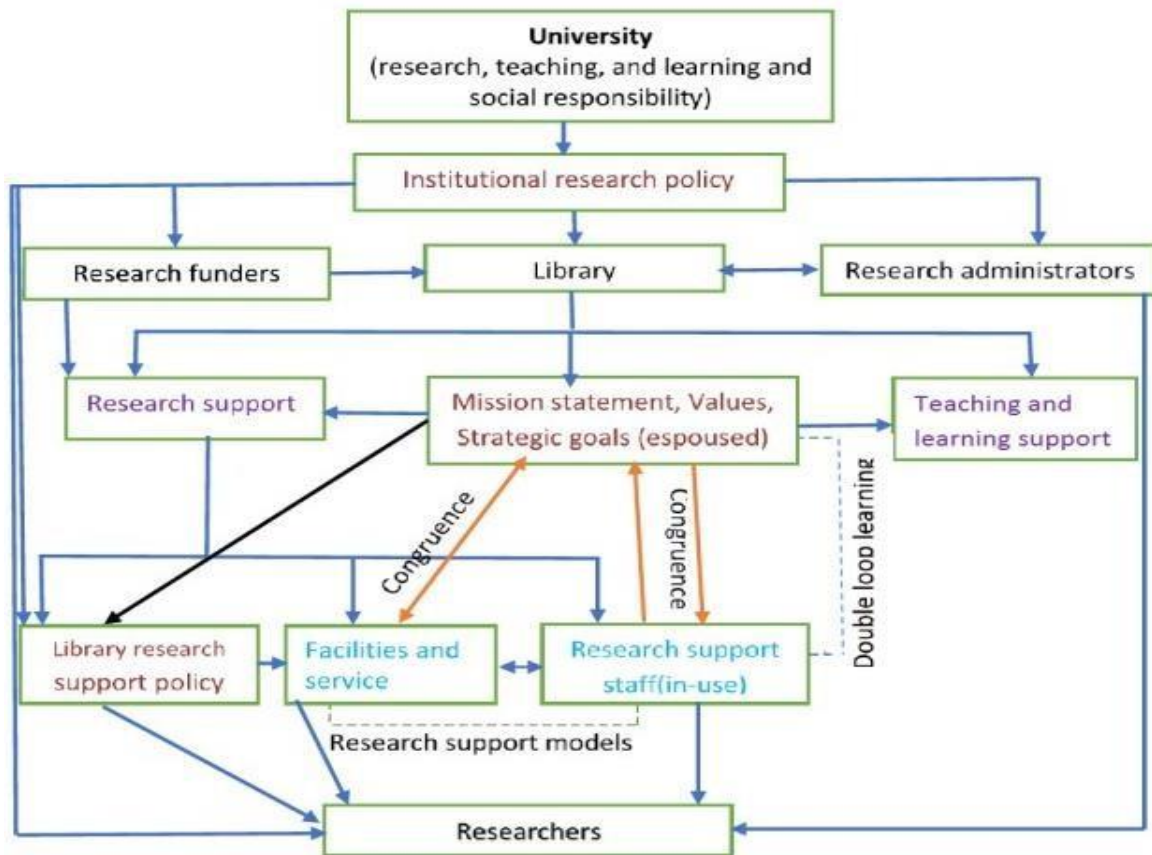


Figure 2.3: Proposed Model for effective Research Support in Zimbabwean Universities

Source: Pasipamire and Hoskins (2019)

#### 2.2.5.4 Framework of Research Support Programmes in South African Higher Education

The framework provides guidance for offering research support, with the aim of increasing research output and staff expertise (Zongozzi, 2022). However, it is essential to define the objective of staff development, which will help determine the appropriate programs to provide. This should be achieved through a collaborative effort to design program objectives based on a holistic definition of research development, as well as a framework for assessing program success against these objectives. It is critical to track both intended and unintended outcomes,

as well as openly and implicitly communicated consequences of program implementation during this process (Zongozzi, 2022).

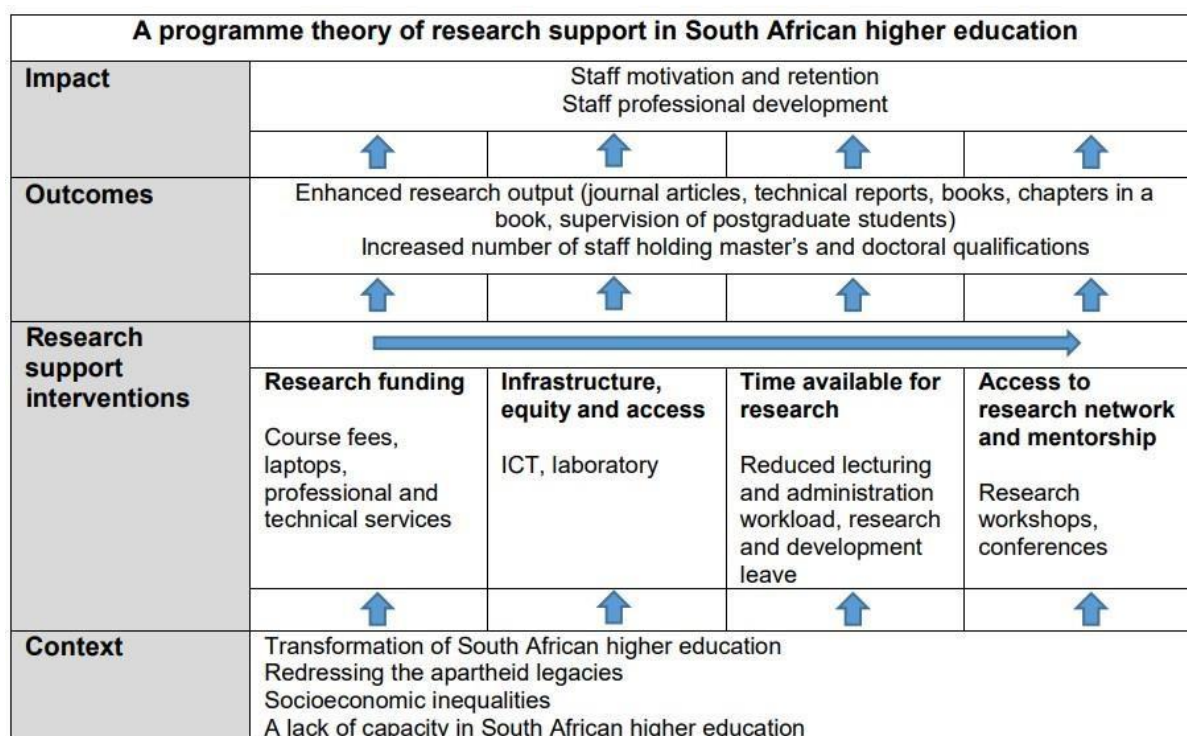


Figure 2. 4: Framework of Research Support Programmes in South African Higher Education

Source: Zongozzi (2022)

### 2.3 EMPIRICAL STUDIES AND KNOWLEDGE GAPS

Although different studies have addressed research support services in university libraries, the above literature review revealed several conceptual, theoretical, empirical, and contextual knowledge gaps that this study has filled. A study by Ali and Naveed (2020) examined research support resources and services offered by Pakistani university libraries. The findings revealed that most public university libraries need to provide state-of-the-art research support services for researchers due to a lack of resources, budget, and trained staff. Another study by Padhan and Naidu (2022) investigated the research support provision in India's Higher Educational Institution (HEI) libraries. It established that libraries are substantially well placed in

institutional repositories, e-database of theses & dissertations, and faculty research profiles. However, no study was found covering research support services as a whole for academic libraries in India.

A study by Maryati et al. (2021) suggests that academic libraries should re-think and re-design their services to support research. The study noted that studies on research support have been carried out in many developed countries, and no study has presented a business model that can guide the provision of research support services. Santharoban (2022) investigated the research support service model of the library of Eastern University, Sri Lanka (EUSL). The study established that the Eastern University library focused more on training the undergraduates and research consultation services. However, there were challenges such as lack skills and capacity among library staff, lack of human resources and physical facilities, and lack of proper marketing of library services. In view of the above knowledge gaps, this study proposes critical librarianship frameworks that will enhance the provision and utilization of research support services for doctoral students in Kenyan university libraries.

A study by Andrikopoulou et al. (2022) opined that there is minimal research discussion regarding the impact of academic librarians' involvement in RDM on their perceived image and identity and the nature of the critical skill sets and competencies needed by RDM. A study by Ashiq et al. (2021) identified and highlighted the preparedness level of LIS professionals regarding RDMS perception, training needs, motivational factors, and possible barriers. However, the findings revealed that librarians are greatly lacking RDM skills, especially technical skills, metadata skills, data analysis, and visualizations. This study addresses this gap by proposing a framework that can address these challenges in the Kenyan university context. Studies reviewed have also presented methodological gaps. For instance, Adeniran and Oyovwevotu (2019); Ali and Naveed (2020) adopted quantitative data that was gathered using a questionnaire. The study would have been enriching if it had adopted a mixed research

approach to complement quantitative data. In view of the above knowledge gaps, this study adopted mixed methods research. Studies by Anduvare (2019); Wachira et al. (2020) were limited to universities in the Nairobi metropolitan area. This study covered a broader region of Kenyan university libraries. Table 2.1 presents a summary of the literature and gaps in the studies reviewed.

Table 2. 1: Research Gaps

<b>Objectives</b>	<b>Empirical studies</b>	<b>Research gaps</b>
Examine existing RSS for doctoral students	Howie, J., & Kara, H. (2022), Ali, N., & Naveed, M. A. (2020), Chawinga, W. D., & Zinn, S. (2020), Anduvare (2019), Wachira, M. N., & Maina, D. J. (2020)	<ul style="list-style-type: none"> <li>➤ Lack of comprehensive framework and service model for RSS</li> <li>➤ Scope limited to private universities in Nairobi.</li> </ul>
Extent of existing RSS for doctoral students	Tang, Y., & Zhang, C. (2019), White, E. (2019), ExLibris. (2019), Delaney, G., & Bates, J. (2018), Smith, S. A., Lubcke, A., Alexander, D., Thompson, K., Ballard, C., & Glasgow, F. (2019).	<ul style="list-style-type: none"> <li>➤ limitation in discussion on the needs and skills of doctoral students in specific subject areas</li> <li>➤ Limitation studies on public university in Kenya</li> <li>➤ Framework that would guide research libraries to provide “full life cycle research support</li> <li>➤ Tailored RSS specific to different discipline</li> </ul>
Strategies used to offer RSS for doctoral students	Bussell, H., Hagman, J., & Guder, C. (2017), Delaney, G., & Bates, J. (2018), Smith, S. A., Lubcke, A., Alexander, D., Thompson, K., Ballard, C., & Glasgow, F. (2019).	<ul style="list-style-type: none"> <li>➤ Limited studies on discipline-based RSS</li> <li>➤ Lack of awareness among doctoral students RSS</li> <li>➤ Limited studies on librarian competencies skills on research and technological landscape</li> <li>➤ Capacity building of library staff in modern tools and skills</li> </ul>
Challenges faced in providing RSS for doctoral students	Chawinga, W. D. (2019). Uwaebuka Wisdom Madu, et al. (2019). Tang, Y., & Zhang, C. (2019).	<ul style="list-style-type: none"> <li>➤ This study proposed a framework that would help refine current services and inform the development of future services and support.</li> <li>➤ Emerging issues</li> <li>➤ Kenya context</li> </ul>

## 2.4 THEORETICAL REVIEWS

Theoretical underpinning is the process of formulating and connecting ideas to explain a phenomenon. In contrast, a theoretical framework consists of the selected theories adopted to explain and guide a given study (Grant & Osanloo, 2014). The theoretical framework serves as a guide for building and supporting one’s study and provides a structure for defining how one will approach the dissertation, in a philosophical, epistemological, methodological and

analytical way (Grant & Osanloo, 2014). According to Sekaran and Bougie (2016), the theoretical structure distinguishes and characterizes the critical variables in the research problem, and subsequently depicts and clarifies the interconnections among the variables. Simply put, theoretical frameworks help in guiding and explaining the independent and dependent variables in the research problem. Buckland (2014) similarly argued that a helpful theory matches the aspects to be focussed on, yet even theories outside the library context can be used for library-related studies. This study was guided by the critical theory of librarianship as the anchor theory.

#### **2.4.1 CRITICAL THEORY OF LIBRARIANSHIP**

Critical theory is associated with the German philosopher Marx Horkheimer (Brenner, 2009). This theory rose as a critique of positivism, which was considered oppressive and enslaving individuals (Horkheimer & Adorno, 1972). Critical theory is concerned with questioning the status quo and social and economic structures in existence and liberation towards a better life. Critical theory has been linked to Enlightenment philosophers, for example, Kant, Hegel and Marx; with Kant and Marx who expressed the desire for a universe where human beings are free and empowered in their lives (Devetak, 2013). Critical librarianship seeks to be transformative, empowering and a direct challenge to power and privilege. It focuses on both critiquing and changing society as opposed to simply understanding or explaining it. This theory includes the development of critical thinking, information literacy and lifelong learning skills in students. Information literacy prioritizes learner engagement and personal agency and aims to create actors for social change rather than passive learners.

While the application of critical theory may be overtly and dominantly evident in ideologies including racism, gender roles and power structures, its application in organizational matters and services may not be clearly visible. The discourse related to critical librarianship has

marked the beginning of a change in the perception of the profession. This change is from one that considered the role of librarians as neutral actors in institutions collecting and disseminating information for the benefit of the users, to one that situates librarians with power structures both within and outside the institutions (Accardi et al., 2010; Gregory & Higgins, 2017).

Critical Theory of Librarianship is the anchor theory of this study as it focuses on investigating and improving library practices from a critical and social perspective. The critical librarianship framework can serve as a roadmap for libraries to enhance their RSS and improve the research experience of doctoral students by prioritizing empowerment, collaboration, and continuous improvement. The critical librarianship framework critically examines the social, political, and cultural dimensions of libraries and the information profession. There are essential principles associated with critical librarianship, which are key to this study.

#### **2.4.1.1 Principles of Critical Librarianship**

The ideals of critical librarianship have long been rooted in the library profession. Librarians engage in critical librarianship in many different aspects of their roles, from instruction to cataloguing to acquisitions, by addressing issues of diversity, information ethics, access to information, the commodification of information, labour, academic freedom, human rights, engaged citizenry, and neoliberalism (Sowa et al., 2020). This study focused on aspects of critical librarianship approaches like librarian power, librarian empowerment, user empowerment, collaboration and disempowerment.

#### ***2.4.1.1.1 Librarian Power***

Like society, organizations too have dominant cultures that influence the way things are done. Librarian power is evident through information work that involves core activities, including classification, cataloguing, reference work, information retrieval and user instructions (Oyieke, 2015). Traditionally, librarian power has revolved around technical skills, expertise, meeting user needs, and controlling access to information and knowledge. Academic librarians play a fundamental role in supporting research at higher education institutions, and contribute tremendously to building the knowledge economy (Kleinveldt, 2018). The academic librarian's power relations with users has traditionally been based firmly on the particular kind of knowledge they possessed and applied (Kogan, 2005).

#### ***2.4.1.1.2 Librarian Empowerment***

Empowerment is about gaining power: every activity in the library is aimed at satisfying and empowering the user. Librarians are empowered through re-skilling and sharing their librarian power with the library users (Oyieke, 2015). Librarians can develop high-quality library services which will enhance students' learning outcomes. According to a study conducted by Nakitare et al. (2020), librarians are not only recognizing the need to develop new skills in order to serve their existing clientele better, but they are also ahead of the game by providing more capacity building than simply knowledge to their users.

#### ***2.4.1.1.3 User Empowerment***

Library users are empowered through access to information resources by using web 2.0/3.0 technologies and information literacy (IL) skills training (Oyieke, 2015). Online library resources and library instructions/training programs are sources of library user empowerment in academic libraries. Empowerment provides library users (students and staff) with the

necessary skills to find and use the information they need for school, study and leisure and equips them with transferable skills which they can use for all sorts of information retrieval and usage, tasks enabling them to cope up with the Information Age (Arua et al., 2017).

Libraries can empower students to take ownership of their research by providing training on research methods and data analysis, promoting critical thinking and analysis, and encouraging students to take an active role in shaping their research questions and methodology. Libraries can also provide opportunities for students to present their research and engage with the wider academic community. For libraries to meet the present challenges of the information age, they should engage in student learning and empower students with essential information skills. Library users are to be empowered so as to satisfy the fourth law of library science, which is, to 'save the time of the reader'. Examples of opportunities for user empowerment include reducing the distance/friction/inconvenience between them and the information that they need, ensuring ready access to resources, and being attentive, alert, and responsive to their current needs (Proffitt et al., 2015).

#### ***2.4.1.1.4 Collaboration***

Collaboration is also an essential element of the critical librarianship framework. Libraries can partner with other stakeholders, such as research offices and graduate schools, to develop and implement effective RSS. For example, libraries can work with research offices to develop training programs that meet the specific needs of doctoral students, or partner with graduate schools to offer mentoring programs that provide support and guidance throughout the research process. Doherty et al. (2016) opined that effective collaboration was a crucial step toward more significant investment in the library by a given institutional administration. The preceding author also noted that encouraging partnership between the library and the writing centre would

a step towards the development of services aimed at bettering students' research-related skills and capabilities, and this would consequently enhance graduation rates.

#### **2.4.1.1.5 Continuous Improvement**

Libraries can assess and evaluate their RSS on an ongoing basis to ensure that they are meeting the changing needs of doctoral students. This can include conducting surveys and focus group discussions to gather feedback, monitoring usage statistics to identify areas of high demand, and reviewing and updating RSS to ensure that they remain relevant and practical.

#### **2.4.1.1.6 User Disempowerment**

According to Oyieke (2015), user disempowerment can be the result of a lack of library skills training opportunities and access to information resources and networks. In the context of library support services, user disempowerment refers to instances in which library users, feel disengaged, misinformed, or helpless when using the library's resources or services. According to Tiefel (2004), most library users need to be made aware of the quality and variety of information available. Libraries are constantly increasing their resources and developing new activities to meet the various information requirements of the users (Arumugam et al., 2019).

Table 2. 2: Mapping Research Questions to Theoretical Theories

<b>S/N</b>	<b>Research questions</b>	<b>Theory/Model and Construct</b>
1	What are the existing research support services for doctoral students in selected public university libraries in Kenya?	Critical theory of librarianship (Availability)
2	To what extent are the research support services utilized by doctoral students in selected public university libraries in Kenya?	Critical theory of librarianship (Accessibility)
3	Which strategies are used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya?	Critical theory of librarianship (User empowerment, Librarian empowerment, Librarian power, Consultation, Advocacy and outreach)

4	What challenges do libraries face in offering research support services for doctoral students in selected public university libraries in Kenya?	Critical theory of librarianship (User disempowerment)
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### **2.4.1.2 Application of Critical Theory in the Study**

The critical theory of librarianship helps to empower librarians and doctoral students through training, new knowledge, professional competencies, and innovative ideas. In the current information landscape, librarians require the skills and competencies to provide quality services to users. Librarians in university libraries who manage research support services for doctoral students are empowered through a critical theory of librarianship which helps them acquire vital resources and provide quality services to users. The theory emphasizes librarian power through acquisition of research support services and resources, and resources must be used effectively and efficiently to sustain and support research support services in the libraries.

## **2.5 CONCEPTUAL FRAMEWORK**

To study the relationship between critical librarianship approaches and research support services, a conceptual framework was used to illustrate the interaction of these variables. According to Kothari & Garg (2019), an independent variable is the stand alone variable, or one that the researcher manipulates or changed to observe its effect on another. In a given study, an independent variable influence or has an effect on the dependent variable. The variables are discussed in detail in the following section.

### **2.5.1 OPERATIONALIZATION OF VARIABLES**

The operationalization of variables involves defining and measuring the independent and dependent variables to clearly assess their relationships.

### **2.5.1.1 RESEARCH SUPPORT SERVICES**

In this study research support services (instructional services, scholarly communication services, research data services, research data management services, library services and research impact management) are the independent variables as the researcher manipulated them to examine their effects on the extent of provision and utilization of research support services in university libraries and how it can influence promotion of research support services. Instructional services can be manipulated through different delivery methods or content, introducing new teaching methods and utilization of technology in the teaching. Scholarly communication, changing strategies by offering manuscript preparation, citation management and publishing strategies. Research data services, introducing a series of workshops on data collection, analysis, and visualization. Research data management, providing personalised trainings or workshops on data management and best practice. Library resources, increasing specialized resources that meet the research areas of doctoral students. Research impact management services, providing a series of trainings on how to measure and communicate research impact.

### **2.5.1.2 POWER DYNAMICS**

The intervening variable helps to explain how and why the independent variable, when manipulated, affects the dependent variable (Kothari & Garg, 2019). In this study power dynamics (user empowerment, librarian empowerment, and disempowerment) are intervening variables since it comes in-between the independent and dependent variable. Power dynamics (librarian power, user empowerment and disempowerment) play a crucial role in shaping research support services for doctoral students. They have a significant impact on resource allocation, policy development, and collaboration, which in turn affects the quality-of-service delivery, student satisfaction, research skills development, and the success of publications. In

essence, librarians act as a bridge that connects their actions to improved outcomes for students. Therefore, it is vital to empower librarians to create a thriving research environment for doctoral students.

### **2.5.1.3 RESEARCH OUTCOME**

Dependent variable is one that is influenced by another; it is influenced by one or more independent variables (Kothari & Garg, 2019). In this study, the dependent variable was research support services outcomes measured by satisfaction level, optimal utilization, and effective promotional techniques of RSS. The satisfaction level includes a variety of aspects of the service experience, in this study it includes provision and utilization of RSS. Optimal utilization, measures how effectively and efficiently are the utilization of RSS by doctoral students in terms of meeting their research needs. Effective promotional techniques are the methods and strategies which librarians are using to create awareness of RSS.

Effective promotion techniques include various communication channels, marketing campaigns, outreach efforts, and educational initiatives designed to promote the visibility and accessibility of RSS. The effectiveness of promotional techniques indicates that the library successfully engages doctoral students and promotes awareness and use of RSS. Lastly is on information literacy skills development, doctoral students are equipped with the knowledge and skills required to navigate the complexities of the scholarly information landscape through targeted instructional sessions, workshops, and personalized assistance provided by the university library.

**Independent Variables**

Research Support Services.

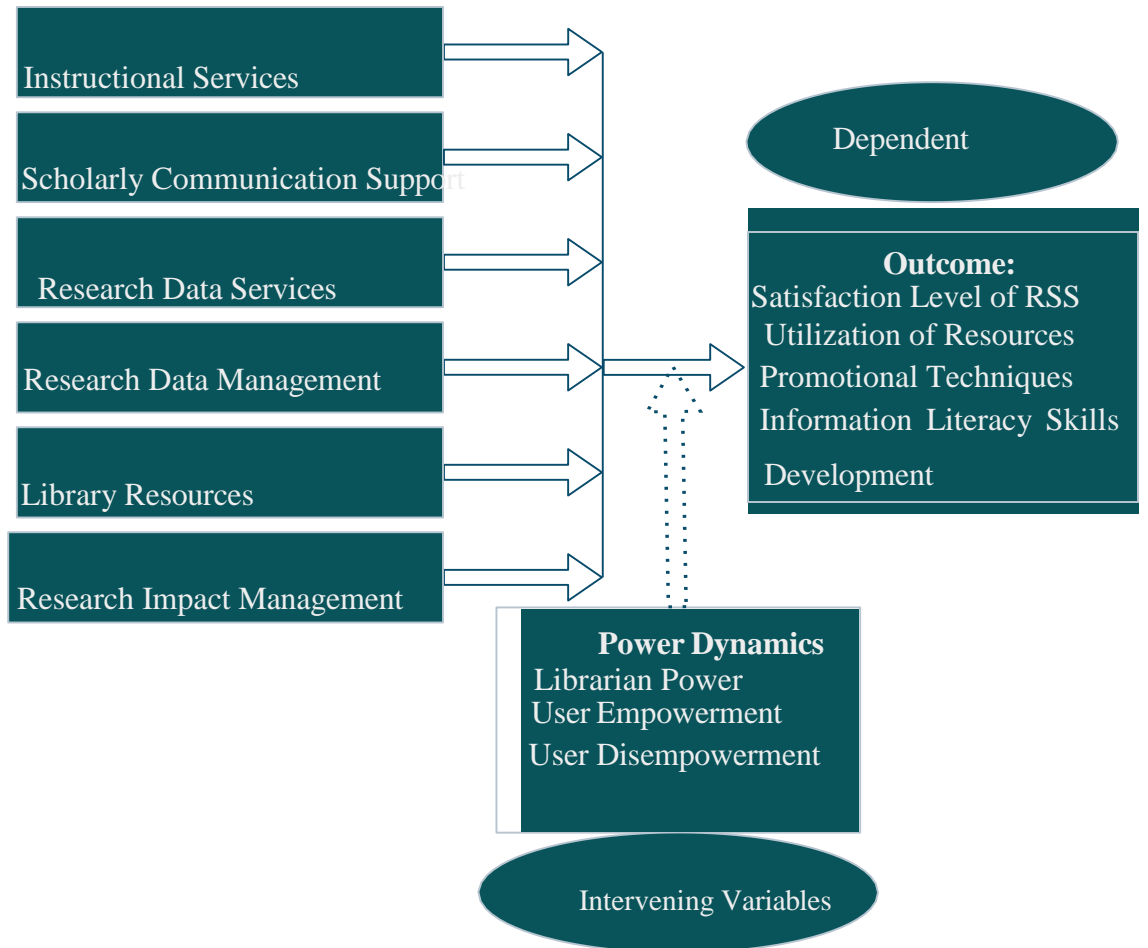


Figure 2. 5: Conceptual Framework of Critical Librarianship for Research

Support Services

Source: Researcher (2024)

## 2.6 OPERATIONALIZATION AND MEASUREMENT OF VARIABLES

This sub-section shows the key constructs used in this study. Operationalization depended on how the variable was used in the current study.

Table 2. 3: Operationalization of Variables

Variables	Indicators	Measurement	Data collection tools	Data Analysis
Research Support Services	Accessibility of service Usability of the service Outreach and Advocacy	Quantitative data 5-point Likert Scale	Questionnaire and Interview	Descriptive
User Empowerment	Information Access Information Literacy Skills development User engagements	Quantitative data 5-point Likert Scale	Questionnaire	Descriptive
Librarian power	Policy formulation Resource allocation, collaborative partnership, communication and outreach	Qualitative data	Interview	Descriptive
Disempowerment	Limited access to research resources Lack of skills Limited access funding Limited access to research data	Qualitative and Quantitative data	Questionnaire & Interview	Descriptive
Effective promotional techniques	Awareness levels	Qualitative data	Interview	Descriptive
Optimal Utilization of RSS	Frequency of service and resources use	Qualitative and Quantitative data	Questionnaire & Interview	Descriptive
Satisfaction levels of RSS	Range of RSS accessed, ease of access, satisfaction ratings	Qualitative and Quantitative data	Questionnaire & Interview	Descriptive
Information literacy skills development	Engagement with RSS	Qualitative data	Interview	Descriptive

## 2.6 CHAPTER TWO SUMMARY

In this chapter, literature on various issues as guided by the research objectives was reviewed. The chapter began by discussing the previous studies done on research support services in various academic libraries. It identified areas of research support services, like research consultations, research data services, research data management, and intellectual property. Further, the strategies and challenges used or experienced by academic libraries were discussed. Gaps in research were identified both at the global and local levels. A highlight of this was the challenge of academic librarian skills, knowledge, and experiences in the provision

of research support services. Evidently, with increasing technology that has affected support services, and the way library users interact with the library, it has become necessary for academic librarians to engage in continuous professional development/empowerment so as to be effective. The chapter also discusses the theoretical frameworks underpinning this study and its application. The next chapter presents the methodology of this study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter describes the methodologies and associated procedures applied in collection of data and information. It begins with a justification of the research philosophy/paradigms and design. The target population, sample and sampling techniques, data collection methods, use of pilot, reliability and validity instruments and data analytical techniques are discussed. Finally, ethical considerations observed in guiding the research problem are also discussed accordingly.

#### **3.2 RESEARCH PHILOSOPHY AND PARADIGMS**

A research paradigm is a worldview that defines what is acceptable to research and how it should be done (Bryman, 2016; Patton, 2015). An understanding of the paradigm underpinning a study is crucial in the research process as it also allows others to appraise the research. Research philosophy refers to a system of beliefs and assumptions regarding knowledge creation (Saunders et al., 2016). The assumptions a researcher makes shape how they understand their research questions, the methods they use and how they interpret their data. No single worldview is ‘correct’; hence, it is upon a researcher to establish the most appropriate paradigm for informing their research design so as to best answer the questions under study (Chilisa & Kawulich, 2012).

The worldviews can be chosen based on their ontological (nature of reality) and epistemological (relationship between the knower and the knowable) positions, and the methodological approaches (how to access the knowledge) as well as ethical standards (moral principles guiding the enquiry) (Cohen et al., 2018; Haq, 2015). On paradigms, Creswell and Creswell (2020) have identified some major research paradigms that have been widely

discussed in the literature; these are postpositivist, constructivist, transformative, and pragmatic worldviews.

Positivism and postpositivist approaches involve both quantitative and experimental methods and techniques, while phenomenological and constructivist worldwide use qualitative perspectives. In a postpositivist worldview, a researcher begins with a theory, collects data that either supports or refutes the theory, conducts additional tests, and makes the necessary revisions (Bryman, 2016). The constructivist worldview is an approach to qualitative research that focuses on subjective experiences. Pragmatism also opens the door to multiple methods, different worldviews, different assumptions as well as different forms of data collection and analysis (Bryman, 2016; Sarantakos, 2013).

The study adopted a descriptive survey research design based on a pragmatic philosophical approach bringing together qualitative and quantitative research. This was because the study opened the door to multiple methods, different worldviews, different assumptions, and different data collection and analytical techniques (Creswell & Creswell, 2020). Pragmatism was helpful in providing a complete picture when quantitative and qualitative data are both collected sequentially in one research design, providing a complete understanding of the research problem (Creswell, 2015; Patton, 2015; Saunders et al., 2016). A quantitative approach was adopted by employing majorly close-ended questions to the doctoral students, while closed and open-ended questions were given to librarians in charge of RSS, with the aim of getting quantitative and rich qualitative information on the research support provided to doctoral students by the libraries. Interviews were administered to the university librarians as they were at the center of the implementation of library support and provided rich opinions.

### **3.3 RESEARCH APPROACH**

Research approaches are plans and procedures for research that span from broad assumptions to detailed methods of data collection, analysis and interpretation (Bryman, 2016; Cohen et al., 2018). The research approach is informed by the philosophical, assumptions, procedures of inquiry, specific research methods of data collection analysis and interpretation. It is also based on the nature of the research problem or issue being addressed, the researcher's personal experiences and the audiences for the study (Creswell, 2015). He adds that there are three research approaches, qualitative, quantitative, and mixed methods.

Qualitative research is an approach to exploring and understanding the meaning that individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures; data is typically collected in the participant's setting, inductive data analysis builds from particulars to general themes, and the researcher makes interpretations of the meaning of the data (Creswell, 2015; Saunders et al., 2016). Qualitative research is characterized by its aims, which relate to understanding some aspects of social life, and its methods that generate words rather than numbers as data for analysis (Merriam & Tisdell, 2016).

Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. Mixed methods research is an approach of inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks (Cohen et al., 2018; Creswell, 2015; Sarantakos, 2013).

This study employed both qualitative and quantitative techniques using a convergent mixed methods approach (Creswell & Creswell, 2020). The purpose of a mixed method approach was

to select and use the best methods to achieve additional insights on the basis that some situations required quantitative strategy while others needed a qualitative approach (Anduvare, 2019; Bryman, 2016; Creswell & Creswell, 2020). Mixed research approach incorporated both quantitative and qualitative methods. The mixed method approach helped the participants to offer detailed information and insights on the enhancement of research support services for doctoral students in their natural settings and the context of the university library environment. Quantitative data provided descriptive and statistical evidence from the respondents on the provision and utilization of research support services for doctoral students. Qualitatively, the participants also provided fundamental ideas, opinions, and experiences regarding research support services for doctoral students in university libraries.

This provided detailed and abundant information on the level of research support services for postgraduate students in the selected university libraries. Librarians shared qualitative experiences and strategic insights upon which research support services for doctoral students could be enhanced and improved in the libraries. The mixed research approach, converging or merging quantitative and qualitative information from the library staff and the doctoral students provided ideas and experiences towards research support services in university library settings. This provided balanced and detailed information for quantitative and qualitative research questions.

### **3.4 RESEARCH DESIGN**

A research design is the whole plan that spells out the type of data needed for the research, the method to be employed to gather and analyze the data that will be used to answer the research question.

The research design must provide relevant data and information together with practical methods for collection, analysis, and dissemination of the results.. Research design has to be

articulated in such a way that its components will be connected correctly in the most effective way to produce the correct answers to the research questions. Creswell (2015) argued that the selection of a suitable design is based on the nature of the research problem or issue being addressed by the study.

Creswell and Creswell (2020) identified three research designs under the mixed research approach. These are convergent parallels - where the researcher converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem. In this design, the investigator typically collects both forms of data at the same time and then integrates the information into the interpretation of the overall results. Explanatory sequential is another design in which the researcher first conducts quantitative research, analyses the results and then builds on the results to explain them in more detail with qualitative research. Finally, in the exploratory sequential design, the researcher first begins with a qualitative research phase and explores the views of participants. The data is then analyzed, and the information used to build into a second, quantitative phase.

This study employed a convergent parallel design because both the qualitative and quantitative data were collected during the same phase of data collection. The strengths of using a convergent design include allowing data to be collected concurrently during one phase of research. The goals of convergent parallel design are to gain a more complete understanding of two databases, verify results from different methods, and compare multiple levels within a system (Sharma et al., 2023). This is a challenging part where the researchers should have strong fundamental knowledge to converge or merge the data (Creswell& Creswell (2020)).

### **3.4.1 CONVERGENT PARALLEL DESIGN**

To gain an in-depth understanding of the topic, this study employed a convergent parallel design because both the qualitative and quantitative data were collected during the same phase

of data collection. A convergent parallel design involves the simultaneous collection of qualitative and quantitative data in the same phase of the research process, weighs the methods equally, analyses the two components independently, and then compares the results to make out if the findings substantiate or disconfirm each other (Creswell, 2015). In this study quantitative and qualitative data were collected with doctoral students and librarians (in charge of RSS and university librarians) respectively within the same period. Analysis of quantitative and qualitative data was done separately and after that, the results were mixed during interpretations based on the various themes derived from the study variables. Eventually, the researchers merged the results for comparison.

The purpose of adopting a convergent parallel design mixed methods was to provide a comprehensive analysis of the research problem by converging or merging quantitative and qualitative data (Razali et al., 2018). In this study the researcher was able to capture the perspectives and insights of doctoral students and the librarians grounded in the real-life experiences and challenges. This gave a complete picture of how critical librarianship is perceived and practiced in university libraries. Some of the challenges encountered when merging the data were finding common themes or patterns across the datasets and also reconciling contradicting findings.

### **3.5 POPULATION OF THE STUDY**

Population is the universe of units or groups selected in the research process to generalize the entire sample (Bryman, 2016; Trochim et al., 2016). The population of this study encompassed all chartered public universities in Kenya as of July 2020. The unit of analysis was therefore all public university libraries, the doctoral students who were writing their theses and proposals, as well as university librarians and librarians who provided research support services to graduate students. Public universities were chosen because they are more accessible to a

broader range of students compared to private universities, and they receive funding for research activities from the government, which can influence the development and implementation of research support services. All public universities offering doctoral programs were targeted for this study (See Appendix 1). The public universities offering doctoral programs were Twenty-eight (28) but were limited to eight public universities.

### **3.5.1 TARGET POPULATION**

The target population is a group of people or units that a researcher wishes to observe and who become the focus of the study (Barnsbee et al., 2018). The target population for this study was doctoral students registered for the 2017/2018 academic year who are in their second year and above. First-year doctoral students are not eligible for this study because they may need to have used the library resources and services more for extensive research. Librarians who support doctoral students' research needs and university librarians from public universities in Kenya are also included in this study. This category of librarians was selected because they work directly with doctoral students to provide research support services and university librarians oversee and carry out the management of research support services. The target population for this study comprised 5352 doctoral students, 43 library staff, and eight university librarians from selected public universities in Kenya.

Table 3. 1: The Population of the Study

#	Universities	Doctoral Students	University Librarians	Library Staff
1	University of Nairobi	1692	1	9
2	Jomo Kenyatta	1549	1	7
3	Maseno University	638	1	6
4	Moi University	579	1	6
5	Egerton University	504	1	5
6	Masinde Muliro University	238	1	4
7	Chuka University	84	1	3
8	Pwani University	68	1	3
	<b>Total</b>	<b>5352</b>	<b>8</b>	<b>43</b>

### 3.6 SAMPLING TECHNIQUES

Sampling is the selection of a group of individuals from a population to represent the entire target population (Stratton, 2023). Studying an entire population of interest would be preferred by researchers, but limitations such as large populations, diversity, and a population being scattered geographically can make it time consuming and expensive, thus, impractical (Bryman, 2016; Saunders et al., 2016). According to Stratton (2023), a sample will most likely represent the entire target population if the sample is large enough and if a random sampling technique is used. The study was interested in establishing the initiatives for enhancing research support services in these universities. However, as it was only possible to collect data from some of the 28 universities, sampling was carried out.

Saunders et al. (2016) observed that sampling provides a valid alternative when it is impractical to survey the entire population, as budget and time constraints prevent surveying the entire population. For this study 8 public universities were selected. Based on the doctoral program enrolments and graduation rates as per the university statistics for the 2017/2018 academic year (Commission for University Education, 2019), the total population of doctoral students enrolled at the selected eight public universities is 5352, librarians supporting RSS is 43 and

university librarians are eight. There are two major sampling procedures in research referred to as probability and non-probability sampling.

According to Leedy and Ormrod (2019), probability sampling enables the researcher to specify in advance each segment of the population to be represented in a study. The goal of probability sampling is to select a reasonable number of subjects, objects or cases that represent the target population while non-probability sampling includes accidental, haphazard or convenience sampling, purposeful sampling, quota sampling, and snowball sampling (Bryman, 2016; Sanaman & Kumar, 2014; Trochim et al., 2016). Sampling methods and techniques provide the required guidelines in the research process and investigation problem. In this research problem under investigation, the two types of sampling methods were applied in various aspects, including selection of the investigation units and population.

The study used the non-probability sampling of the purposive type to get the sample of universities that took part in the study, the librarians and university librarians included in the study sample. According to University statistics of 2017/2018 academic year (Commission of University Education, 2019), eight universities were selected based on the former provinces (that is one university per province) and PhD enrolment rates versus graduation rates considered. The selected universities were: The University of Nairobi, Jomo Kenyatta University of Science and Technology, Moi University, Maseno University, Masinde Muliro University, Egerton University, Chuka University and Pwani University. Since the study targeted eight public universities, two universities were picked from Rift Valley province because of its vast geographical region.

### **3.6.1 PURPOSIVE SAMPLING**

Purposive sampling is a non-random method of sampling where the researcher employs their expertise or judgment to select a sample that may represent a target population. To demonstrate

the possible generalization of purposeful sampling to a target population, the sample must be chosen using explicit inclusion and exclusion criteria (Stratton, 2023). The study employed a purposive sampling technique to select eight public universities based on doctoral program enrolments and graduation rates. The selection included universities that had doctoral enrolment numbers and graduation rates as shown in Table 4. The selected public universities were The University of Nairobi, Jomo Kenyatta University of Science and Technology, Moi University, Maseno University, Masinde Muliro University, Egerton University, Chuka University and Pwani University. Purposive sampling was also used to select university librarians because they manage and implement research support services in their respective universities and librarians who oversaw RSS because of their expertise and experience with the provision of research support services.

### **3.6.2 STRATIFIED RANDOM SAMPLING**

Stratified sampling is when the population is divided into strata (or subgroups) and a random sample is drawn from each (Taherdoost, 2016). This sampling method divides the population into two or more non-overlapping subgroups (i.e., strata) that appear relevant (homogeneous) and are based on some shared characteristics (Şanlı, 2023). The proportions are determined in stratified sampling, and then simple random sampling occurs within each stratum until the proportionate sub-sample size is reached (Casteel & Bridier, 2021). This target population was divided into strata (homogeneous sub-groups within a population) based on the stages of their research (e.g. second year, third year ...). Participants were then chosen at random from each sub-group. It should be noted that stratifying the selected target population into strata (stratified sample) based on the stages of their research was challenging. It was difficult to identify what stage the participants were at, and the researcher decided to merge some of the stages.

### 3.7 SAMPLE SIZE

Several factors need to be considered in determining the appropriate size of the sample. Sample size depends on what one wants to know, the purpose of the inquiry, what is at stake, what will be helpful, what will have credibility, and what can be done with available time and resources (Creswell & Poth, 2018). Eight university libraries were purposively sampled. These are the University of Nairobi (UoN) Library, Jomo Kenyatta University of Agriculture and Technology (JKUAT) Library, Maseno University Library, Moi University Library, Masinde Muliro University of Science and Technology (MMUST) Library, Egerton University Library, Chuka University Library and Pwani University Library. In each university library, data was collected from the head of library services, librarians in charge of RSS and doctoral students who were registered at the time of data collection.

The Yamane (1967) statistical method for determining sample size in relation to the population under investigation was used to estimate the sample size for students. The sample size was calculated based on the Yamane (1967) formula that was given as:

$$n = \frac{N}{1 + N(e^2)}$$

Where: n = the desired sample size of the target population. N= the target population e = the level of statistical significance (0.05 based on 95% confidence level)

Thus, based on the above formula, the desired sample size for this study was given as

$$n = \frac{5352}{1 + 5352(0.05^2)}$$

**n=372**

The sample size for the various universities was then calculated based on the proportional allocation and summarized in Table 3.2.

### 3.7.1 SAMPLING FRAME

The sampling frame used for this study is indicated in Table 3.2.

Table 3. 2: Sample Distribution of Doctoral Students per University

<b>Doctoral Students</b>			
<b>University</b>	<b>Targeted Population (N)</b>	<b>Proportion</b>	<b>Sample Size (n)</b>
University of Nairobi	1692	32%	117
Jomo Kenyatta	1549	29%	108
Maseno University	638	12%	44
Moi University	579	11%	40
Egerton University	504	9%	35
Masinde Muliro University	238	4%	17
Chuka University	84	2%	6
Pwani University	68	1%	5
<b>Total</b>	<b>5352</b>	<b>100%</b>	<b>372</b>

Source: Researcher (2023)

The total population comprised 32 librarians sampled purposively because they are knowledgeable and deeply understand specific issues surrounding RSSs and 8 university librarians as the key informants. The researcher interviewed 33 librarians (26 library staff and 7 university librarian), while the remaining 7 could not be interviewed because of their tight work schedules

Table 3. 3: Sample Distribution of library staff per university

<b>University</b>	<b>University Librarians</b>	<b>Sample Size (n)</b>
University of Nairobi	1	6
Jomo Kenyatta	1	5
Maseno University	1	5
Moi University	1	5
Egerton University	1	4
Masinde Muliro University	1	3
Chuka University	1	2
Pwani University	1	2
<b>Total</b>	<b>8</b>	<b>32</b>

Source: Researcher (2023)

### **3.8 PILOT STUDY**

A pilot study enables the researcher to determine if the data collection instruments produce the data needed to answer the research questions. According to Bryman (2016), a pilot study can be carried out in research that employs either qualitative, quantitative, or a combination of both methods. In this study, a pilot was carried out at the Rongo University. This University was chosen based on the supposition that it possessed comparable attributes to those in the study sample. Specifically, the criterion was that the university was chartered as of July 2020 but was not part of the samples studied. Convenient sampling was used to pick the doctoral students and purposive sampling was applied on the library staff. The questionnaire and the interview schedule were piloted. Feedback from the pilot study was used to improve the tools and to establish the duration of the interview sessions.

### **3.9 DATA COLLECTION**

In mixed-method research, data is collected using two or more complementary methods of data collection that enable the collection of both qualitative and quantitative data (Cresswell, 2015). This study used primary methods to collect data that encompass both qualitative and quantitative data collection instruments. This included the use of interviews and questionnaires. Questionnaires were directed to doctoral students, while interview schedules were used to collect data from university librarians and the research support librarians. The questions in both the data collection instruments reflected themes derived from the research questions, theoretical framework, and literature review.

#### **3.9.1 QUESTIONNAIRES**

A questionnaire is a set of questions designed to extract information relating to a survey. A questionnaire offers greater anonymity, and thus, is likely to obtain accurate information

(Kumar, 2018; Wimmer & Dominick, 2013). Closed and open-ended questions were used. According to Kumar (2018), the use of a questionnaire with closed and open-ended questions is beneficial for eliciting factual information, while open-ended questions are ideal for seeking opinions, attitudes, and perceptions. A disadvantage of the questionnaire is the need for more opportunities for clarification, for example, when respondents cannot understand some questions (Kumar, 2018; Wimmer & Dominick, 2013). Self-administered questionnaires were designed to enable the collection of facts, attitudes, and opinions and establish the respondents' experiences and knowledge about different concepts, and their responses were reported anonymously.

This study adopted a questionnaire for data collection from the doctoral students. The questionnaire was used because it allowed the researcher to reach a more significant number of doctoral students, and the questionnaire allowed a standard way of collecting data. The participants answered the same questions in the same way, thus easing the process of data analysis and comparison of responses across different groups of doctoral students. The questionnaire was adapted from a related study that was previously done by Howie and Kara (2022) for doctoral students (See Appendix V). The questionnaire was redesigned to relate the questions to the current study's objectives. The questionnaire was divided into sections to reflect the thematic areas captured in the research questions, theoretical framework, and literature review. The survey used a five-point Likert scale to evaluate the availability, usage, and satisfaction levels of library resource sharing. This format allowed participants to select the response that best reflected their level of agreement with a particular statement (Babbie, 2017). The distribution of questionnaires may be as an online questionnaire, via email, post, or face-to-face by hand (Rowley, 2014), for this research online and physical (face to face) questionnaires were administered depending on the prevailing circumstances. Low response

rates were experienced, and the researcher sent notifications and follow-up emails to the respondents.

### **3.9.2 INTERVIEWS**

Interview guides are considered an ideal resource for qualitative data collection in relation to additional questions (Kothari & Garg, 2019; Sutton & Austin, 2015; Trainor, 2013). Interviews can be structured or unstructured (Leedy et al., 2019). According to Kumar (2018), structured interviews involve the preparation of a predetermined set of questions specified in an interview schedule. Unstructured interviews, on the other hand, offer complete freedom to the researcher in terms of the content and structure of the questions to be used on the respondents (Kumar, 2018). This study used semi-structured interviews in which the researcher prepared an interview schedule based on the specified variables in this study (See Appendix 7 and 9). Face to face interviews were conducted among the seven university librarians and the twenty-six librarians (who provide RSS) of university libraries selected for this study, at their offices and on dates and times agreed upon by the interviewees and the researcher. However, scheduling interviews across multiple universities was logistically complex because of the librarians' busy schedules. Librarians were consulted so as to agree on a time that fit their work schedule. In this study, the interview was recorded using a Sony audio recorder, and notes were taken by hand in a notepad as a backup. The information generated from the interviews was also used to support and supplement the information gathered from the questionnaires.

### **3.10 DATA COLLECTION PROCEDURES**

In this study, the researcher used questionnaires to collect quantitative data from doctoral students (See Appendix V). The questionnaire was completed by the respondent on their own. Data was collected for six months. In addition, the researcher conducted interviews with the

librarians and the university librarians (Appendix 8 and 9). Table 3.4 maps data collection tools to research questions. After the survey respondents were identified, access to the institutions and respondents was negotiated before data collection began. Letters were sent to the selected universities to request permission to conduct research thereby administering questionnaires and conducting personal interviews. Each respondent was asked to sign an informed consent form, which informed them of the purpose of the study, how their responses would be handled, and allowed them to express their willing participation in the study. Afterward, they received questionnaires or participated in interviews. The research assistant was identified in each university, and preliminary meetings and briefing sessions were done. Their main task was to distribute and collect all the filled questionnaires.

**The specific steps taken included the following:**

- The research assistants were trained on how to approach participants, introduce the study, and explain the purpose of the questionnaire.
- They were instructed to use a standardized script when providing instructions on how to complete the questionnaire, ensuring that participants understood each section.
- The questionnaires were distributed either in person or electronically, depending on the participant's preference, and the assistants ensured that responses were collected quickly and securely.
- After collecting the data, the research assistants checked the responses to ensure they were complete before submitting them for analysis.

Table 3. 4: Mapping Research Questions to Sources of Data

Research Questions	Respondents	Source of Data	Data analysis Strategy
What kinds of research support services currently offered for doctoral students in selected public university libraries in Kenya?	Doctoral students and Librarians	Questionnaires and Interviews	SPSS (Descriptive statistics), Thematic analysis
To what extent were the research support services utilized by doctoral students in selected public university libraries in Kenya?	Doctoral students and Librarians	Questionnaires and Interviews	SPSS (Descriptive statistics), Thematic analysis
Which strategies were used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya?	Librarians	Interviews	Thematic analysis
What challenges did libraries experience when offering research support services for doctoral students in selected public university libraries in Kenya?	Doctoral students and Librarians	Questionnaires and Interviews	Thematic analysis

### 3.11 DATA ANALYSIS AND INTERPRETATION

The process of data analysis was guided by the research objectives. This research employed both quantitative and qualitative methods to gather data, which were subsequently analysed using both quantitative and qualitative approaches. Incorporating two sets of data into one study makes mixed methods data analysis particularly difficult, requiring careful preparation and organization of both datasets (Leavy, 2017). In the present study, the processes of data collection and analysis occurred concurrently, guided by the research questions. Qualitative data was analysed thematically by use of Atlas.ti software version 23, whereas quantitative data was analysed using SPSS to generate descriptive statistics. Interview and questionnaire data were independently analysed and thereafter the quantitative results were interrelated with the qualitative results in a final discussion (Tashakkori and Teddlie 2021).

Before the data analysis commenced, the researcher performed three important activities: data storage, transcribing audio sources (for qualitative data), and cleaning the data (Cohen et al., 2018). Analysis of the data collected in this study was based on the convergent mixed methods design (Creswell, 2015; Creswell & Plano Clark, 2011). Creswell (2015) mentions various

ways the sets of data can be merged in this design. They include a side-by-side approach, data transformation and joint display of data.

### **3.11.1 QUANTITATIVE DATA ANALYSIS**

Quantitative data from the surveys were analysed using the IBM SPSS statistical package version 20.0 to generate descriptive statistics. The choice of SPSS was based on the fact that it allowed for easy manipulation of statistical data. It was also recommended for students and researchers in the social sciences because it contained an extensive range of univariate and multivariate procedures used in the social sciences (Georjeanna, 2020; Rahman & Muktadir, 2021). This involved creating data files, checking and transforming the data, data interpretation, analysis and finally, report writing. The researcher concentrated on testing the variables and establishing their relationships (Creswell, 2015).

### **3.11.2 QUALITATIVE DATA ANALYSIS**

Most of the qualitative data was gathered from university librarians and librarians who were in charge of research support services. To obtain comprehensive insights, qualitative data from university librarians and librarians was analysed thematically using ATLAS.ti, achieved through a systematic coding system. The interview schedule for library librarians and university librarians had clearly labelled sections conforming to the research objectives under study. Firstly, the researcher examined the responses by recording transcribing and notes taking into word documents and developed a preliminary group of themes. Later, the researcher reviewed the responses again and assigned codes based on the preliminary themes, while also including new themes when required. Qualitative data was independently analysed and thereafter the quantitative results were interrelated with the qualitative ones in a final discussion (Tashakkori et al., 2021). This process was iterative as the researcher had to keep defining and

refining the codes. The results of the qualitative analysis are presented using direct quotes from the participants' responses. The researcher used a coding structure which emerged from the literature review, previous research, and new codes emerging from interview responses.

Once the data was coded, the researcher re-read the data and coding to check the consistency, validity, and reliability of coding process before analysing the coded data. In reporting the findings, the researcher used both direct quotes and paraphrased common ideas emerging from participants. The researcher concentrated on noting and reporting the social reality resulting from the field data (Silverman, 2019). In this study, the researcher first transcribed the recorded interviews and saved them as individual Microsoft word files before being exported to AtlasTi, version 22. Keywords to be used as codes were generated based on the variables derived from the research questions, theories adopted as well as other themes and ideas that emerged from the interviews. In AtlasTi, selections of text and paragraphs were tagged and named with the predetermined codes. The codes were then organized into themes to make data presentation easier.

### **3.12 RELIABILITY AND VALIDITY**

The goal of all researchers, regardless of their field, is to produce reliable, valid, unbiased, sensitive, and comprehensive findings. A researcher must test and assess the precision and capacity of an instrument or questionnaire to ensure that it accurately measures what it intends to before administering the survey, in order to obtain accurate responses from participants (Kumar, 2021). Reliability and validity are used as considerations to ensure quality when assessing the construction and evaluation of measurement (Babbie, 2016; Creswell & Creswell, 2020).

Reliability is the ability of the data collection techniques and analytical procedures to produce consistent data if done by the researcher or repeated by different researchers (Saunders et al.,

2016). Reliability is concerned with consistency, predictability and stability of instruments used in research (Kumar, 2018). It questions whether the same results could be recorded if another researcher were to conduct similar research using the same instruments.

Validity establishes the appropriateness and accuracy of the research procedures used to find answers (Kumar, 2018). Validity in research is concerned with the accuracy and truthfulness of scientific data; it is the extent to which data collection methods accurately measure the research variables or the extent to which research data reflect the actual results (Cohen et al., 2018; Bryman, 2016). Validity questions if the research is really measuring what it is supposed to measure, thus getting answers to questions it was intended to answer. Creswell and Poth (2018), Flick (2015), as well as Ngulube (2022) suggested testing the validity of research instruments by examining their content, construct, and criterion-related validity. They recommend using multiple methods to test the validity of the instrument, including expert review, pilot testing and statistical analysis in this study the questions were checked whether they were relevant and gave the desired information.

This study employed different methods to ensure rigor and trustworthiness of the findings. To enhance credibility, which refers to the accuracy and reliability of the description and interpretation of the phenomenon, before conducting the actual study, a pilot study was conducted among doctoral students and university librarians who did not make up the final sample. Additionally, a discussion was held with librarians and professional colleagues from other non-participating public universities to review the data collection instruments and improve them for the data collection process. This was done in consultation with the supervisors. The study also utilized triangulation in the data collection process. This enabled the control of researcher bias and facilitated the establishment of valid propositions.

### **3.13 ETHICAL CONSIDERATIONS**

According to Israel (2014), research ethics can be defined as a set of moral principles and values that guide researchers in their conduct and decision-making throughout the research process. Researchers are expected to act in accordance with these principles to ensure that their research is conducted in a way that is responsible, transparent, and trustworthy. Research ethics also involves the identification and management of potential ethical issues that may arise during the research process, such as issues related to informed consent, confidentiality, and privacy.

Before data collection, the researcher ensured that all data collection instruments were valid and reliable. The researcher sought an approval letter for data collection which was issued by the School of Graduate Studies of Technical University of Kenya, a request that was granted through the letter appearing as Appendix XIV. Research tools were submitted to the Daystar University Ethics and Research Committee (ERC) and the researcher obtained ethical clearance (Appendix XII). This research study complied with ethical standards of informed consent, confidentiality and anonymity as stipulated by the guidelines of the Daystar University Ethics and Research Committee (ERC). The researcher then sought permission to carry out research from the National Council for Science and Technology (NACOSTI). This was done through an official application as provided for in the NACOSTI official website, provision of the necessary documentation and payment of the requisite fees. The research permit was granted (Appendix XIII). Subsequently, the researcher went further to seek permission to conduct research from all the selected public universities by writing to the authorized university officials. The permission was also granted by the eight universities (Appendix XIV-XXIII). During data collection, the researcher sought informed consent from every respondent through an informed consent form prepared as per the guidelines of the Daystar University Ethics and Research Committee (ERC). The consent form was attached to the questionnaire as the first

part before the question items such that the respondent would give informed consent before embarking on the other question items of the physician and digital questionnaire (See Appendix IV). The participants in this study were informed verbally about the nature of the study and what would become of the findings once the study had been completed. The respondents were assured that their privacy and confidentiality would be protected by treating their responses with the highest levels of confidentiality and anonymity. Finally, all sources were acknowledged through references using APA style 7th edition to avoid plagiarism.

### **3.14 CHAPTER SUMMARY**

This chapter has provided a detailed description of the methods and techniques used in the study to achieve its objectives. It covers various aspects, including the research paradigms, research design, population, sampling techniques, data collection techniques, data analysis and procedures, and ethical considerations. The research paradigms refer to the philosophical and theoretical frameworks that guided the study, while the research design outlines the overall structure of the study. The chapter also discusses the population and sampling techniques used to select participants, data collection methods, and procedures used to analyse the data. Finally, ethical considerations are highlighted, emphasizing the importance of ensuring that the study adheres to ethical principles and guidelines. This chapter forms the basis on which the research was undertaken. This data is presented and analysed in chapter four.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND PRESENTATION**

#### **4.1 INTRODUCTION**

This chapter presents study findings in the form of both quantitative and qualitative data with the aim of establishing how a critical librarianship approach could enhance RSS amongst doctoral students in selected public university libraries. Presentation of study findings is based on study objectives namely to examine the existing RSS to doctoral students in public universities, evaluate the extent of utilization of RSS, establish the strategies used by university libraries to promote RSS, and analyse the challenges faced by libraries in providing RSS for doctoral students in selected public university libraries in Kenya.

Analysis of quantitative data collected through questionnaires involved the use of Statistical Packages for Social Sciences (SPSS) version 20.0. SPSS allows easy manipulation of statistical data through an extensive range of univariate and multivariate procedures (Landau & Brian, 2003; Peugh & Enders, 2005). The qualitative data was analyzed using ATLAS.TI software. The chapter begins by presenting the descriptive analysis and thematic analysis of the open questions. Presentation of findings is narrative and graphics form of pie charts, bar graphs, figures and tables with percentages rounded off to the whole number. Data analysis commenced after cleaning, coding and entry into SPSS frame. For qualitative data, the researcher focussed on establishing common themes with special attention paid to particular variations and objectives of the study.

#### **4.2 RESPONSE RATE**

The population for this research consisted of the libraries of eight Kenyan public universities namely the University of Nairobi library, Jomo Kenyatta University library, Moi University library, Egerton University Library, Maseno University Library, Masinde Muliro University

Library, Chuka University Library and Pwani University Library. The target population was doctoral students who were writing their proposals and theses, librarians who supported RSS, and university librarians. Out of 372 questionnaires distributed to doctoral students from the selected eight public university libraries, 283 questionnaires were completed and returned which translates to a response rate of 76%.

Secondly, out of eight scheduled interviews with the university librarians, seven honoured translating to an 88% response rate. One university librarian could not be reached to participate in the interview because of her busy schedule. Thirty-two library staff from the selected public universities were expected to participate on in the semi- structured interview. As at the time of the interview 6 library staff from selected public universities were on leave and could not be reached to participate in the interview. 26 library staff were interviewed giving a response rate of 81%. In general, the response was successful across all sampled categories of respondents involved with over 50%. According to Saunders et al. (2016), although a response rate of 50% is generally acceptable, successful response rates equal to 60% and above are more desirable and possible when using efficient data collection strategies. The results presented in Figure 4.1 and 4. 2 gives a summary of the response rates for the different categories of respondents.

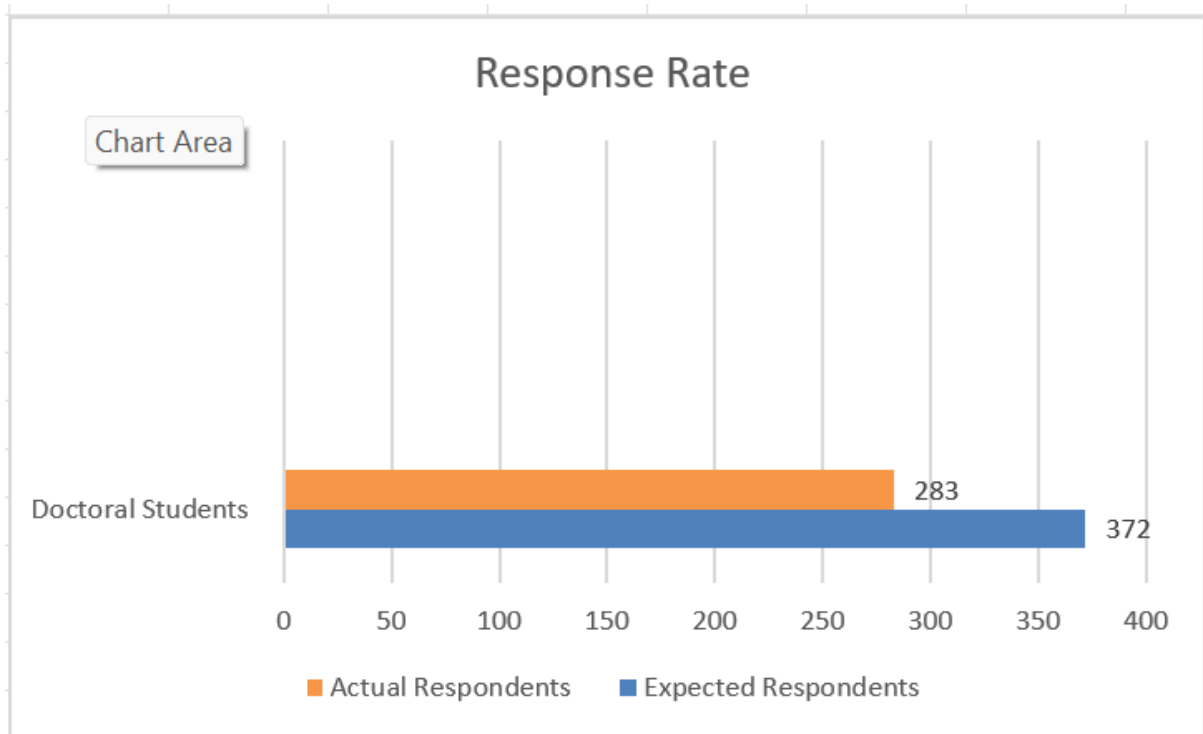


Figure 4.1: Response Rate (N=283)

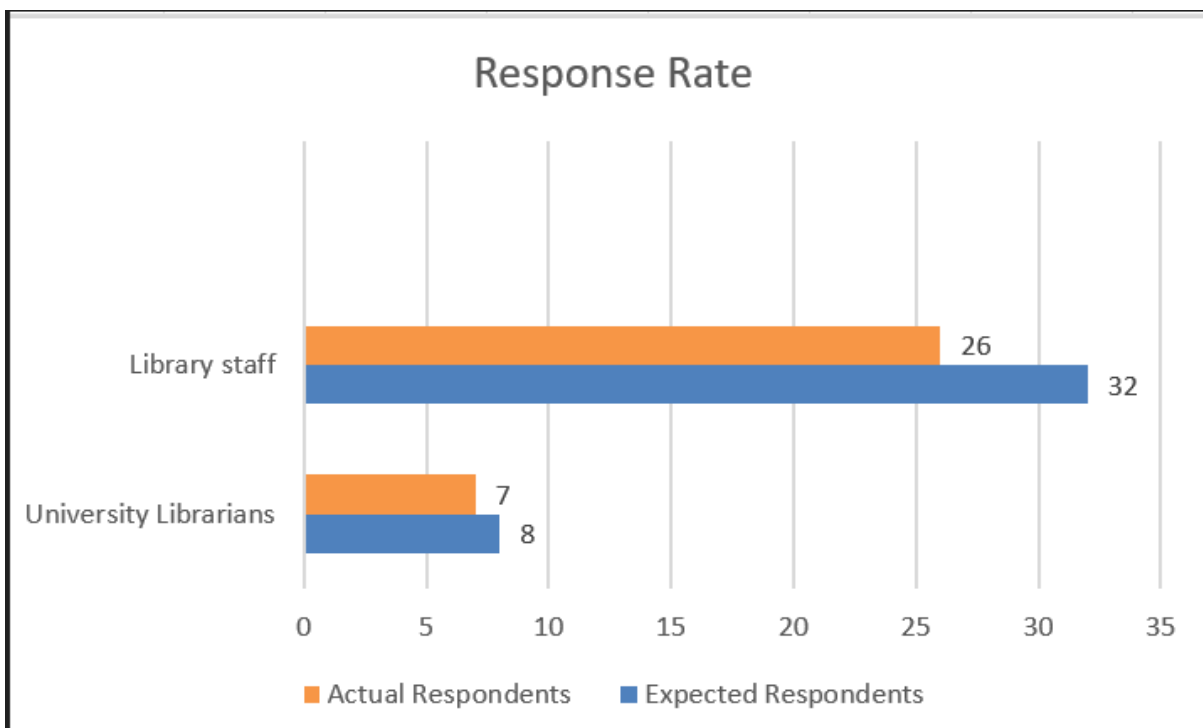


Figure 4.2: Response Rate (N=26, 7)

### **4.3 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS**

This section contains demographic data for doctoral students, university librarians and university library staff. The personal information sought from the doctoral students pertained to their respective universities, fields of study, mode and year of study and gender. For the librarians and library staff, respective university, gender, designation, period of service and the highest level of education. Gathering such information was crucial since the respondents' characteristics had an influence on their individual capacity to articulate the different issues explored in this study.

#### **4.3.1 DOCTORAL STUDENTS**

The next section of the study provides demographic information on the doctoral students from the selected public universities, including their level of study, mode of study, and gender.

##### **4.3.1.1 Distribution of Doctoral Students by University**

The research considered doctoral students' variables of gender, parent university, mode and year of study experience in order to understand RSS from the selected institutions as presented Figure 4.2 shows distribution of doctoral students as per the university. It reveals that 89 (31%) of the doctoral students were from the University of Nairobi, 82 (29%) from JKUAT, 34 (12%) from Moi University, 30 (11%) Maseno University and 26 (9%) attended MMUST. From Egerton University, they were 13 (5%), Chuka University 5 (2%) and Pwani University 4 (1%). The number drawn from each institution was proportionate to the total number of doctoral students enrolled there hence the data collected was considered representative enough to draw study conclusions. In this study, doctoral students drawn from different disciplines participated as outlined in Appendix XXIV. They were either doing thesis by coursework or thesis by research.

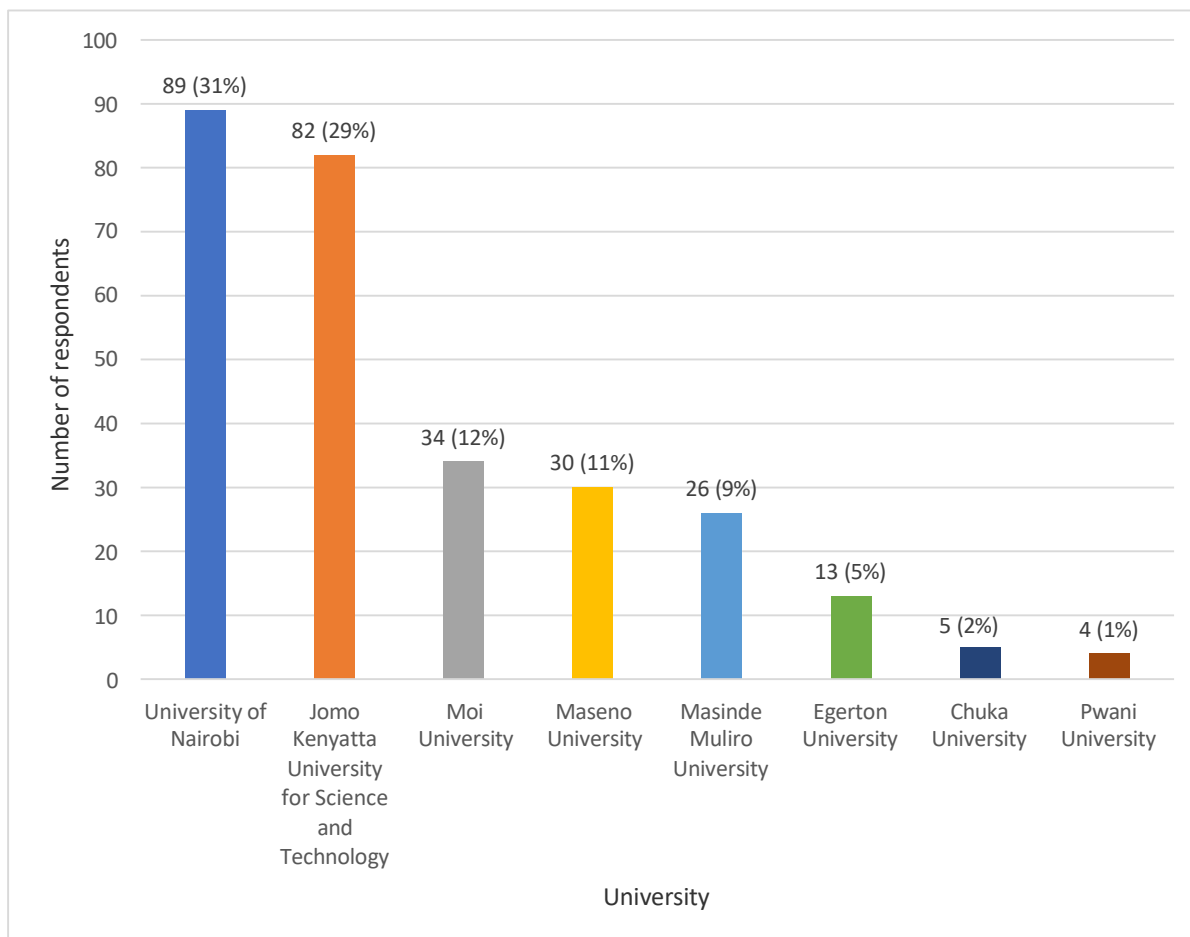


Figure 4. 3: Distribution of Doctoral Students by University (N=283)

Source: Field Data (2023)

#### 4.3.1.2 Distribution of doctoral students per year of study

The data presented in Figure 4.3 displays the distribution of doctoral students per year. The findings indicate that majority of the doctoral students, 96 (34%), were in their fifth year of study, whereas 65 (23%) were in their sixth year. Additionally, 37 (13%) and 36 (13%) of students were in the second and fourth year of their studies, respectively. Lastly, 29 (10%) and 20 (7%) of students were in their seventh year and above, and third year of their studies, respectively.

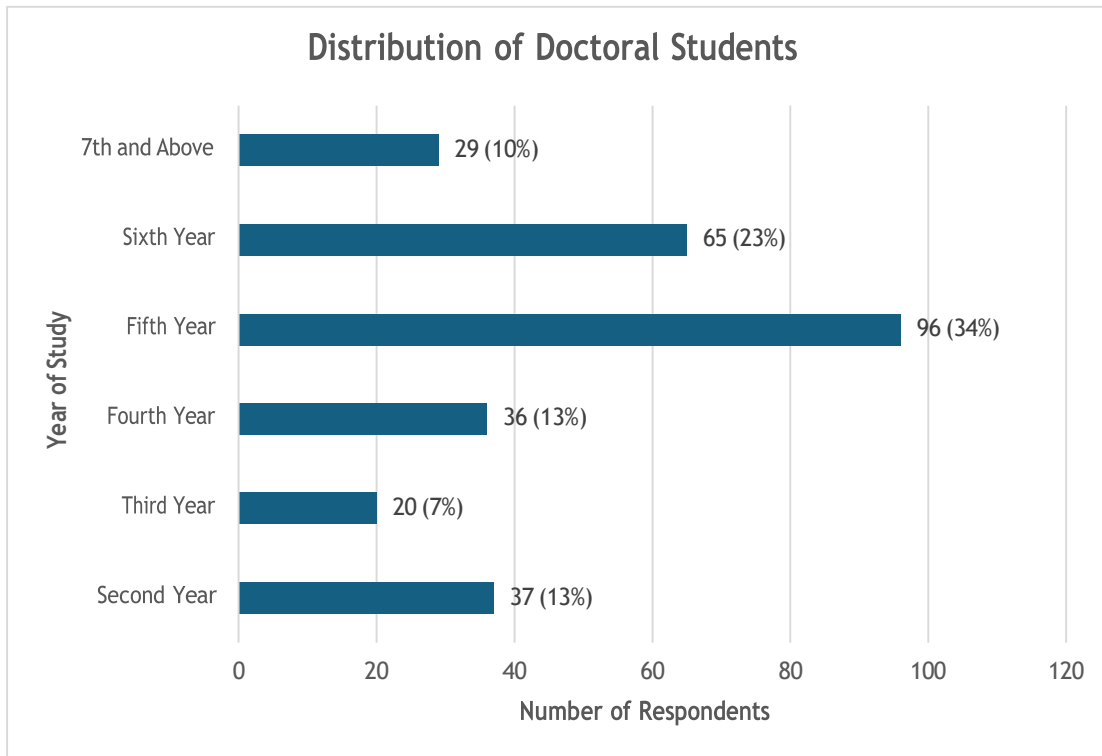


Figure 4.4: Distribution of Doctoral Students by Year of Study (N=283)

#### 4.3.1.3 Distribution of Doctoral Students per mode of Study

Figure 4.5 shows that 234 doctoral students (83%) were doing coursework and research, while 49 (17%) were undertaking the doctoral program through research thesis.

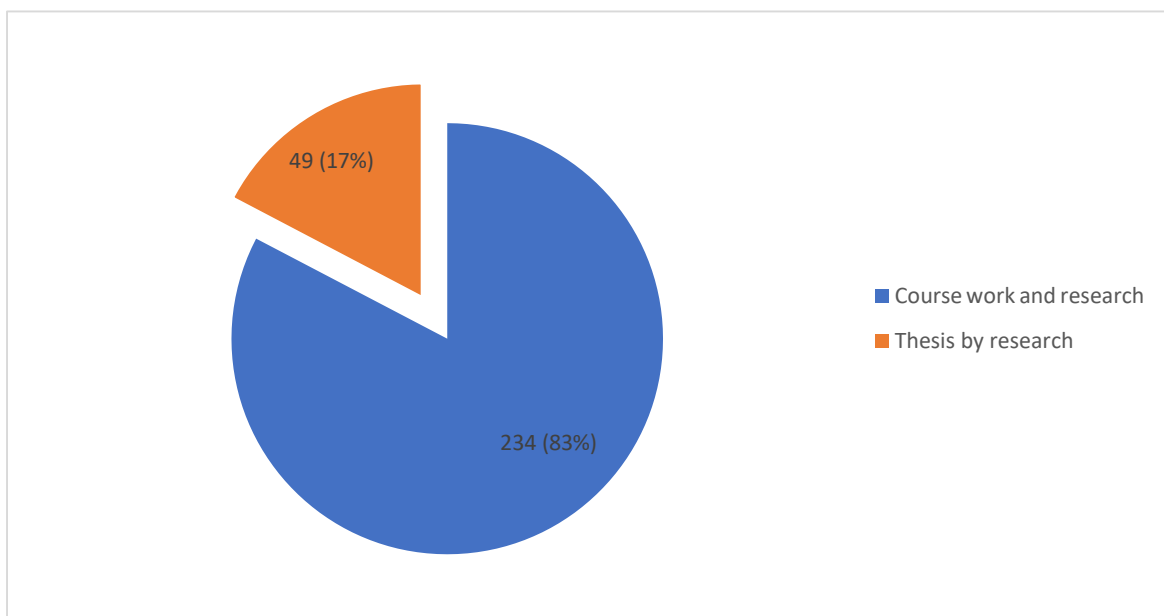


Figure 4.5: Distribution of Doctoral Students by Mode of Study (N=283)

#### 4.3.1.4 Distribution of Doctoral Students by Gender

The gender of the doctoral students was determined, and the results are displayed in Figure 4.5.

It was found, as shown in Figure 4.6 that 146 (52%) of the students were male while the rest, 137 (48%) in number, were females.

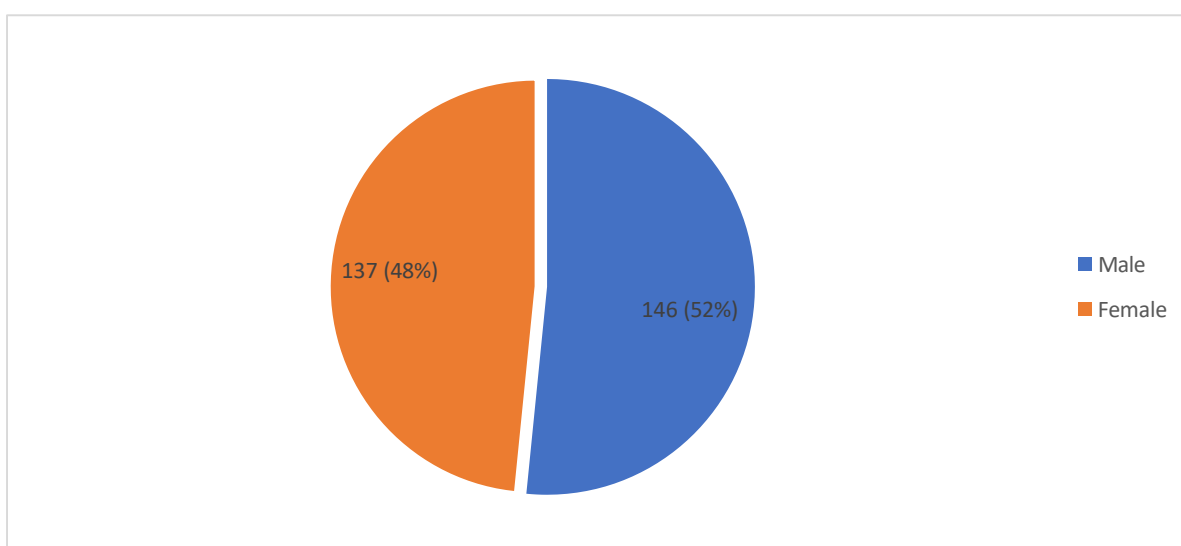


Figure 4.6: Distribution of Doctoral Students by Gender (N=283)

Source: Field Data (2023)

### 4.3.2 LIBRARY STAFF AND UNIVERSITY LIBRARIANS

The main sources of information are the university librarians and other library staff, who comprise a diverse group of professionals with valuable insights. The employees working at libraries play a crucial role in providing services. They acquire first-hand knowledge of user requirements, accessibility challenges, and resource deficiencies through their frequent interactions with researchers. The next section provides more information about the librarians.

#### 4.3.2.1 Profile of the University Librarians

The research considered university librarian demographic variables of gender, experience and highest level of education in order to understand the attributes of library management in the selected institutions as presented in Table 4.1.

Table 4. 1: University Librarians Demographics (N=7)

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>	Female	2	29%
	Male	5	71%
<b>Experience</b>	Less than 5 Years	1	14%
	5-10years	2	29%
	Over 10 years	4	57%
<b>Highest Level of Education</b>	Master's degree	6	86%
	PhD	1	14%

The study established that five of the seven university librarians interviewed were male while the rest were female. The study also noted that one of the interviewed librarians had served in their designated position for less than five years, two for five to ten years while the rest, four in number, had held their designated positions for more than ten years. Regarding the highest level of education of the interviewed university librarians, six had a master's degree while one only had education up to the doctoral level.

### 4.3.2.2 Profile of the Library Staff

The research considered library staff variables of gender, experience and highest level of education in order to understand the attributes of library management in the selected institutions as presented in Table 4.2.

Table 4. 2: Library Staff Demographics (N=26)

Variables	Categories	Frequency	Percentage (%)
Gender	Female	15	58
	Male	11	42
Experience	Less than 5 Years	3	12
	5-10years	4	15
	Over 10 years	19	73
Highest Level of Education	Bachelor's degree	15	58
	Master's degree	10	38
	PhD	1	04

Table 4.2 shows that out of the total of 26 library staff interviewed, 11 (42%) were males, while 15 (58%) were female. On experience, three (12%) library staff had served for less than five years, 4 (15%) for five to ten years and 19 (73%) for more than ten years. Lastly, regarding the highest level of education 15 (58%) of the library staff had a bachelor's degree, 10 (38%) had a Master's degree and one (4%) had a PhD level qualification. The data also implied that the sampled university library staff also possessed the requisite qualifications and experience required in discharging their mandate effectively and efficiently.

## 4.4. RESEARCH SUPPORT SERVICES IN UNIVERSITY LIBRARIES AND POWER DYNAMICS

This section presents data derived from interviews of university librarians and library staff analysed using *ATLAS.ti* version 23. The data was encoded and archived as primary documents within the *ATLAS.ti* software. These primary documents served as the foundation for establishing connections between themes and their corresponding codes. The numerical values

accompanying each code (such Access to resource 65-29) were automatically assigned by the software, signifying the code's density, or the frequency of its associations with other codes. The following relationships were identified from the network illustrations resulting from *ATLAS.ti* include:

***“Is contradiction of”***: This type of link can be used to show that two codes are mutually exclusive or contradictory. For example, you might connect the codes "library user" and "librarian" using a "is contradiction of" link. This link would indicate that a person cannot be both a library user and a librarian at the same time.

***“Is associated with”***: This type of link can be used to show that two codes are related in some way, but not necessarily mutually exclusive. For example, you might connect the codes "librarian" and "research support activities to PhD students" using an "associated with" link. This link would indicate that librarians are often involved in providing research support to PhD students.

***“Is a Cause of”***: This type of link indicates that one node is the cause of another node. For instance, you might connect a code representing "research" to a code representing "information access" using a "cause of" link. This link would be directed, with "research" as the source node and "information access" as the target node.

Relating to Power dynamics between library users, librarians, and the role of research support in user empowerment. This study examines the power dynamics between library users, librarians, and the role of research support in user empowerment. Three types of relations were identified:

***Is associated with power***: This relation denotes that all corresponding parts are affected simultaneously and similarly. For example, librarian power is associated with research support, as librarians provide users with research support services.

***Shows empowerment:*** This relation denotes equality in codes or families, even with a reversal of positions. For example, librarians empower users by providing them with the skills and knowledge they need to conduct research effectively.

***Is a form of disempowerment:*** This relation denotes a condition in which one code or family is more superior to another. For example, librarian power may be diminished by the users' ability to access research support directly from other sources, such as online databases or social media. The three types of relations for the power dynamics will be presented using network views of five themes below:

Codes:

- Research support
- Librarian power
- Librarian empowerment
- User empowerment
- User disempowerment

#### **4.4.1 GENERAL UNDERSTANDING OF RESEARCH SUPPORT SERVICES IN UNIVERSITY LIBRARIES**

From interviews, university librarians and library staff had varied perception of what research support services in libraries entails as revealed from Atlas.ti output. Identified from responses during interviews from both library staff and university librarians were a set of activities undertaken by university libraries aimed at enhancing and supporting researchers and meeting research needs. These activities emerged as sub-themes depicting RSS from universities and forming codes and fed into Atlas.ti for qualitative analysis. Figure 4.7 is a network view of research support services 12 codes from the data and their respective relations.

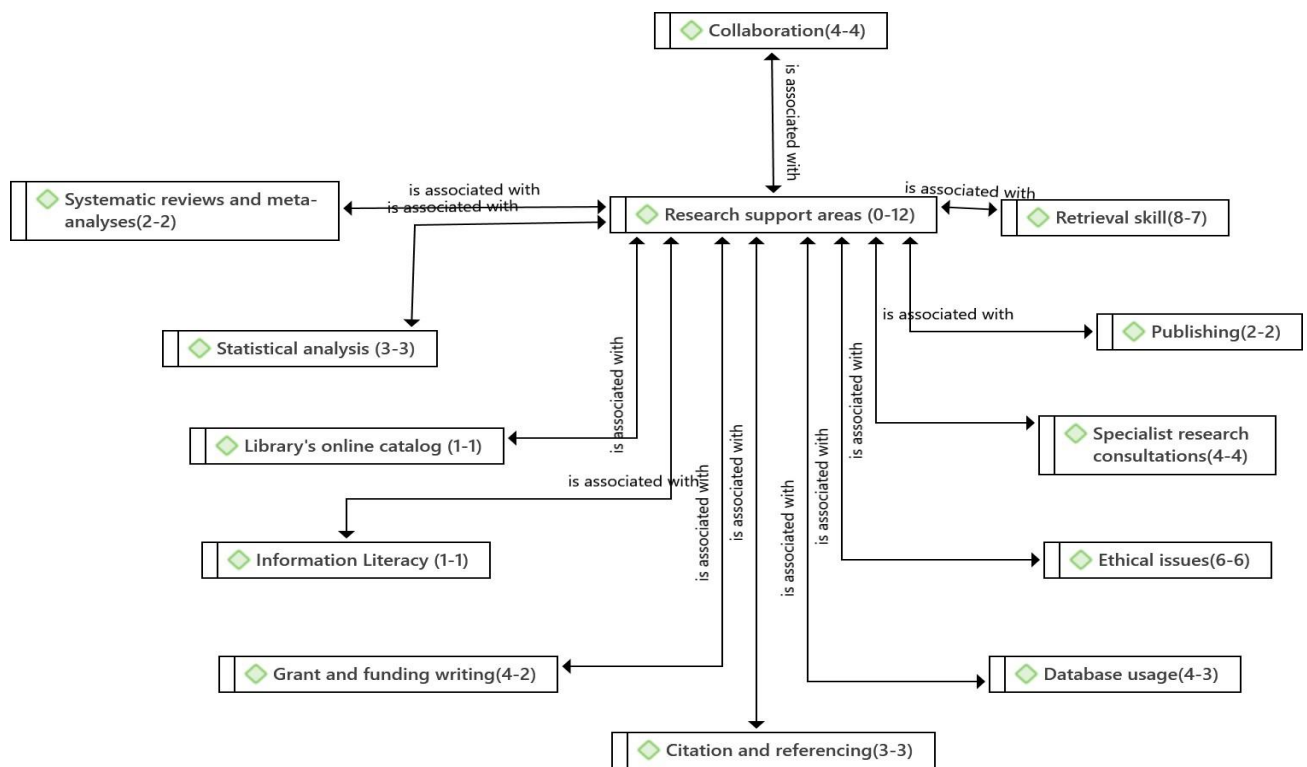


Figure 4.7: General understanding of Research Support Services

Source: Researcher (2024)

The codes with the 'is associated with' transitive type of relation include:

- Access to resources: 65 times in 16 primary documents
- Assistance with resources: 18 times in 17 primary documents
- Citation management: 23 times in 12 primary documents
- Collaboration: 4 times in 4 primary documents
- Contribute to knowledge: 5 times in 4 primary documents
- Electronic databases: 23 times in 15 primary documents
- Ethical issues: 6 times in 6 primary documents
- Grant and funding writing: 4 times in 2 primary documents
- Interlibrary lending 1 time in 1 primary document
- Library's online Catalog: 1 time in 1 primary document

- Publishing: 16 times in 6 primary documents
- Research data management: 1 time in 1 primary document
- Retrieval skill: 8 times in 7 primary documents
- Specialist research consultations: 13 times in 8 primary documents
- Statistical analysis: 3 times in 3 primary documents
- Systematic reviews and meta-analyses: 2 times in 2 primary documents
- User Training: 36 times in 28 primary documents

Some of the verbatim responses from university librarians were:

*Research Support Services encompass a wide range of products and services that facilitate the research lifecycle for our academic communities. We offer individualized research consultations that help scholars in finding relevant literature and information sources [University Librarian 1].*

*To assist users in efficiently navigating and utilizing academic resources, research support services include providing information literacy programs and research skills training. To teach users on how to do literature searches, critically assess material, and use citation management systems, this includes workshops, online tutorials, and individualized consultations [University Librarian 3].*

#### 4.4.2 RSS PROVIDED IN SELECTED PUBLIC UNIVERSITY LIBRARIES

The first objective sought to establish from doctoral students the RSS offered from respective university libraries and results are posted in Table 4.3.

Table 4. 3: Research Support Services Offered in Public University Libraries  
(N=283)

Research support services offered	Frequency	Percent
Library resources and services	270	95
Instructional services	198	70
Scholarly communication services	164	58
Research data services	149	53
Research data management services	120	42
Research impact management services	102	36

Source: Field Data (2023)

Table 4.3 shows that 270 (95%) of doctoral students stated that respective university libraries offered library resources, 198 (70%) instructional services, 149 (53%) offered research data service, 164 (58%) scholarly communication services, 102 (36%) and 120 (42%) research impact management services and research data management respectively. The RSS was discussed in detail in the following section.

#### **4.4.2.1 Provision of Instructional Services**

Based on a five-point Likert scale, doctoral students rated the extent to which respective university libraries offer various instructional services as presented in Figure 4.8. On specific instructional services, most offered services according to doctoral students are advice on plagiarism and copyrights 160 (57%). However, as confirmed by doctoral students from the selected university libraries in Kenya, provision of advice on research proposal 100(35%), sources of funding 93(33%), data analysis using computer software 74 (26%), data collection 97 (34%), citation and referencing 65 (23%), database training 74 (26%), and advice on research topic 97(34%) was inadequate. Further analysis revealed that doctoral students indicated neutral provision on research clinics or workshops 72 (25%), and advice on literature review 70 (25%).

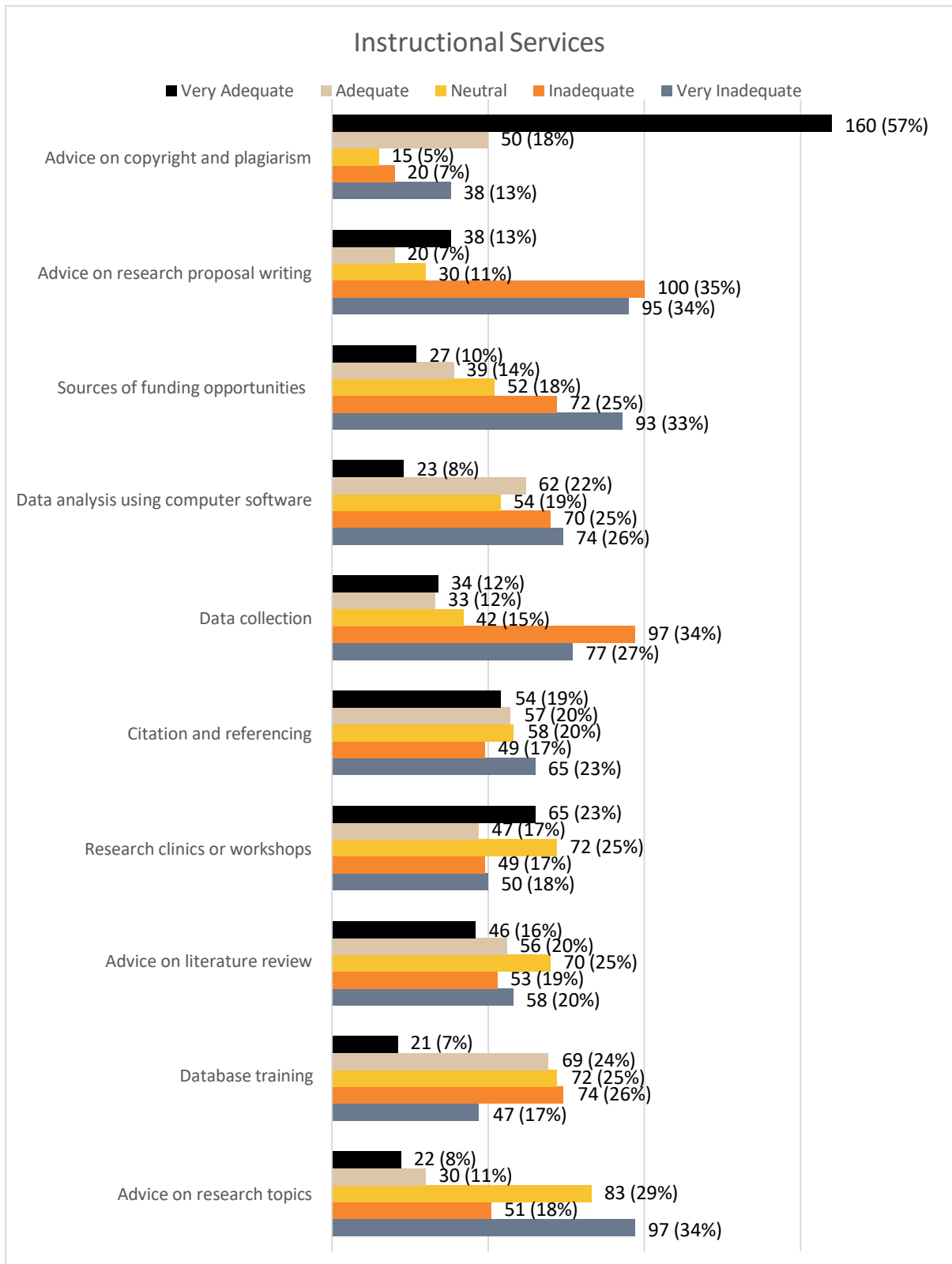


Figure 4.8: Views of Doctoral Students on the extent of Provision of Instructional Services (N=283)

Source: Researcher (2024)

From the results in Figure 4.9, indications are that to a very adequate 17% and to adequate extent 16% doctoral students confirmed provision of instructional services at respective university libraries in Kenya. As much as 19% indicated neutral provision, 23% felt inadequate while 25% were very inadequate with instructional services in respective university libraries.

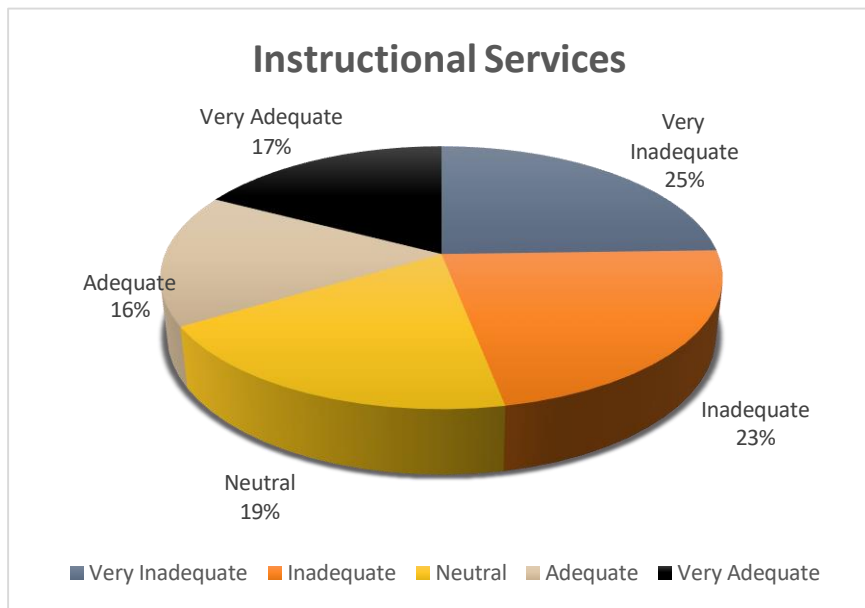


Figure 4.9: Overall Views of Doctoral Students on the extent of Provision of Instructional Services (N=283)

Source: Researcher (2024)

Other instructional services provided by the selected public university libraries as specified by the students were how to assess e-resources, general research project/thesis writing supervision, information literacy sessions and learning resources development.

This study also sought the views of library staff on the kind of instructional services offered or planned at respective libraries and results posted in Figure 4.10.

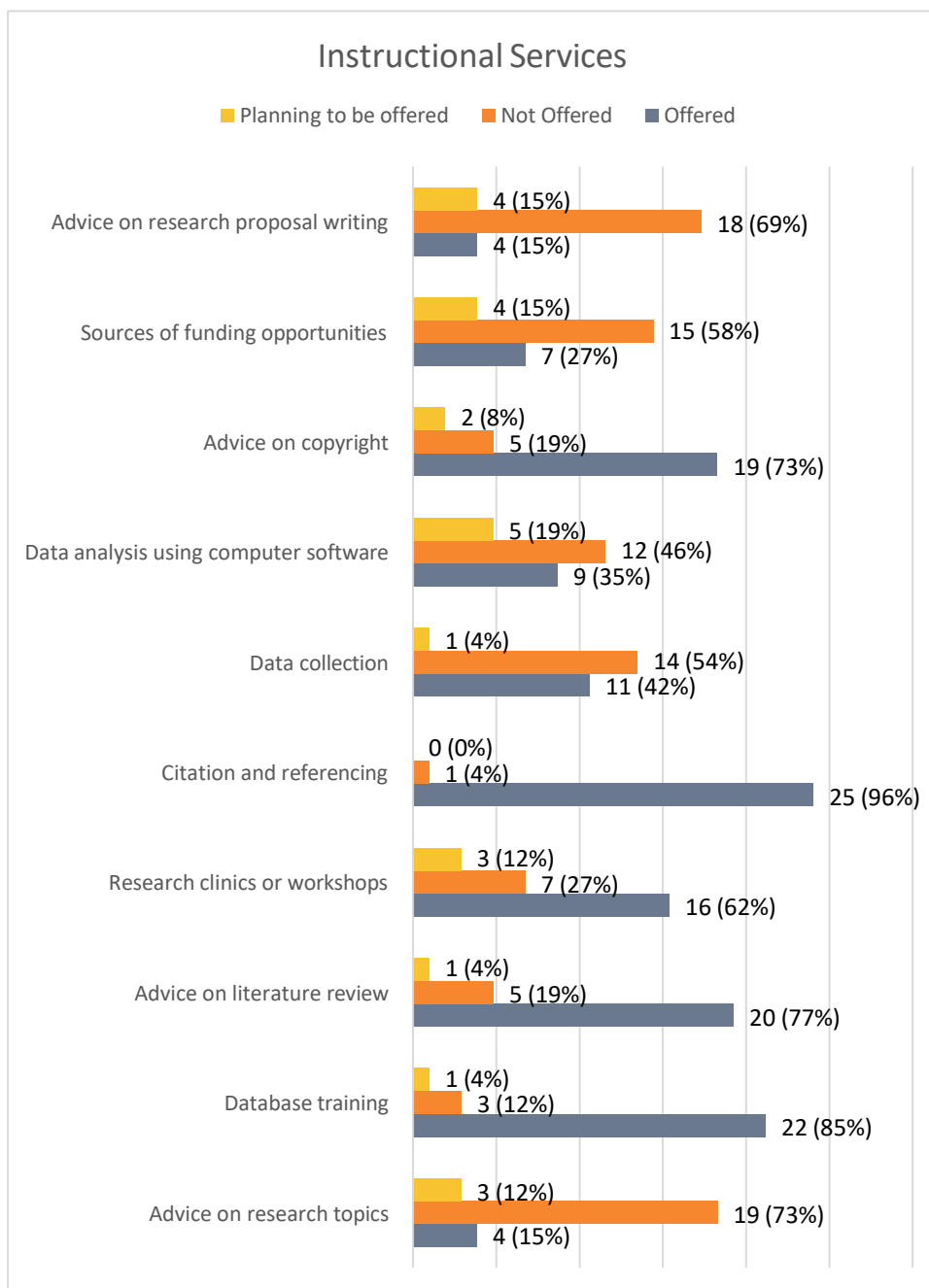


Figure 4.10: Library Staff Responses on Provision of Instructional Services

(N=283)

Source: Researcher (2024)

As noted in Figure 4.10, majority of the library staff, 25 (96%) and 22 (85%) indicated that their respective university libraries offered citation and referencing guidance and database training respectively. Closely following are 20 (77%) of the library staff who asserted that advice on literature review was provided in their university libraries. Again 16 (62%) and 19

(73%) of the library staff agreed that research clinics/workshops and advice on copyright and plagiarism were provided in their university libraries respectively. Further analysis showed that advice or research proposal 18(69%), sources of funding opportunities 15(58%), data analysis using computer software 12(46%), data collection 14(54%) and advice on research topic 19(73%) of the library staff reported that were not provided in their university libraries.

#### **4.4.2.2 Provision of Scholarly Communication Service**

The extent to which university libraries offer scholarly communication services response from doctoral students as posted in Figure 4.11. On specific scholarly communication services, results in Figure 4.10 indicates that doctoral students seek advice on sources of research collaboration, identifications of credible journals and open access publication. According to doctoral students in terms of very adequate and adequate extent advice on sources of research collaboration, identification of credible journals and on open access publication cumulatively score of 124 (44%), 159 (56%) and 166 (58%) respectively. Least offered services according to doctoral students are profiling of researchers and on social media for research dissemination. Cumulatively in terms of scores of inadequate and very inadequate these two scored 130 (46%) and 136 (48%) respectively. Also, notably is publishing advice which neutral 79 (28%).

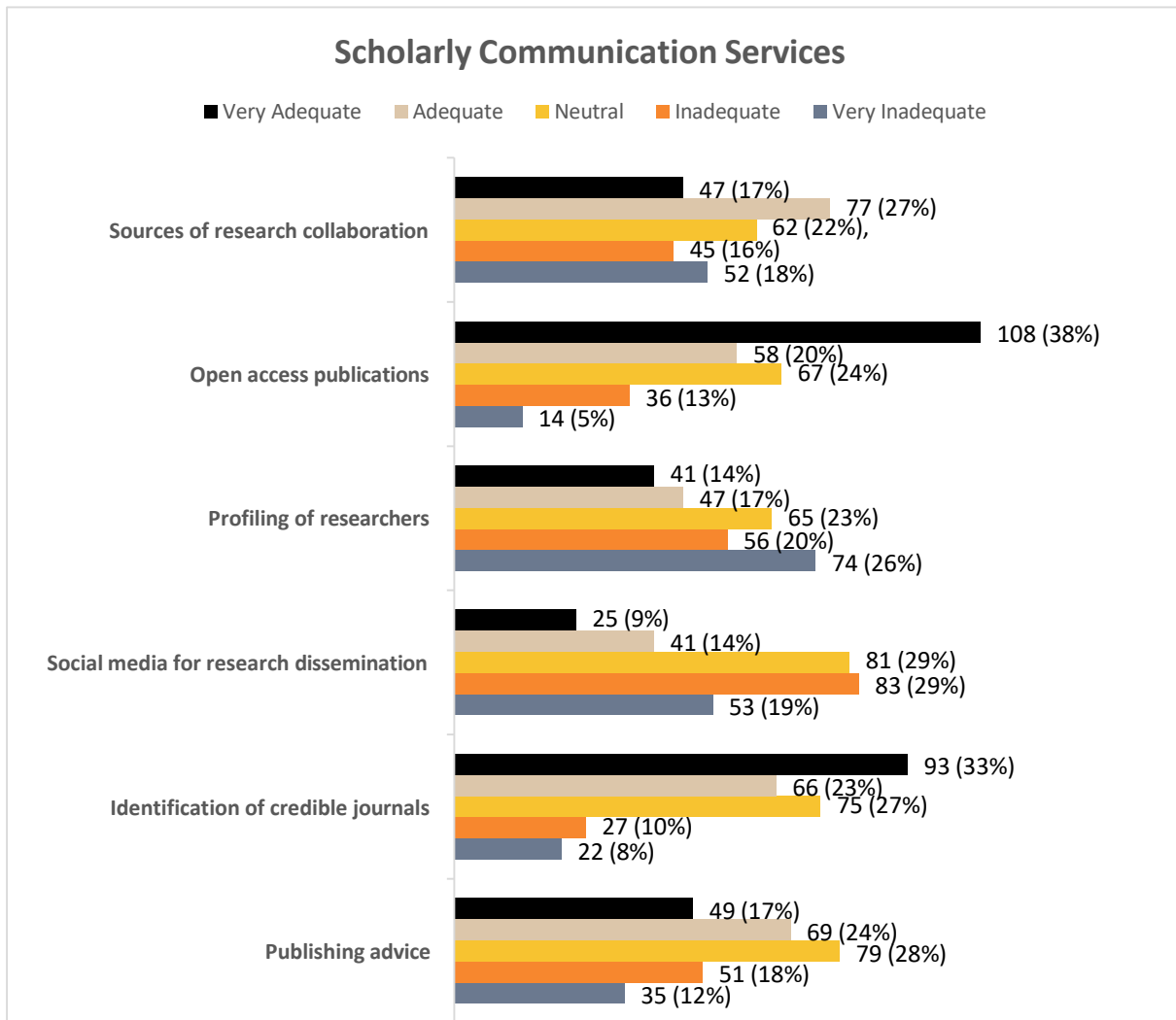


Figure 4.11: Views of Doctoral Students on the extent of Provision of Scholarly Communication Services (N=283)

Source: Researcher (2024)

Figure 4.12 indicates that 42% of doctoral students felt university libraries offered scholarly communication service adequately and 33% noted largely that the provision was inadequate. Additionally, 25% were neutral about the provision of scholarly communication services.

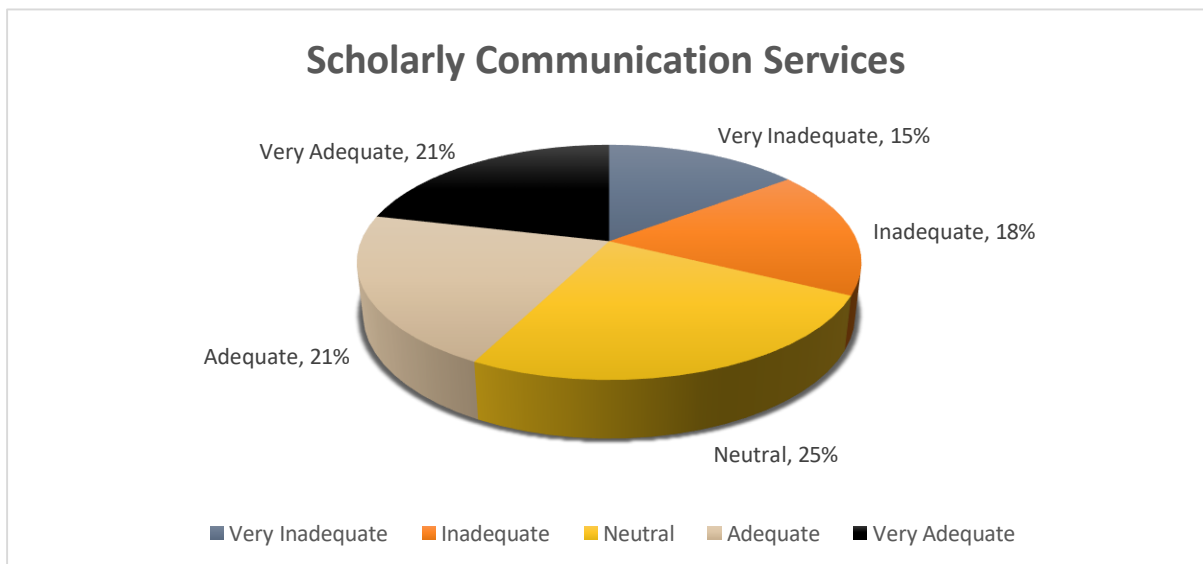


Figure 4.12: Overall Views of Doctoral Students on the extent of Provision of Scholarly Communication Services (N=283)

Source: Researcher (2024)

Figure 4.13 has results from the perspective of the library staff indication whether the respective libraries are offering or planning to offer scholarly communication services the selected university libraries. All the 26 (100%) library staff indicated that respective libraries offer advice on identification of credible journals and open access publications. The majority of these staff, 20 (77%) and 19 (73%) in number, noted that publishing advice and sources of research collaboration were services provided in their university libraries respectively. The data also show that the majority of the library staff, 18 (69%) and 16 (62%) asserted that social media for research dissemination and profiling of researchers were part of the scholarly communication services offered in their university libraries respectively.

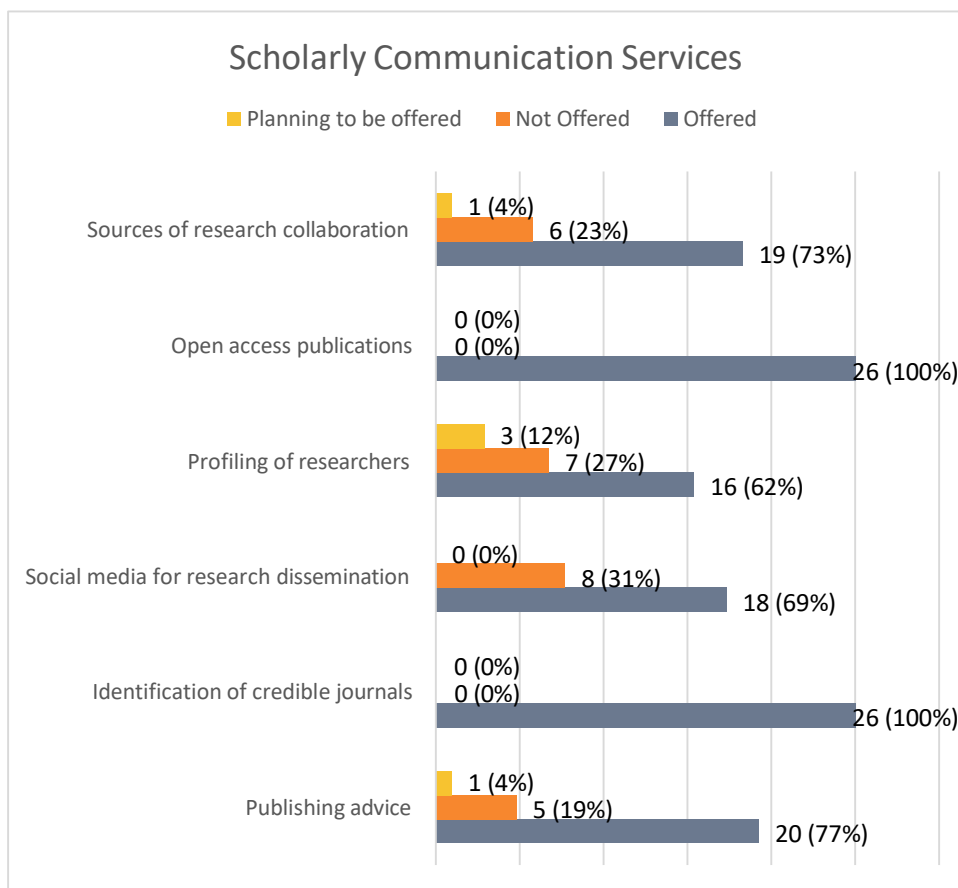


Figure 4.13: Library Staff Responses on Provision of Scholarly Communication Services (N=26)

Source: Researcher (2024)

#### 4.4.2.3 Provision of Research Data Services

The results presented in Figure 4.14 revealed the extent to which various research data services were offered in the selected public university libraries based on the views of the doctoral students. According to Figure 18, guidance on services on developing tools to assist researchers manage data, technical aspects of digital curation, guidance on the handling and management of unpublished research data, and support for data deposit in institutional repositories were not provided at all in these libraries as per the cumulative values of 227 (80%), 195 (69%), 212 (72%), and 228 (77%) respectively.

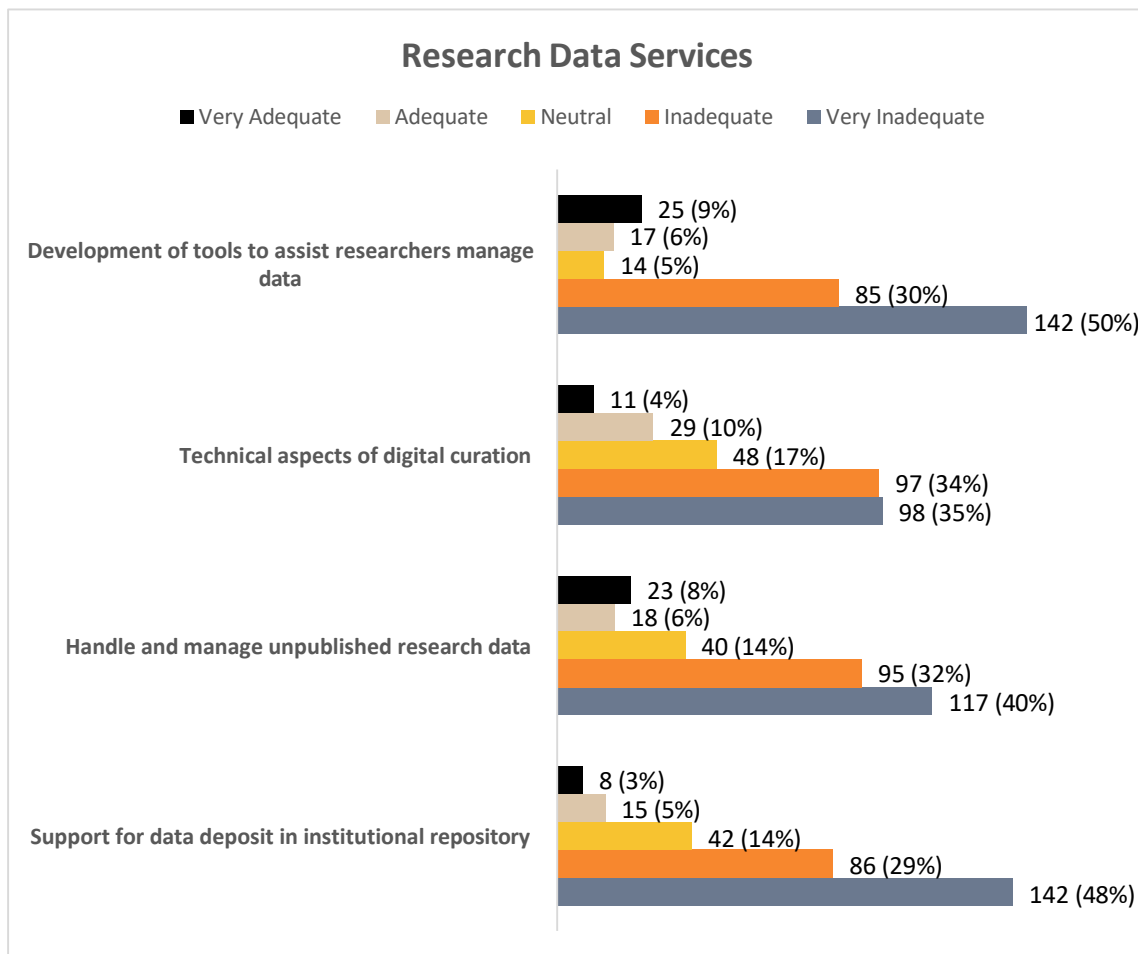


Figure 4.14: Views of Doctoral Students on the extent of Provision of Research Data services (N=283)

Source: Researcher (2024)

Figure 4.14 indicates that 75% of doctoral students indicated that the RDS provided with their universities are inadequate. Comparatively, 13% and 12% of doctoral students noted that RDS are offered adequately and neutral respectively in selected public university libraries. These results are an indication that majority of the libraries in public universities are not adequately offering RDS.

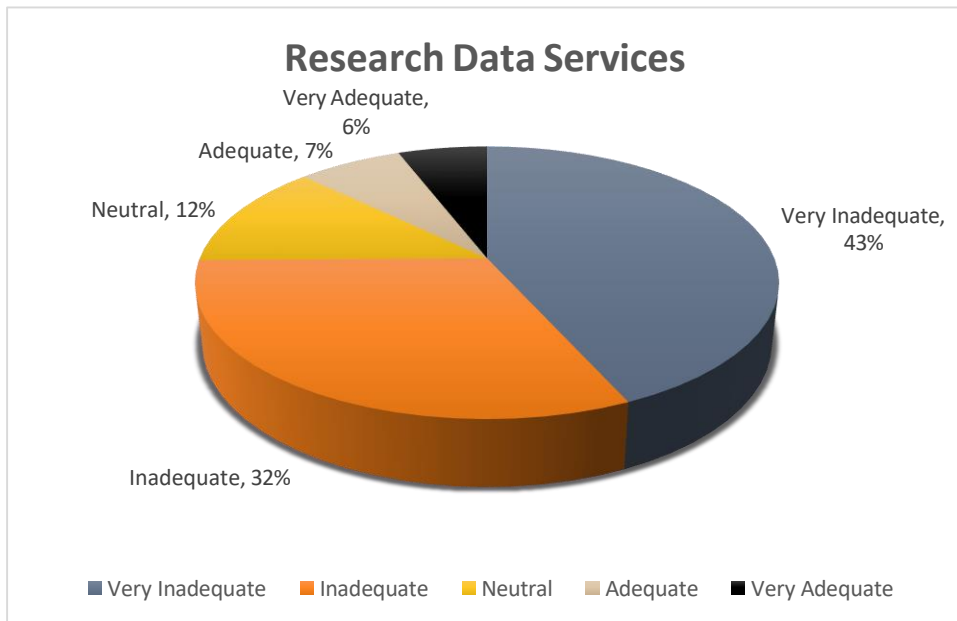


Figure 4.15: Overall Views of Doctoral Students on the extent of Provision of Research Data services (N=283)

Source: Researcher (2024)

According to Figure 4.16, the data showed that the majority of the library staff, indicated that technical aspects of digital curation 25 (96%), guidance on handling and management of unpublished research data and relevant external data sets 22 (85%), developing tools to assist researchers manage data 21 (81%), and support for data deposit in institutional repositories 20 (77%) were not offered in their respective university libraries.

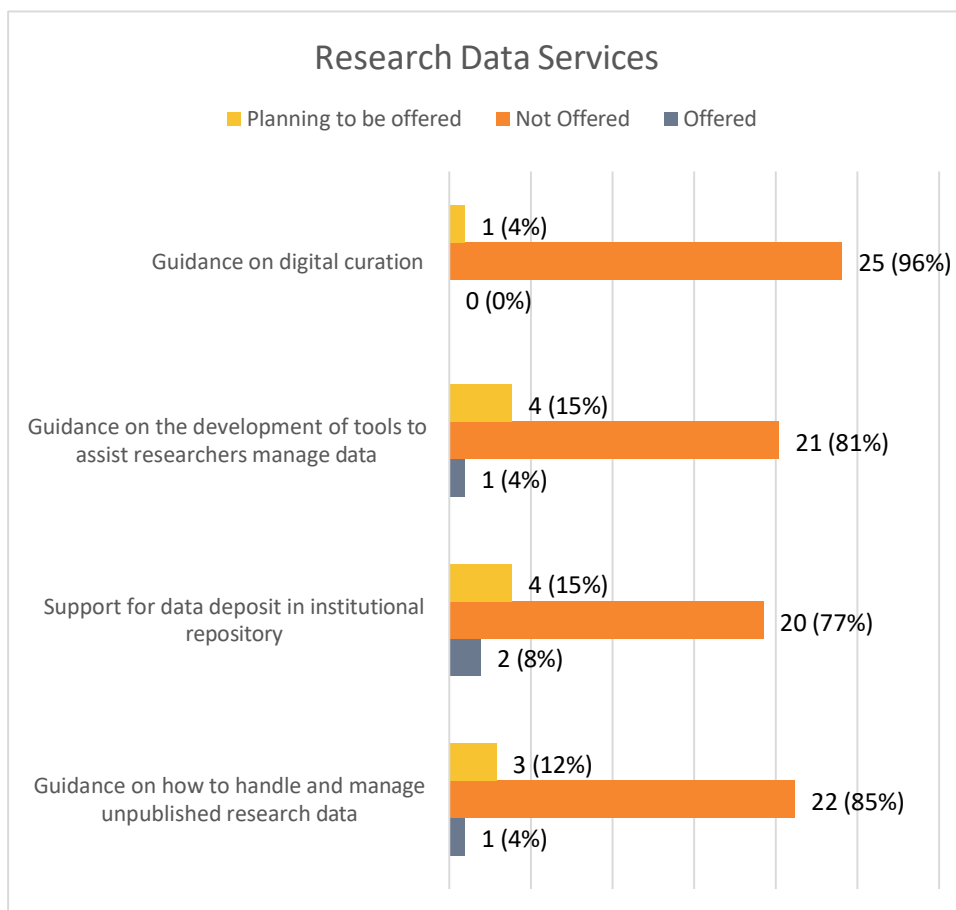


Figure 4.16: Library Staff Responses on Provision of Research Data Services  
(N=26)

Source: Researcher (2024)

#### 4.4.2.4 Provision of Research Data Management Services

The study also explored the provision of research data management services in the public university libraries considered in this study by seeking the views of doctoral students. The responses of the doctoral students are presented in Figure 4.17. The study found that, grants application 127 (45%), guidance on developing data management plans 141 (49%), provision of statistical and other data analysis support 126 (45%), guidance on how to use appropriate metadata 138 (49%), and guidance on writing data management plans 175 (61%) were not offered at all in the selected university libraries.

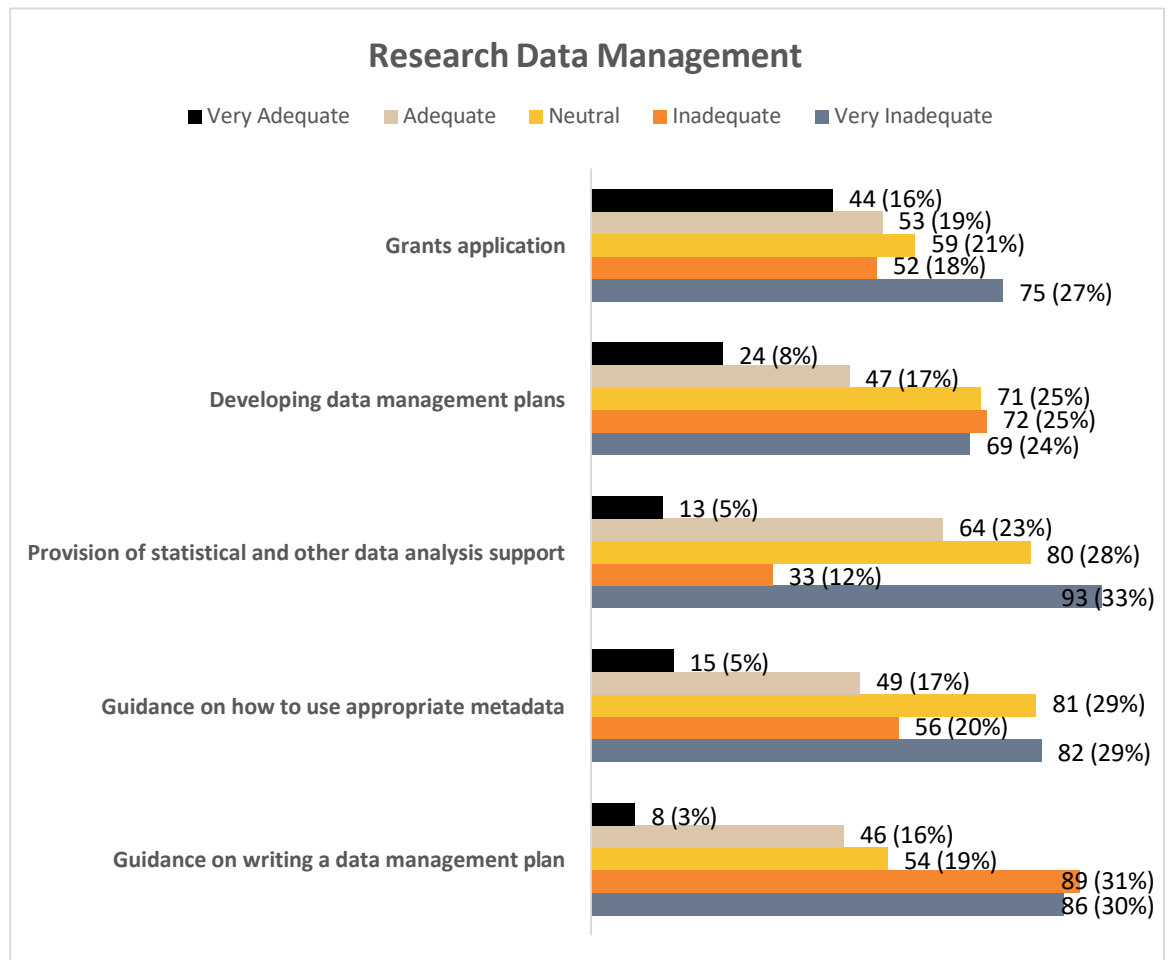


Figure 4.17: Views of Doctoral Students on the extent of Provision of Research Data Management (N=283)

Source: Researcher (2024)

The pie chart (Figure 4.18) shows that research data management services offered by selected university libraries, 52% of doctoral students felt provision was inadequate, 27% adequate, and 21% were neutral.

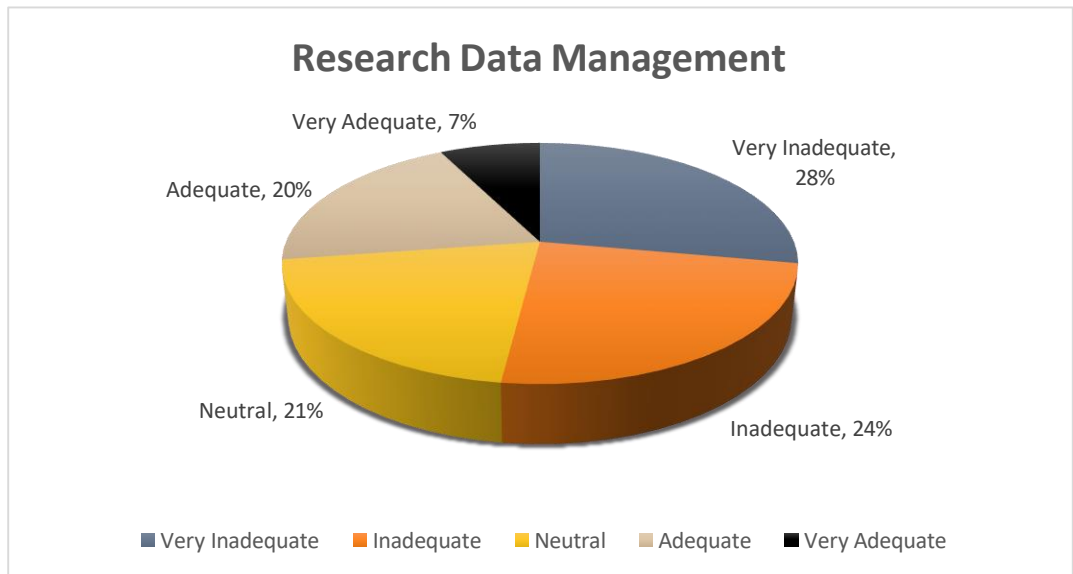


Figure 4.18: Overall Views of Doctoral Students on the extent of Provision of Research Data Management (N=283)

Source: Researcher (2024)

The responses of the library staff regarding the provision of research data management in selected public university libraries are outlined in Figure 4.19. According to the librarians grants application 20 (88%), developing data management plans 22 (73%), provision of statistical and other data analysis support 20 (77%), guidance on how to use appropriate metadata 22 (81%), and guidance on writing data management plans 22 (77%) were not offered at all in the selected university libraries.

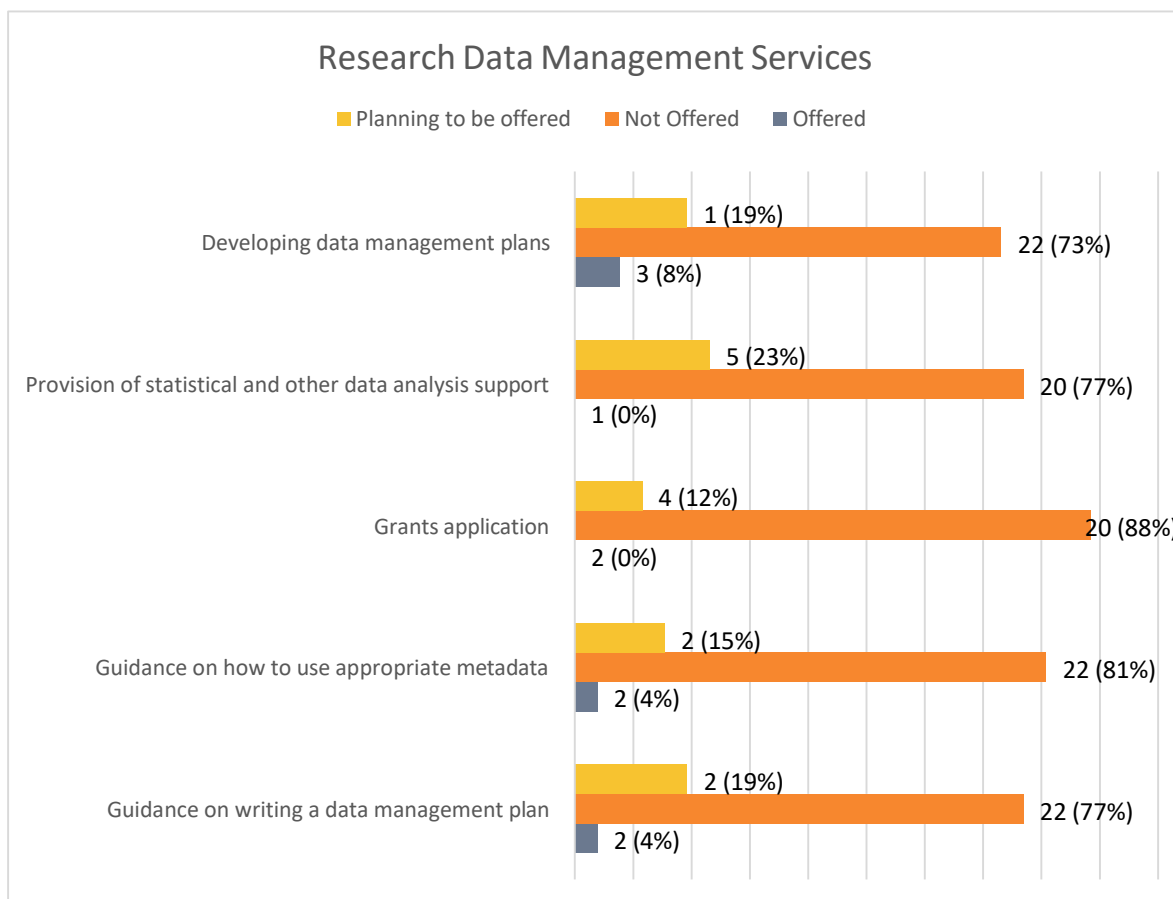


Figure 4.19: Provision of Research Data Management (N=26)

Source: Researcher (2024)

#### 4.4.2.5 Provision of Library Resources and Services

The extent of provision of library resources and services by the university libraries considered in this study based on the perspective of the doctoral students was further determined and the data is presented in Figure 4.20. In the selected public university libraries, provision of updates on the latest information accessible for varied research, provision of e-databases in different areas of study, provision of print collection in different areas of study resources, and research commons (study areas) was provided adequately as affirmed by the cumulative values of 167 (59%), 186 (65%), 158 (56%), and 156 (55%) of doctoral students respectively.

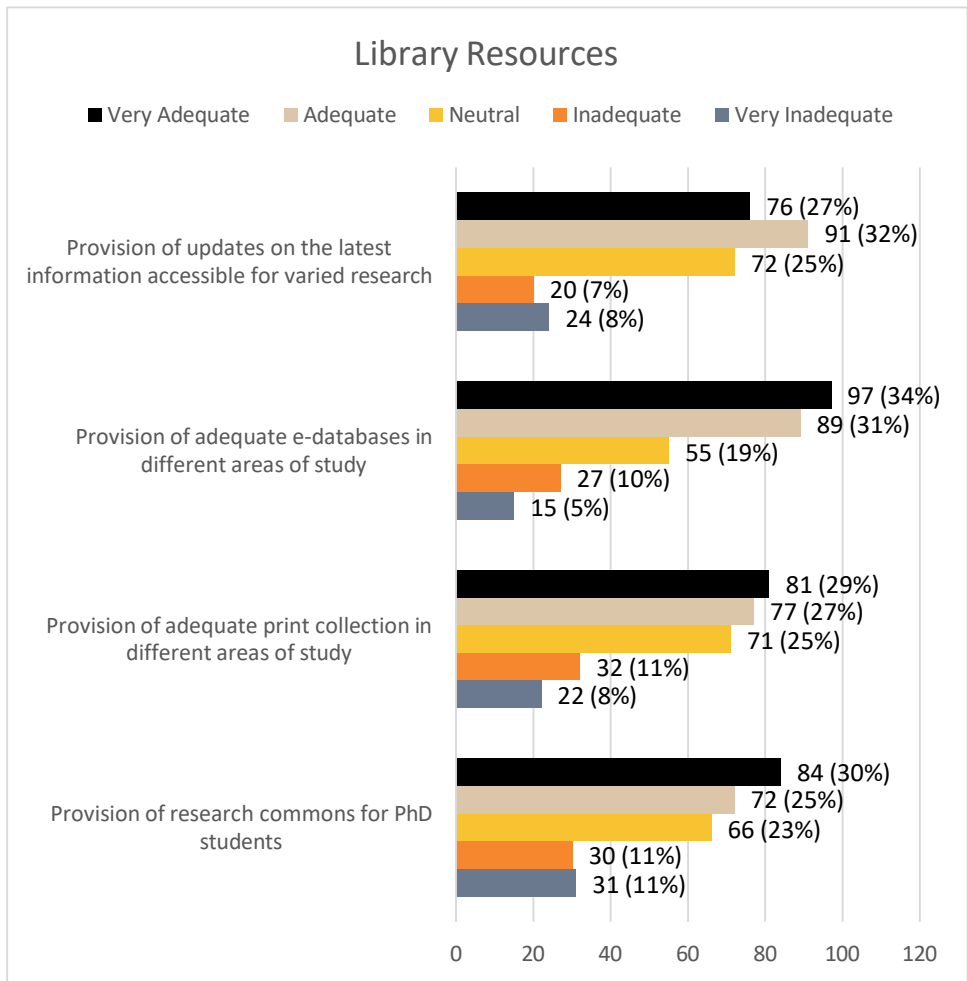


Figure 4. 20: Doctoral Students’ Views on Library Resources Offered in University Libraries (N=283)

Source: Researcher (2024)

According to the pie chart (Figure 4.21), show the overall value of 59% adequate, 23% neutral, and 18% inadequate on the provision of library resources and services in the university libraries considered in this study.

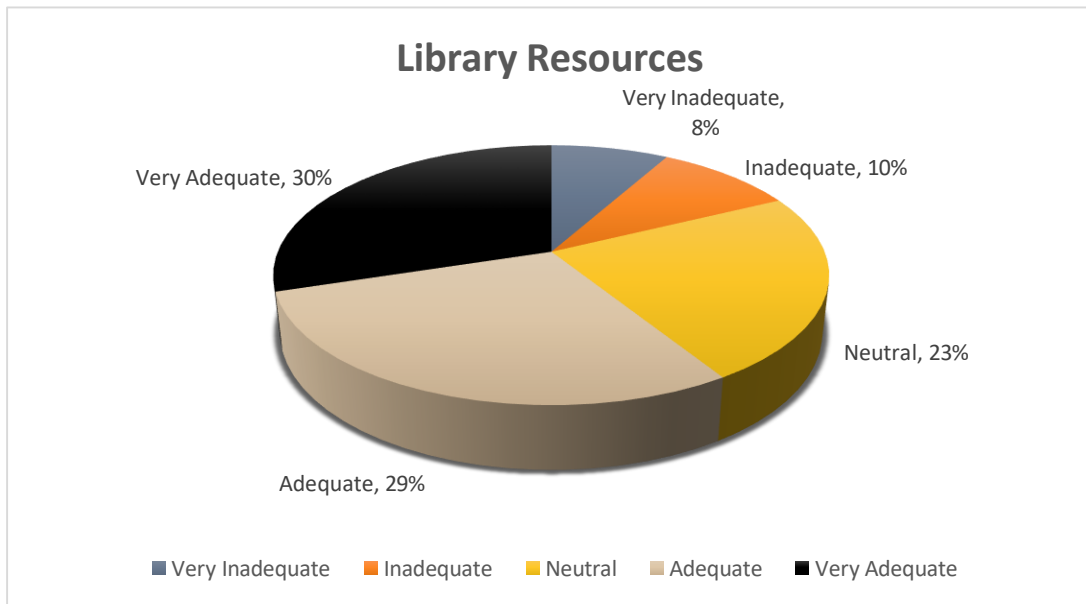


Figure 4.21: Overall Views of Doctoral Students on the extent of Provision of Library Resources and Services (N=283)

Source: Researcher (2024)

The results presented in Figure 4.22 showed how the library staff responded to the questions on the provision of library resources and services in their respective university libraries. The data demonstrate that 24 (92%) provision of updates on the latest information accessible for varied research, 24 (92%) provision of e-databases in different areas of study, 25 (96%) provision of print collection in different areas of study resources, and 24 (92%) research commons (study areas) were provided in the selected university libraries.

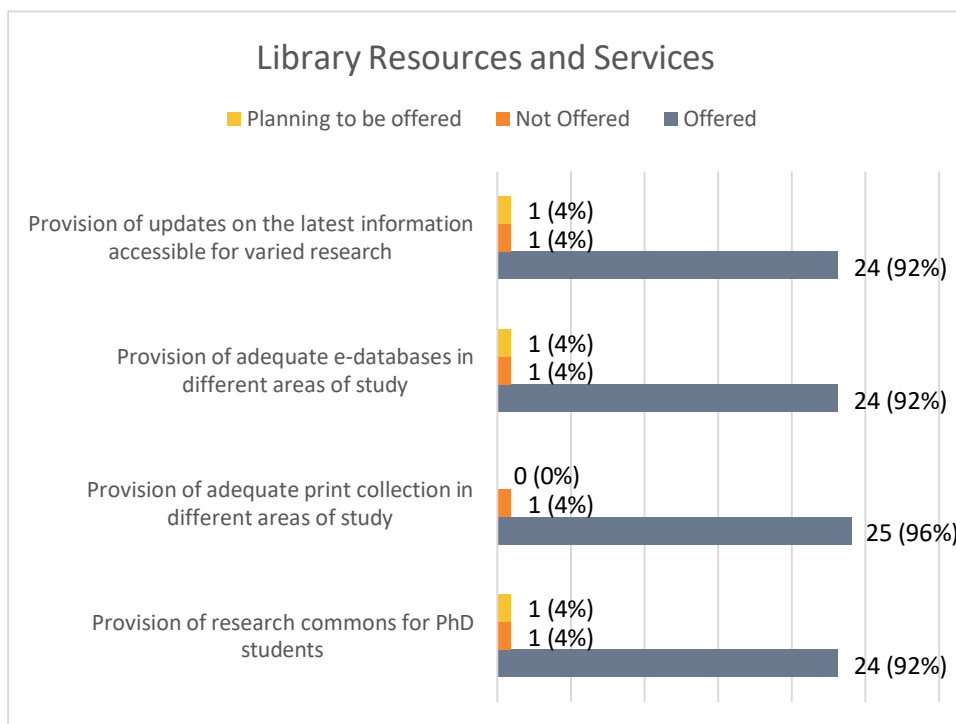


Figure 4.22: Provision of library resources and services (N=26)

Source: Researcher (2024)

#### 4.4.2.6 Provision of Research Impact Services

The study also investigated the extent to which research impact services were offered in the selected university libraries based on the responses of the doctoral students. Their responses are outlined in Figure 4.23 H-index calculations, calculations of research impacts, altimetric training and bibliometric training were not provided in the libraries under study cumulative values of 178 (63%), 147 (52%), 192 (68%), and 160 (57%) respectively. Further analysis showed citation reports 73 (26%) was neutral.

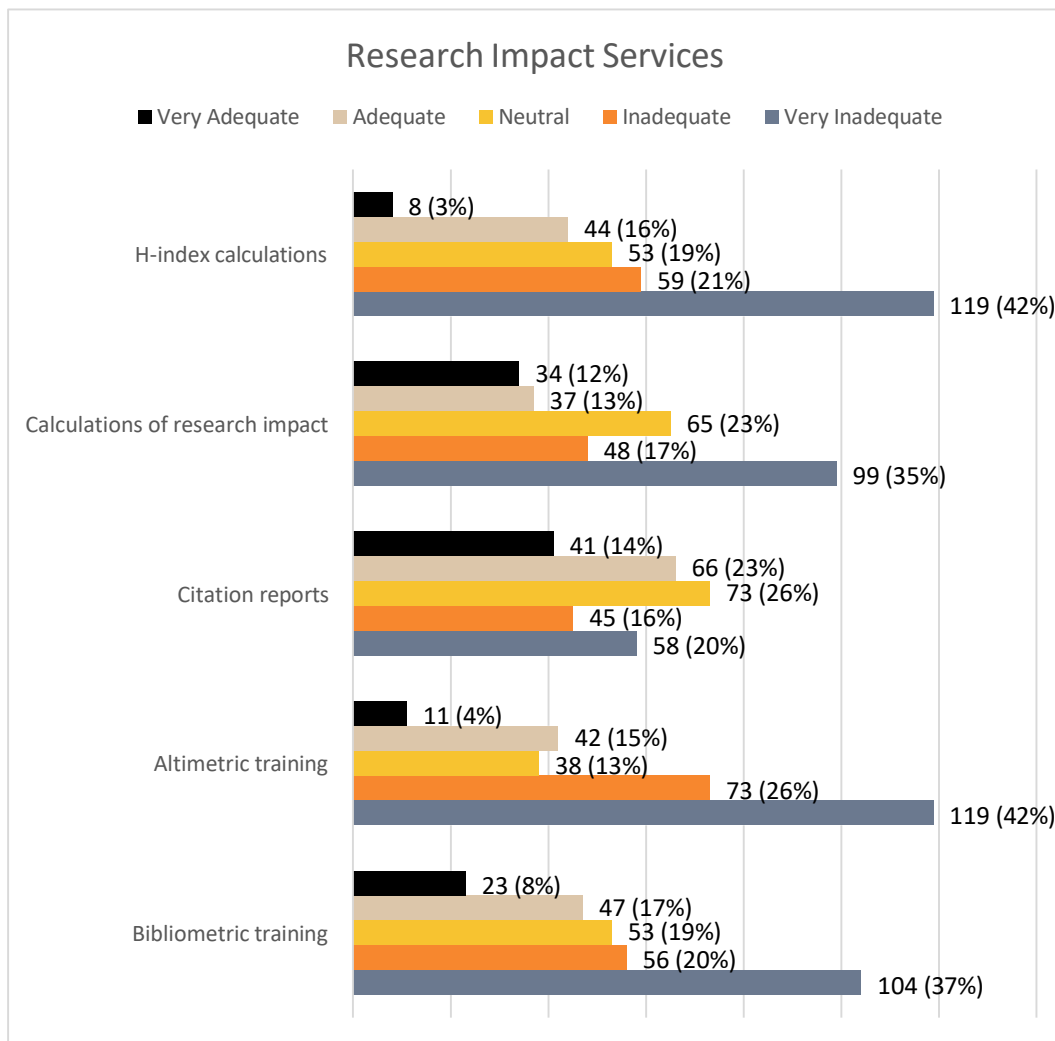


Figure 4.23: Views of Doctoral Students on the extent of Provision of Research Impact Services (N=26)

Source: Researcher (2024)

According to this construct, 55% of doctoral students agree that RIS provision in the selected public universities was inadequate. Only 25% indicated the provision of RIS was adequate and 20% were neutral as shown by the pie chart on Figure 4.23.

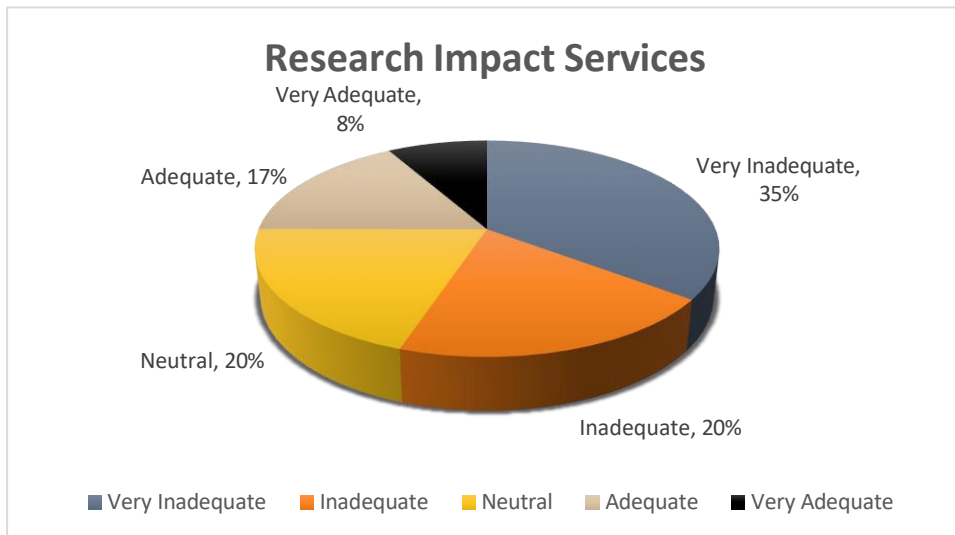


Figure 4.24: Overall Views of Doctoral Students on the extent of Provision of Research Impact Services (N=283)

Source: Researcher (2024)

The study further sought the views of the library staff on the provision of research impact services in their respective university libraries. A list of research impact services was provided to the library staff, and they were asked to select what their libraries offered, not offered or planning to offer. The data as outlined in Figure 4.25, indicated that 15 (85%) of the library staff affirmed that their respective universities offered citation reports. The study also found that, majority of the library staff 25 (85%) indicated that the selected university libraries does not provide altimetric training. Further analysis revealed that H-index calculations, calculation of research impacts, bibliometric training, are not offered in the selected university libraries as shown by 17 (65%), 15 (58%), and 14 (54%) respectively.

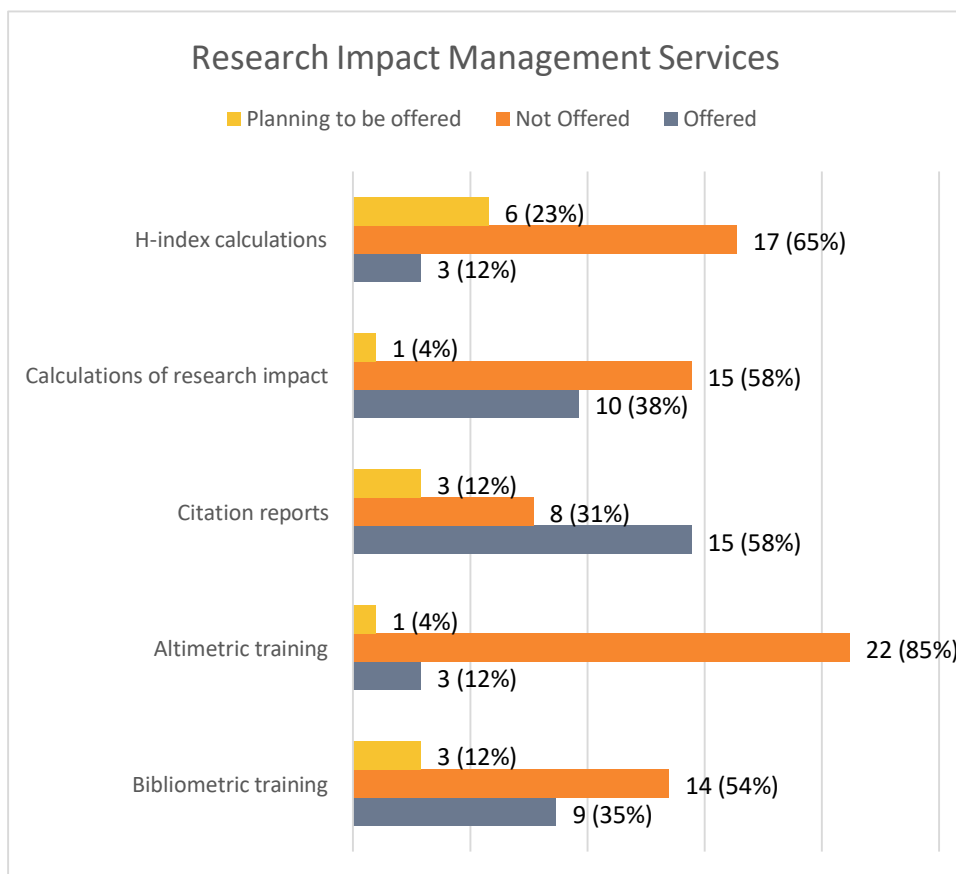


Figure 4.25: Library Staff Responses on Provision of Research Impact Services

(N=26)

Source: Researcher (2024)

The university librarians were interviewed to get their views on which research support services were provided in their libraries. Some of the verbatim responses were:

*Our library offers interlibrary loan services since it is crucial to have access to a wider variety of materials. Researchers' options for research are increased by having access to additional national and international libraries if a necessary resource is not part of our collection [University Librarian 3].*

*Provision of information resources, services and facilities that support the research cycle e.g., Access to print and electronic resources, capacity building on various research activities, research common rooms [University Librarian 4].*

*The library provides an extensive selection of books, academic journals, databases, and electronic resources relevant to various research subjects. Researchers have access to the most current and thorough knowledge available in their fields thanks to this wide collection [University Librarian 6].*

*The library routinely holds workshops and training sessions to give researchers the knowledge and skills they need. Techniques for conducting literature reviews, tools for managing citations, writing resources for academic purposes, and copyright compliance are all discussed [University Librarian 7].*

From the verbatim responses, the themes that emerged in relations to research support services were: information materials (print materials, journals and database); interlibrary loan services; instructional services (one-on-one consultations, workshops and trainings); copyright and plagiarism; citation and referencing; research commons; research activities (open access, research collaboration, social media dissemination, publishing advice).

#### **4.4.3 DOCTORAL STUDENTS' SATISFACTION WITH RESEARCH SUPPORT SERVICES PROVIDED IN SELECTED PUBLIC UNIVERSITY LIBRARIES**

The study also investigated how satisfied the doctoral students were with the various research support services provided in meeting their research information needs as presented in Figure 4.26. The students who were strongly dissatisfied with these services were 22 (8%) in number and 50 (18%) of doctoral students were dissatisfied with the very services provided in the selected public universities. On the other hand, 91 (32%) of the students were neutrally satisfied. The study data further revealed that 105 (37%) and 15 (5%) of the doctoral students were satisfied and strongly satisfied with the various research support services provided in meeting their research information needs respectively.

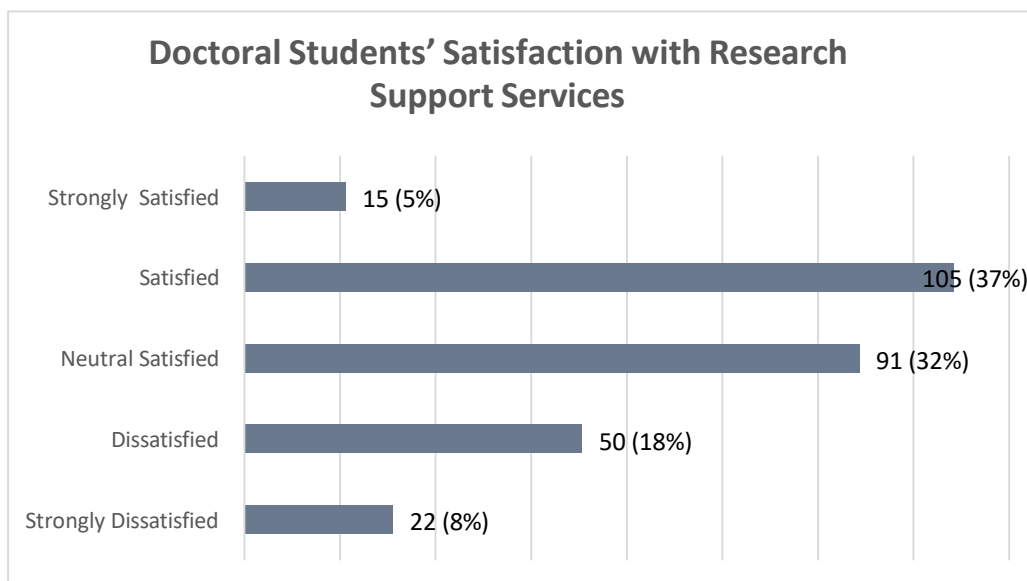


Figure 4.26: Doctoral Students' Satisfaction with Research Support Services  
(N=283)

Source: Researcher (2024)

#### **4.5 EXTENT OF UTILIZATION OF RESEARCH SUPPORT SERVICES BY DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES**

The second objective sought to answer the question on the extent to which the research support services were utilized by doctoral students in selected public university libraries in Kenya. The views of the doctoral students, university librarians and library staff were also sought in this case for the purposes of triangulation and to ensure a comprehensive understanding of the research support services' utilization and to strengthen the credibility of the study's outcomes. The study determined the actual extent of utilization of different research support services by doctoral students in the selected public university libraries by considering the views of doctoral students themselves. The subsequent sections showed how the sampled doctoral students rated the extent they utilized different research support services on a five-point Likert scale. Research support services commonly utilized by doctoral students are discussed further in the following section.

#### **4.5.1 UTILIZATION OF INSTRUCTIONAL SERVICES BY DOCTORAL STUDENTS**

The extent doctoral students utilized different instructional services provided in the selected public university libraries was revealed by the data presented in Figure 4.27. The students utilized advice on copyright and plagiarism, and citation and referencing provided by their university libraries to a great extent as per the given value of 192 (68%) and 167 (59%). The students also utilized advice on literature review 85 (30%), research clinics or workshops 95 (34%) and database training 120 (42%) provided by their university libraries to a moderate extent. Further analysis showed that advice on research proposal 115 (40%), data collection advice 126 (44%), advice on research topic 145 (51%), guidance on data analysis using computer software's 146 (52%), and advice on sources of funding 175 (62%) were utilized to a small extent by the doctoral students from the selected public university libraries.

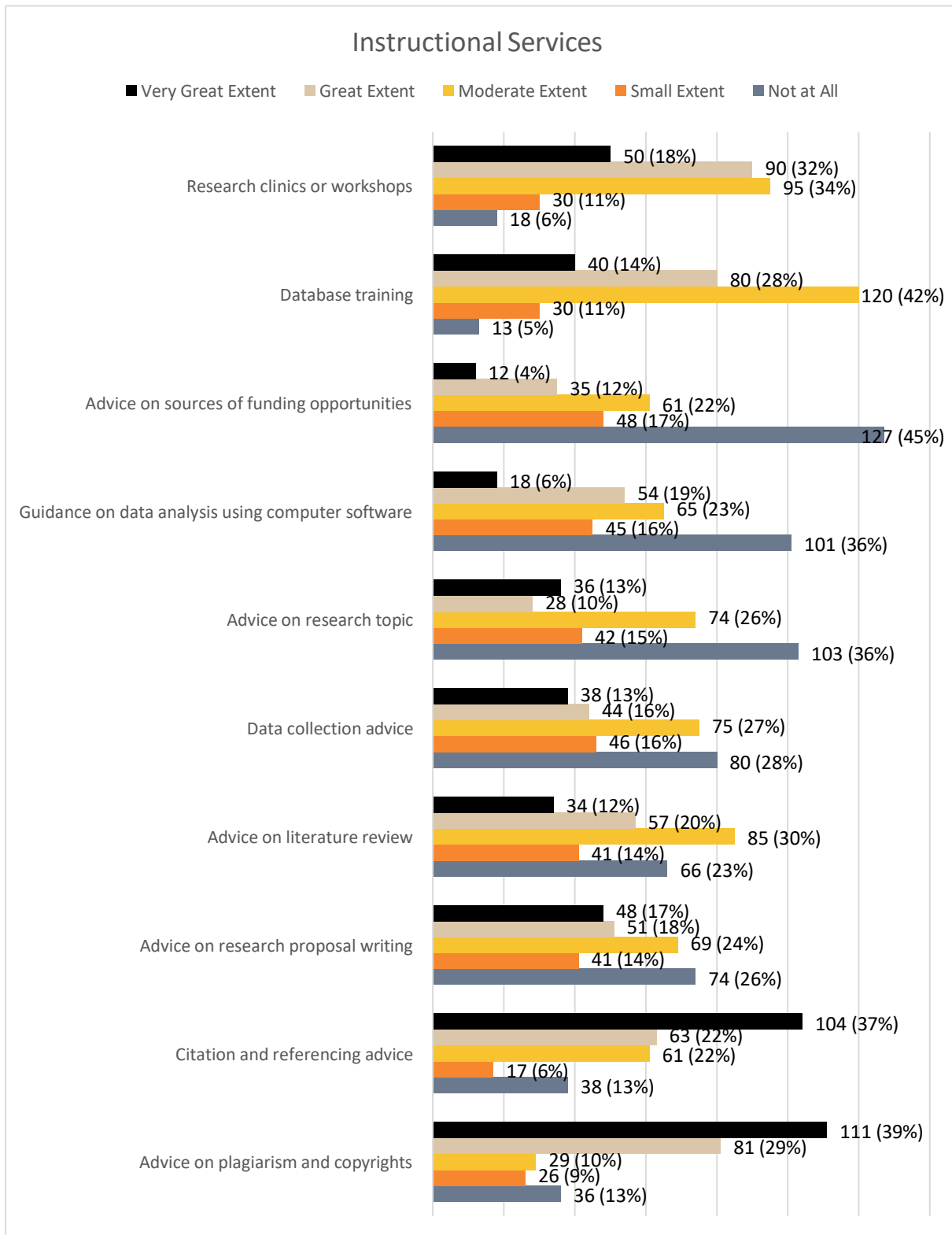


Figure 4.27: Views of Doctoral Students on the Extent of Utilization of Instructional Services (N=283)

Source: Researcher (2024)

The pie chart (Figure 4.28) shows the overall distribution of all the instructional service items. Majority of the sampled doctoral students (38%) admitted that they utilize instructional services provided by their university libraries to a great extent, while 26% and 36% of doctoral students indicated moderate and small extent utilization.

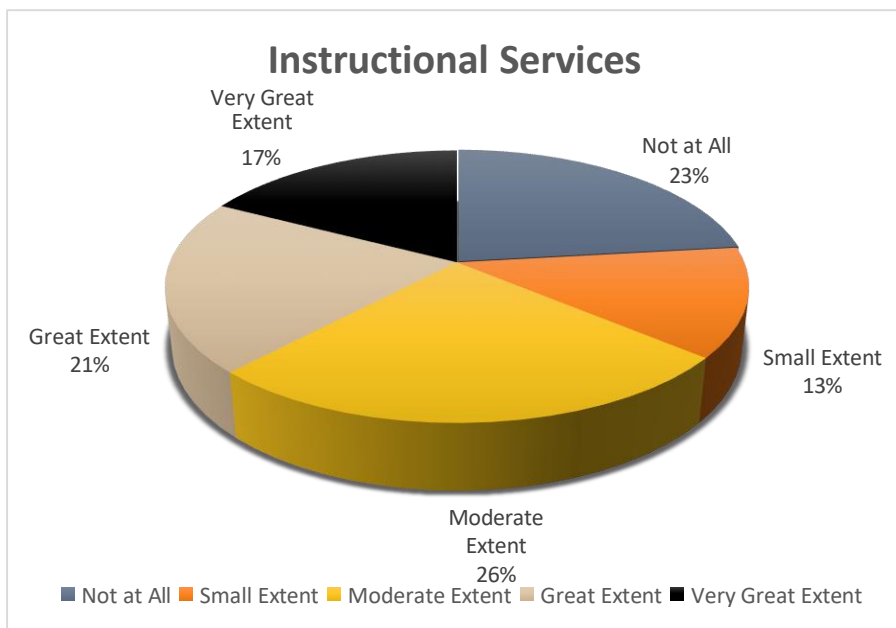


Figure 4.28: Overall Views of Doctoral Students on the Extent of Utilization of Instructional Services (N=283)

Source: Researcher (2024)

#### 4.5.2 UTILIZATION OF SCHOLARLY COMMUNICATION SERVICES

The utilization of scholarly communication services provided in the selected public university libraries by doctoral students is depicted by the study data outlined in Figure 4.29. Scholarly communication was categorised into: advice on identification of credible journals publishing, advice on open access publishing, profiling of researcher, social media for research dissemination, sources of research collaboration, and publishing advice. The study established

that, the doctoral students utilized advice on identification of credible journals 156 (56%) and advice on open access publications 135 (47%) to a great extent. Moreover, advice on profiling 136 (48%), advice on social media for research dissemination 139 (49%), sources of research collaboration 155 (55%), and publishing advice 166 (58%) were utilized to a small extent.

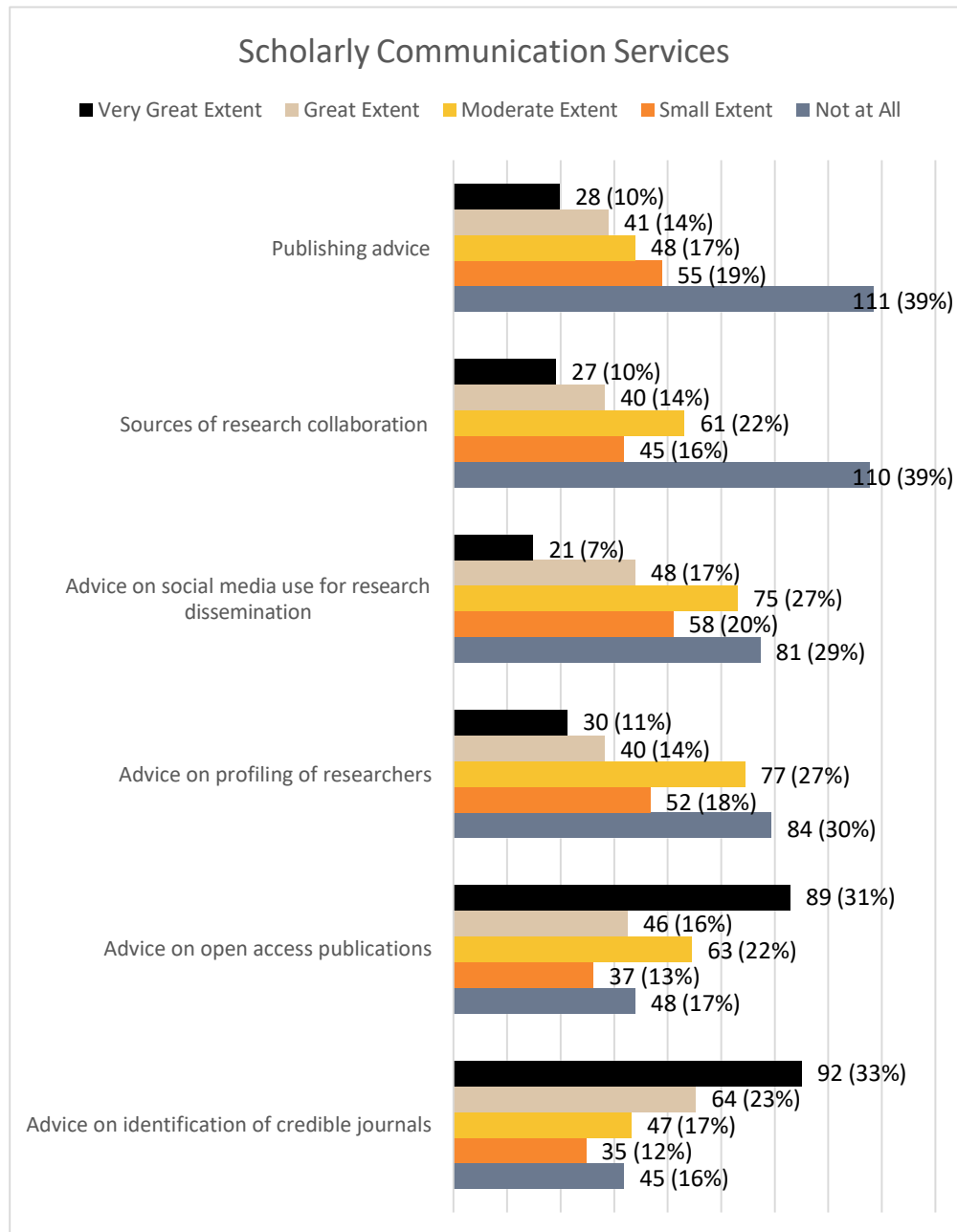


Figure 4. 29: Views of Doctoral Students on the Extent of Utilization of Scholarly communication Services (N=283)

Source: Researcher (2024)

The Figure 4.30 shows overall distribution of scholarly communication services offered by the selected public universities. Majority of the sampled doctoral students (45%) said they did not use or utilize to a small extent the offered scholarly communication services. This implies that

a sizable portion of doctoral students are not making any use of these services. While 33% utilize scholarly communication service to a great extent. Conversely, 22% have indicate moderate extent of utilization of scholarly communication in the selected university libraries.

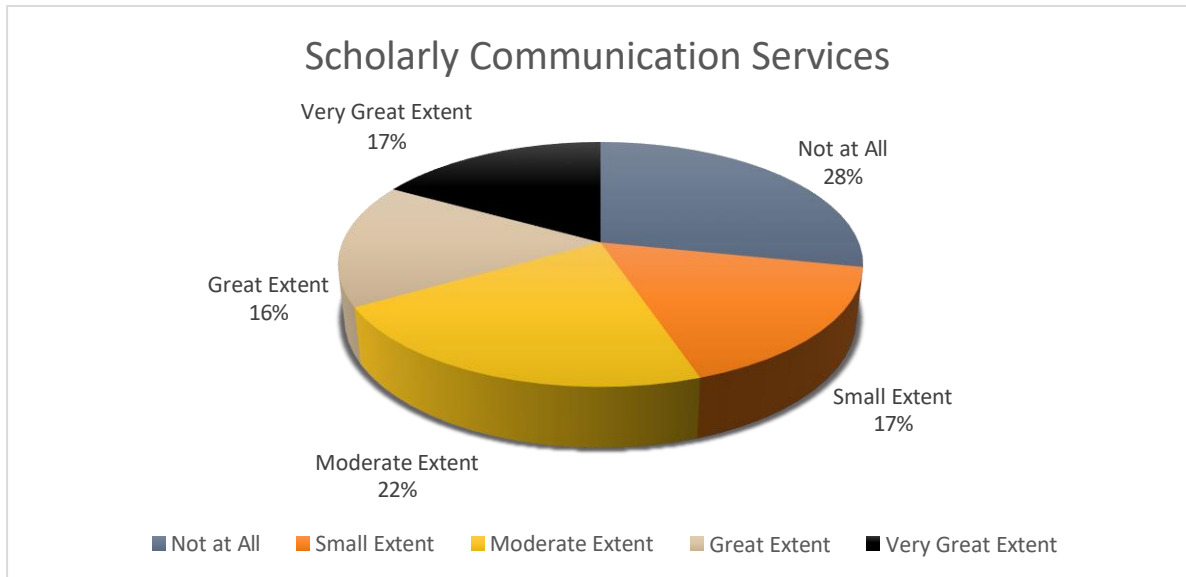


Figure 4.30: Overall Views of Doctoral Students on the Extent of Utilization of Scholarly Communication Services (N=283)

Source: Researcher (2024)

#### 4.5.3 UTILIZATION OF RESEARCH DATA SERVICES

The extent of utilization of research data services by doctoral students in selected public university libraries was analysed and data presented on Figure 4.31. According to these data, majority of doctoral students did not utilize RDS. Cumulatively 155 (55%) of doctoral students did not utilize the services on guidance on the development of tools to assist researchers manage data, 130(46%) doctoral students did not utilize guidance on digital curation, 124 (44%) doctoral students did not utilize provided support for data deposit in institutional repositories, and 136 (48%) doctoral students did not utilize guidance on how to handle and manage unpublished data.

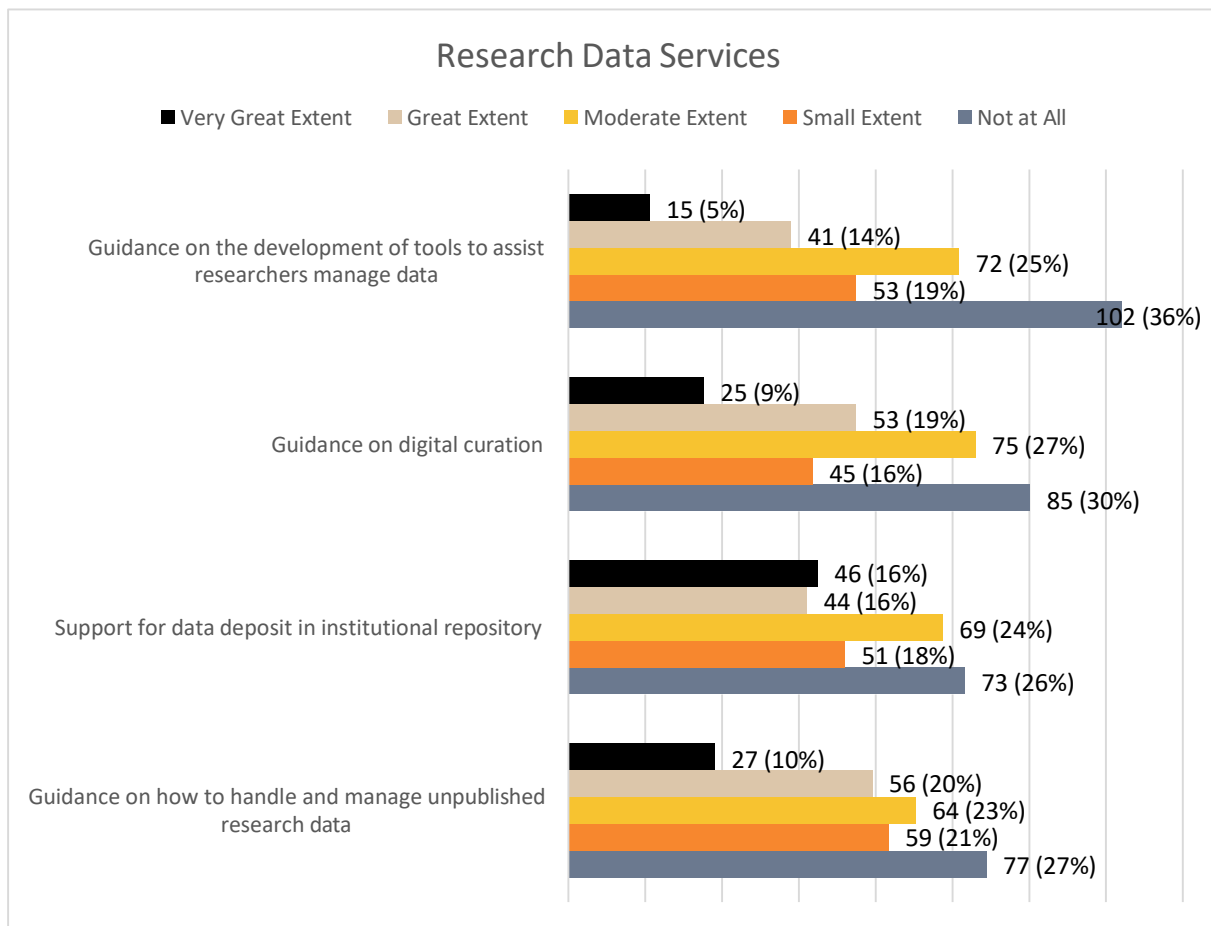


Figure 4.31: Views of Doctoral Students on the Extent of Utilization of Research Data Services (N=283)

Source: Researcher (2024)

According to the pie chart (Figure 4.32) results for the use of Research Data Services, the biggest number of respondents cumulatively (48%) reported that they utilize these services to a small extent. 25% reported to utilize moderately and 27% utilized to a great extent.

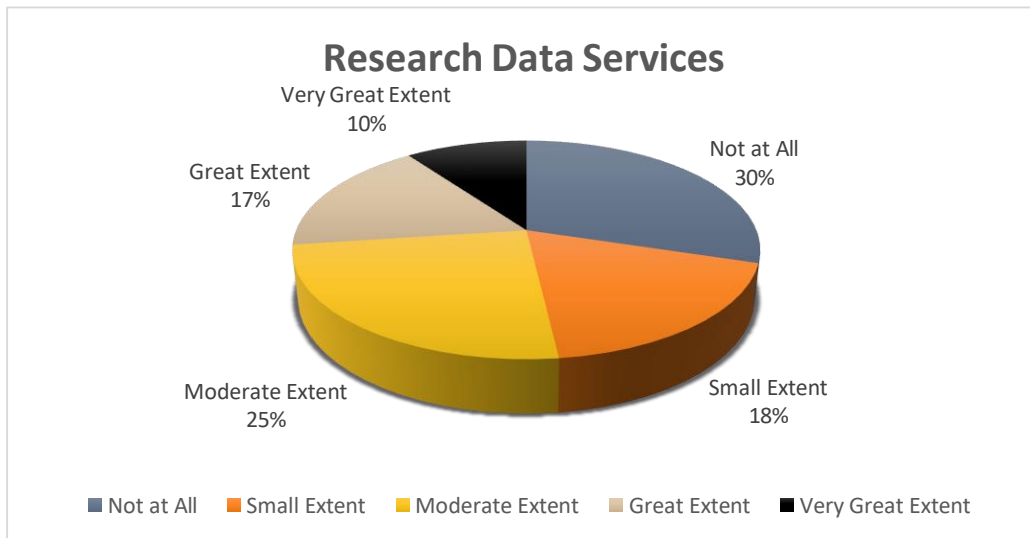


Figure 4.32: Overall Views of Doctoral Students on the Extent of Utilization of Research Data Services (N=283)

Source: Researcher (2024)

#### 4.5.4 UTILIZATION OF RESEARCH DATA MANAGEMENT

The analysis on the extent of utilization of research data management by doctoral students in selected public university libraries was also analysed. Data output was presented in Figure 4.33 guidance on developing data management plans 155 (55%), guidance on how to use appropriate metadata 130 (46%), guidance on writing data management plans 172 (61%), guidance on provision of statistical and other data analysis support 162 (57%) and guidance on grants application 117 (41%).

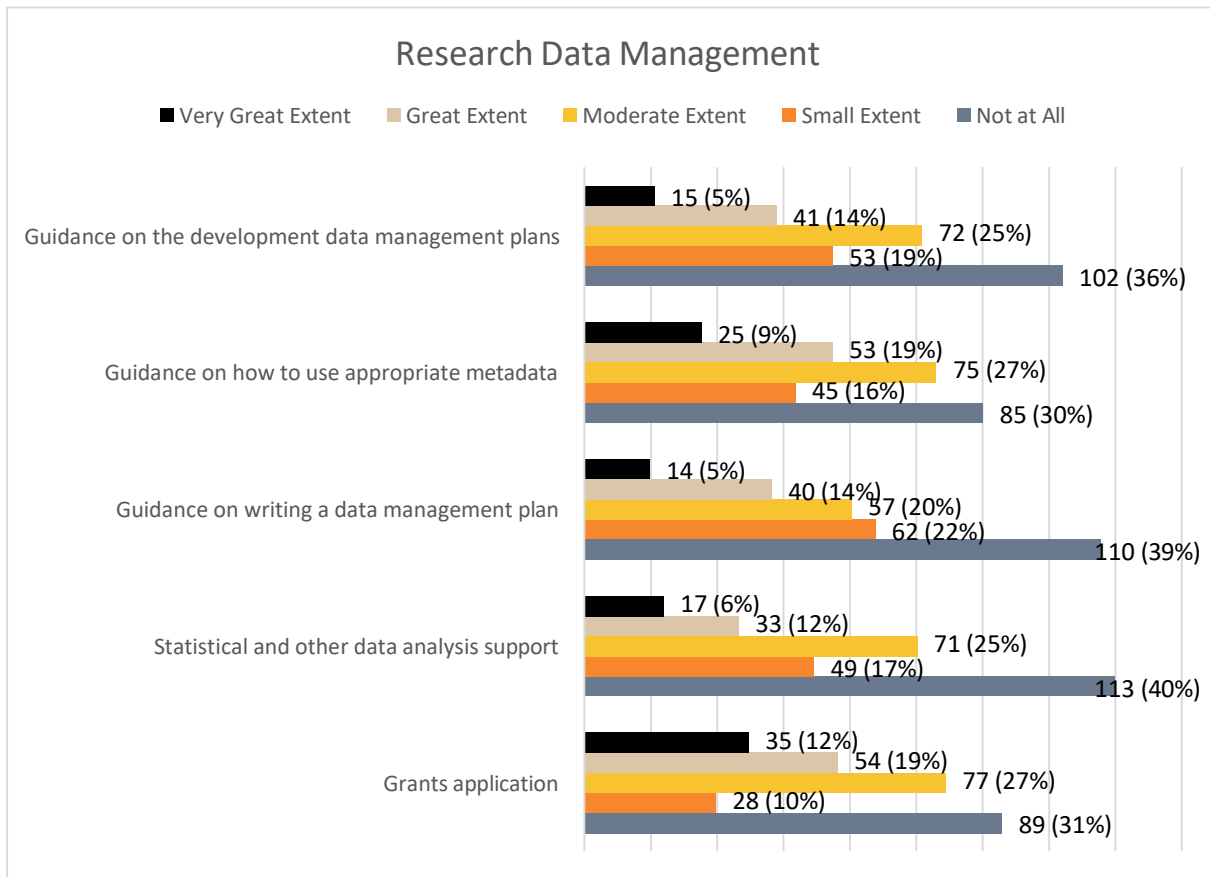


Figure 4.33: Views of Doctoral Students on the Extent of Utilization of Research Data Management (N=283)

Source: Researcher (2024)

Overall, the results of the pie chart (Figure 4.34) on the utilization of Research Data Management revealed that the biggest percentage of respondents cumulatively (72%) do not use Research Data Management at all.

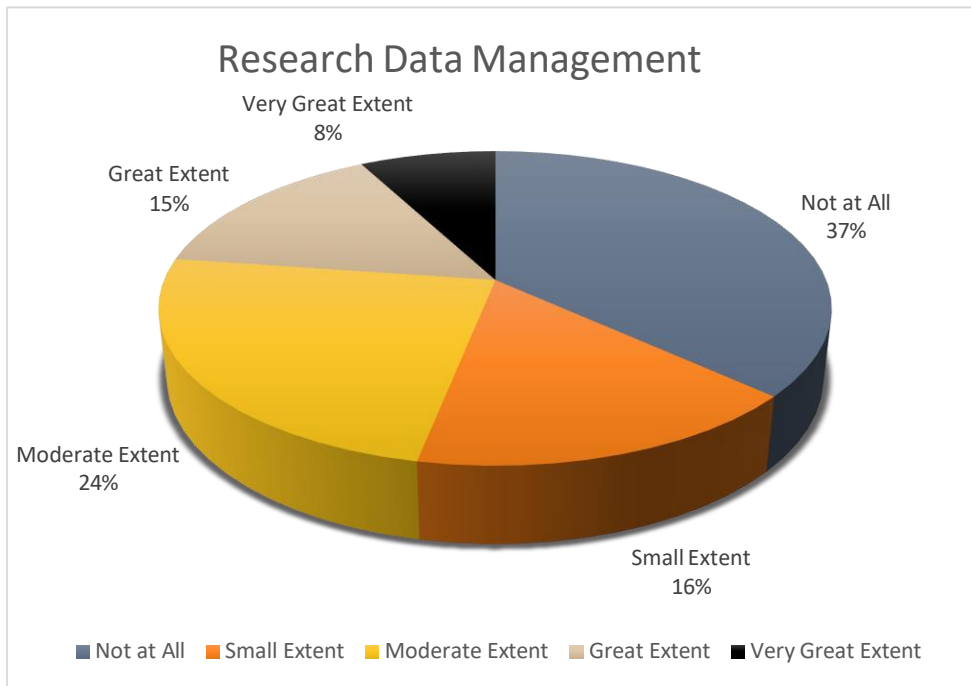


Figure 4. 34: Views of Doctoral Students on the Extent of Utilization of Research Data Management (N=283)

Source: Researcher (2024)

#### 4.5.5 UTILIZATION OF LIBRARY RESOURCES AND SERVICES

Figure 4.35 contains data on the extent of utilization of library resources and services by doctoral students in selected public university libraries in Kenya. The study established that doctoral student used provided e-databases resources 157 (56%), research commons/study areas 157 (54%) for PhD students, print collection in different areas of study 171 (60%), and updates on the latest information accessible (CAS) 147 (52%) were utilized in their university libraries to a great extent.

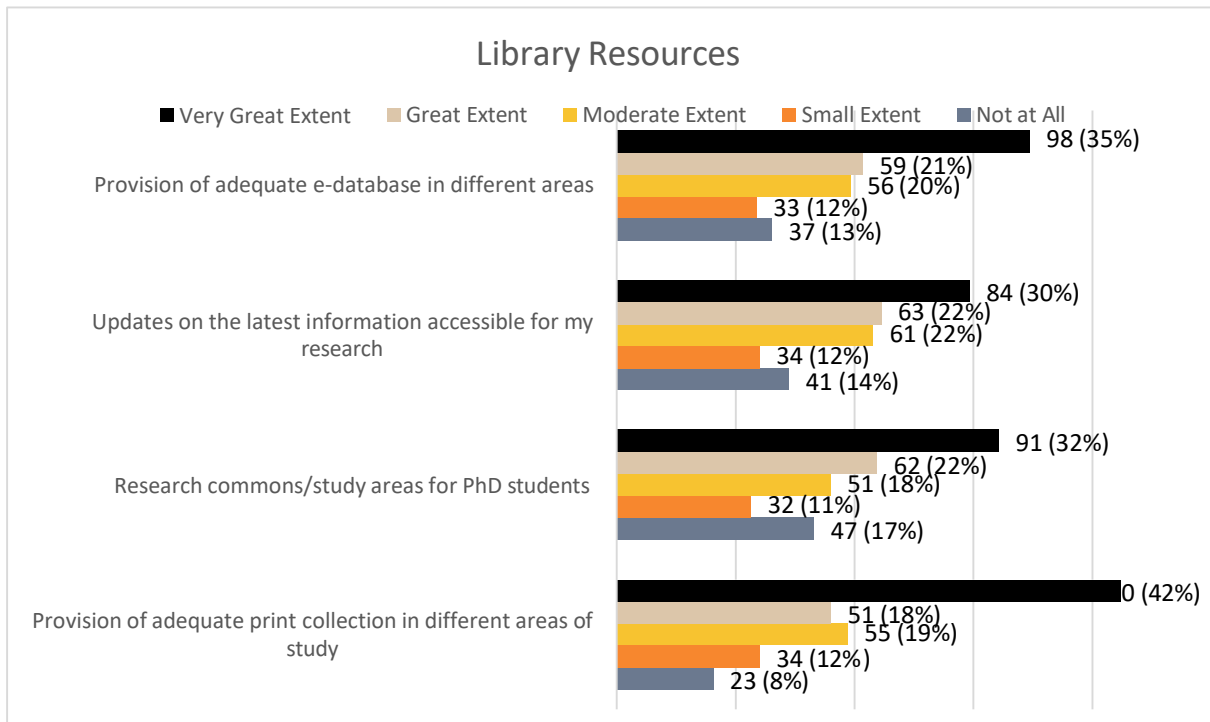


Figure 4.35: Views of Doctoral Students on the Extent of Utilization of Library Resources (N=283)

Source: Researcher (2024)

The pie chart (Figure 4.36) depicts all the library resources and services provided by the selected public universities. Overall, the findings show that a sizable proportion of doctoral students use the library. The majority of respondents (57%) stated that they make extensive use of library resources. This implies a sizable proportion of users who actively engage with and make substantial use of the offered resources.

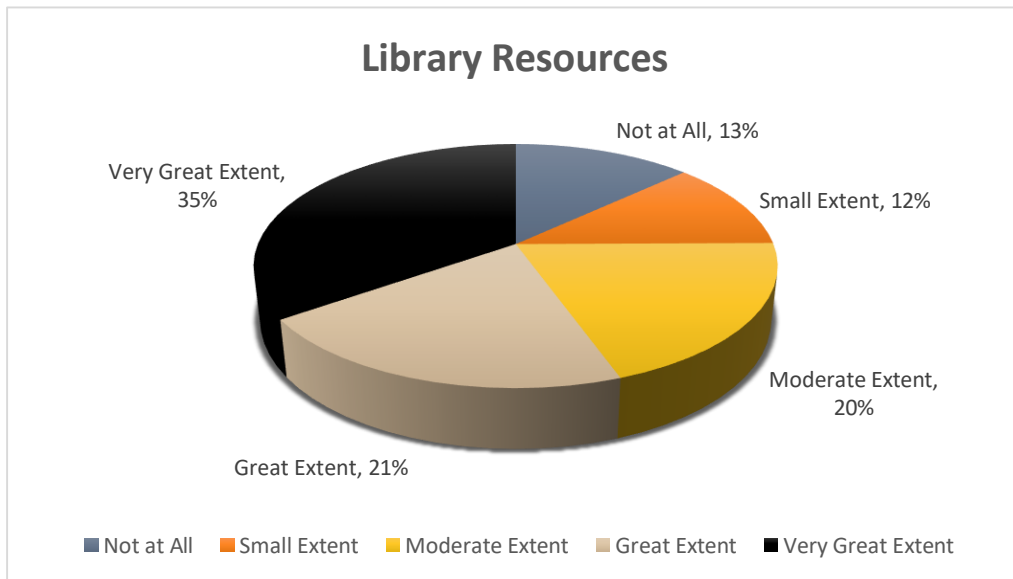


Figure 4.36: Overall Views of Doctoral Students on the Extent of Utilization of Library Resources (N=283)

Source: Researcher (2024)

#### 4.5.6 UTILIZATION OF RESEARCH IMPACT SERVICES

The study also aimed at determining the extent of utilization of research impact services by doctoral students in the selected public university libraries. Data was analysed using interval scale and outcomes presented in Figure 4.37. It was noted that majority of the students in the selected public universities did not utilize H-index calculations 208(73%), altmetric training 210 (73%), calculations of research impact 180 (63%), bibliometric training 170 (60%), and citation reports 127 (45%) were utilized in a small extent.

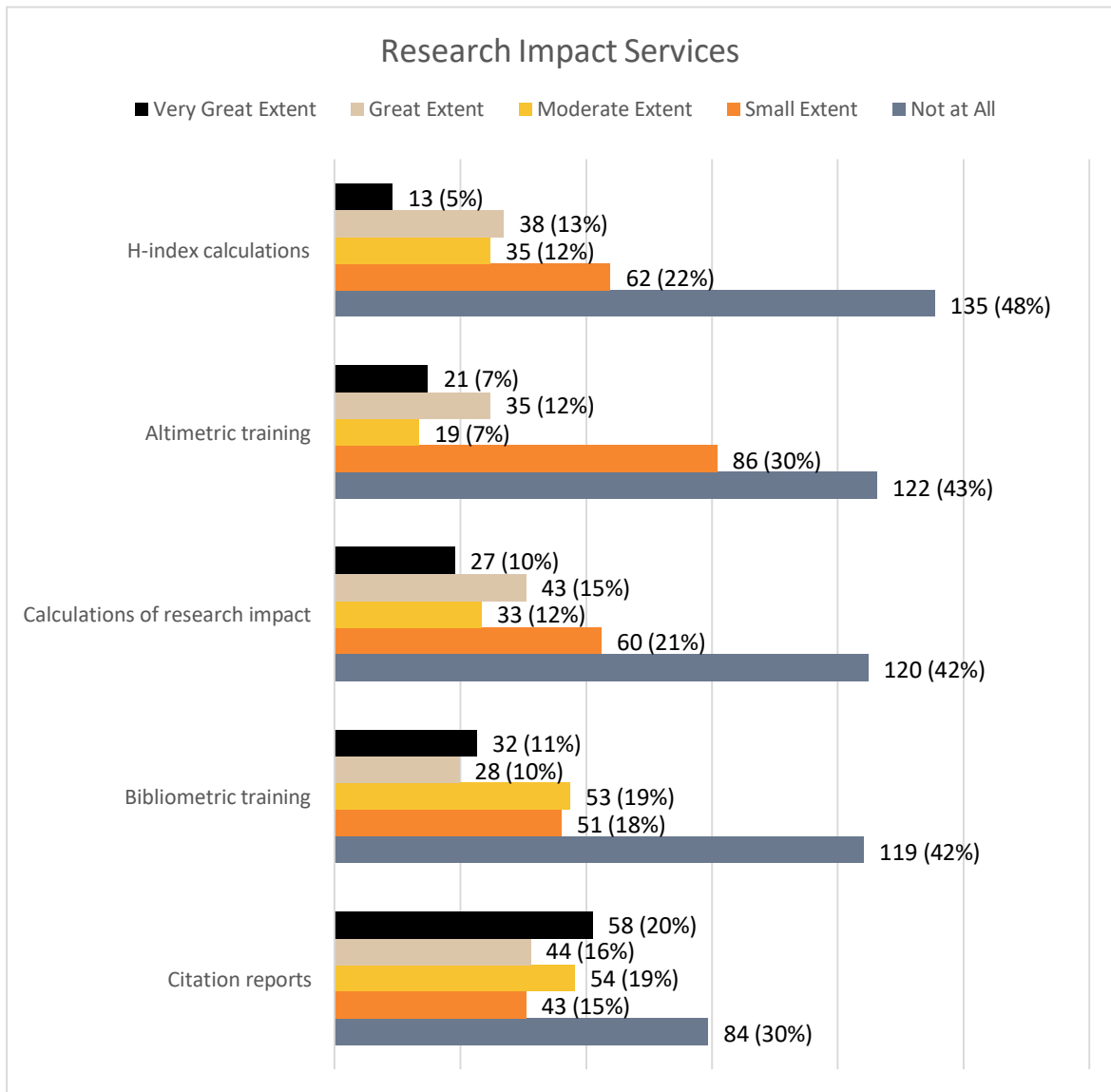


Figure 4.37: Views of Doctoral Students on the Extent of Utilization of Research Impact Services (N=283)

Source: Researcher (2024)

According to the results of the pie chart (Figure 4.38) regarding the use of Research Impact Services, the majority of respondents (62%) said that they do not use research impact services at all or to a small extent.

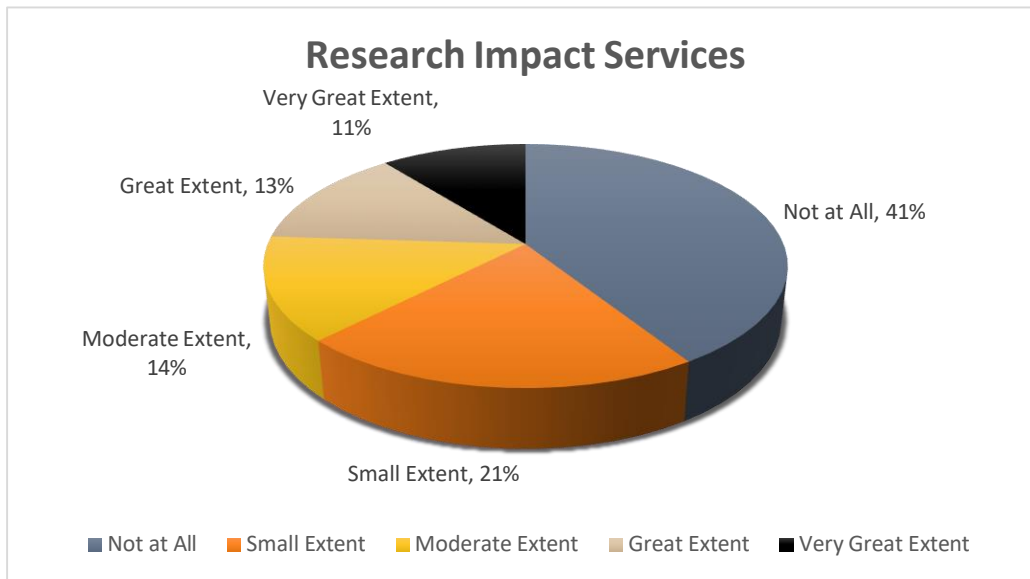


Figure 4.38: Overall Views of Doctoral Students on the Extent of Utilization of Research Impact Services (N=283)

Source: Researcher (2024)

#### 4.5.7 LIBRARIANS' VIEWS ON UTILIZATION RESEARCH SUPPORT SERVICES

The views of the university librarians and library staffs were also captured in relation to research support services mainly utilized/accessed by doctoral students during their research. The university librarians indicated that most of the doctoral students access services of interlibrary lending, utilisation of information resources, citations and referencing software's and scholarly communication process. Figure 4.39 indicates the verbatim responses from the university librarians.

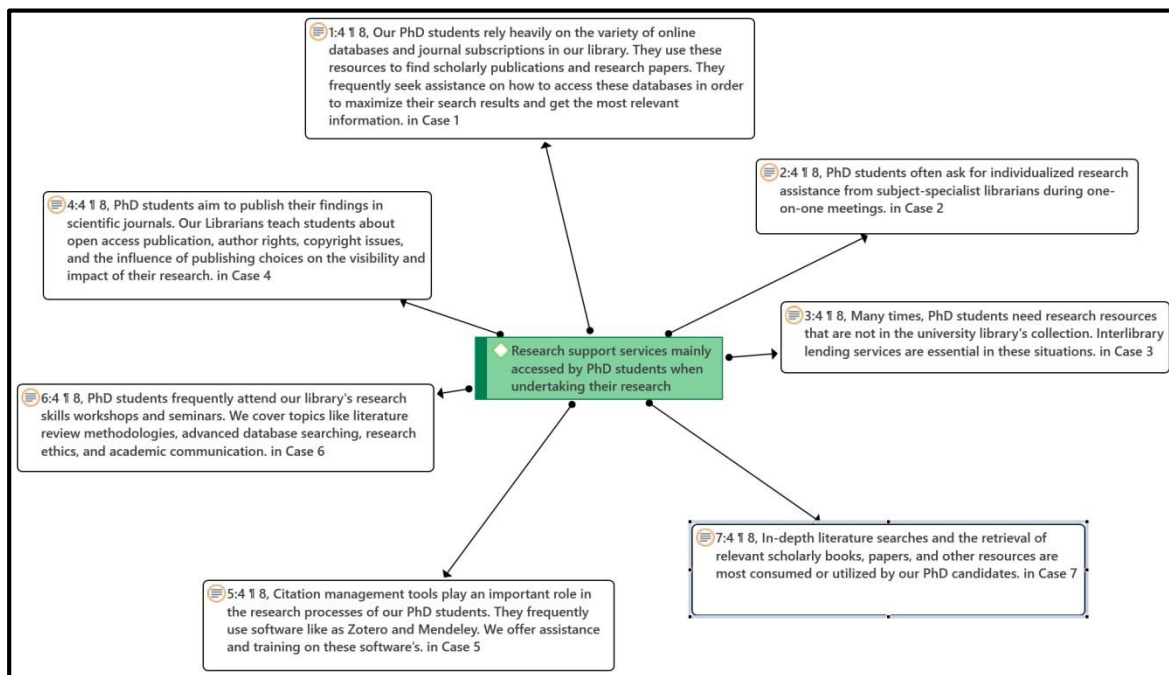


Figure 4.39: Verbatim Responses from University Librarians and Library Staff on Research Support Services Accessed

Source: Researcher (2024)

The above findings show that doctoral students sought and utilized diverse services from university libraries, ranging from those on instructional services, to those on scholarly communication and publishing, library resources and services. The staff further said there had been a continued improvement of doctoral students' research success and completion rate as a result of access and utilisation of these research support services in the public university libraries. Two staff however noted that the rates had not improved and attributed this to the lack of skills, interest and capacity of students to utilise these services.

*Doctoral students from this university rely on our research support services. They frequently request for personalized assistance in literature searches, citation and references, and critically analysing scholarly materials. By providing them with the required tools and resources. As a results of this support, I can say there is some improvement on doctoral students' research outcomes and completion rates (Library Staff 11).*

*While we provide a variety of research support services to PhD students, utilization has been relatively low. We have seen that some students may be unaware of the resources and assistance that are accessible to them, resulting in missed opportunities to improve their research achievement. Also, note that they are not motivated to seek help, combined with time constraints and conflicting priorities (University Librarian5).*

#### **4.6 STRATEGIES USED TO PROMOTE RESEARCH SUPPORT SERVICES FOR DOCTORAL STUDENTS**

The third objective sought to establish the strategies used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya. The study sought to establish the means through which university libraries are using to inform doctoral students of available and new research support services. The study also assessed the skills and knowledge needed by librarians in offering research support service. Also, the study sought to establish how librarians can use their librarian power to enhance the provision of research support services for doctoral students.

##### **4.6.1 MARKETING AND OUTREACH OF RESEARCH SUPPORT SERVICES**

The study investigated how university libraries informed doctoral students of available and new research support services. In this case, university librarians and library staff were asked how they informed their doctoral students of available and new research support services. Based on the responses of the university librarians and the library staff, the themes that emerged were: workshop, email, librarian, seminar, library website, meeting, social media, orientation

event, lecture, research assistance service, brochures, tutorials (offline and online) and word of mouth. Figure 44 shows the means of informing research support services by university librarians and library staff.

#### **4.6.1.1 Workshop**

The University librarians and Library staffs indicated that they inform the doctoral students about research support services using workshops and training. Some of the verbatim quotes are:

*We schedule a specialized session or workshop to inform students on the resources and tools that are available to them [Library staff 3].*

*We provide regular in-library workshops on topics such as citation management, literature review methodologies, and research data management [Library Staff 22]*

*At the start of each academic year, this library organizes orientation seminars and workshops designed especially for doctoral students [University Librarian 6].*

#### **4.6.1.2 Email**

The university librarians and library staffs indicated that they normally informed their doctoral students about research support services using emails. The emails were either official student emails or the emailing list they create in the library. Some of the verbatim responses were:

*One important way is to provide regular updates and notifications to doctoral students through the university's official email system. These emails contain information on the research support services [University Librarian 4].*

*We have a mailing list dedicated to doctoral students, and we send out individualized emails highlighting new research support services, upcoming workshops, and helpful resources [Library Staff 4].*

*To inform students about the research support services available, we perform personalized outreach via email, one-on-one meetings, or lectures during research seminars [Library Staff 12].*

#### **4.6.1.3 Liaison Librarian**

The library staffs indicated that they informed the doctoral students about research support services using librarians. Some indicated there was provision of liaison librarians whose roles were to contact doctoral students on events and any services available in the library frequently.

Some of the responses were:

*The library employs liaison librarians who maintain direct contact with individual doctoral students and their departments. Liaison librarians can adjust their approach and recommendations to each student's specific needs if they understand their needs [Library Staff 8].*

*We actively engage with doctoral students through librarian outreach. Librarians and subject specialists go out to departments and research groups to provide personalized support, hold workshops, and produce special research guides tailored to their specific research interests [Library Staff 24]*

#### **4.6.1.4 Seminar**

The university librarians and library staffs indicated that they informed the doctoral students about research support services using seminars. Some of the verbatim quotes were:

*We provide interesting content that highlights the various courses, seminars, and one-on-one consultations the library offers to assist with research [University Librarian 5].*

*We work together with academics to incorporate research support workshops and seminars into the doctoral program. These seminars include subjects like literature review methodologies, advanced database searching techniques [Library Staff 6].*

*We hold frequent workshops on advanced research approaches, citation management, data analysis tools, and other research-related issues. These seminars are widely advertised and are frequently co-developed with graduate programs to ensure relevance [Library Staff 18].*

#### **4.6.1.5 Library Website**

The university librarians and library staffs indicated that they informed the doctoral students about research support services using websites especially the library website. Some of the verbatim responses were:

*We regularly update our research support services and inform doctoral students of any changes to access or availability of resources via our website [University Librarian 2].*

*We usually do so through the library website which acts as a comprehensive repository of information. On our website, we have a special area where we describe the research support services in great depth and walk users through each step of how to use them [Library Staff 1].*

*The library has a comprehensive and user-friendly website, including a special section for RSS. This section contains comprehensive information on all accessible research support services, such as access to academic databases, interlibrary loan, citation management tools, and research workshops. The website is routinely updated with news and new services, ensuring that students are up to date on the most recent offerings [Library Staff 2].*

*Our library website serves as an information hub. They devote a section to research support services, including information on accessible resources, tools, and upcoming activities [Library Staff 13].*

#### **4.6.1.6 Social Media**

The university librarians and library staffs indicated that they inform the doctoral students about research support services using social media like WhatsApp, Facebook and Twitter.

Some of the verbatim responses were:

*We use a number of digital tools, such as email and a special WhatsApp group for postgraduate students in which librarians take an active role [Library Staff 5].*

*Our library has an active presence on social media platforms such as Twitter, Facebook, and LinkedIn [library Staff 19].*

*Also, social media (WhatsApp, Facebook, twitter), emails, brochures, face-to-face meetings, Word of mouth marketing [University librarian 3].*

*The primary media used by the library to reach the doctoral students is the library website, Facebook and Twitter [University Librarian 7].*

#### **4.6.1.7 Orientation events**

The university librarians and library staffs indicated that they inform the doctoral students about research support services during orientations. Some of the verbatim quotes were:

*We use a comprehensive strategy in this library to tell doctoral students about existing and brand-new research support services. Firstly, we regularly host workshops and orientation events designed just for doctoral students [University Librarian 1].*

*During the orientation period for incoming doctoral students, we hold tailored sessions that describe the library's research support services, highlighting how they can help their individual research interests [Library staff 17].*

*We host new doctoral student orientation workshops at the start of each academic year. These workshops are designed to introduce students to the resources, databases, and research assistance services offered by the library [Library Staff 26].*

Other indicated means of communication were Meeting, Brochures, Tutorials (Offline and Online) and Word of Mouth. Some of the verbatim responses that highlight this were:

*To efficiently reach out to the doctoral student community, the library interacts with graduate student organisations. Through these collaborations, librarians can present and promote research support services at orientation events, workshops, and conferences, building a direct connection with the target audience [Library Staff 10]*

*To accommodate doctoral students' busy schedules, the library organizes webinars and offers online tutorials [Library Staff 9].*

*In this library, we provide online and offline tutorials that provide step-by-step guidance for using research assistance services. These guidelines are readily available in a variety of formats for simple access [Library Staff 14].*

#### **4.6.2 DOCTORAL STUDENTS EMPOWERMENT**

Through a series of interviews, a variety of viewpoints emerged. Some library staff affirmed the beneficial influence of research support services, while others raised concerns or restrictions as shown in the figure 40. On the affirmative side, the following themes emerged: research skills, use of technology, mentorship, and collaboration while the negative found the following themes: time constraining, budgetary restrictions, inadequate staffing, lack of technological infrastructure, lack of skills and knowledge and limited resources. Some of the comments are indicated below.

*Absolutely, the collection that we have enables PhD students explore further into their research areas when they have access to a variety of academic resources, both physical and digital. Rare books, specialty journals, and online databases are all resources they can use to examine various viewpoints and obtain in-depth information for their theses [Library staff 18].*

*Yes, empowering PhD students is a fundamental part of what we as librarians do. We do this, for instance, by providing workshops on academic writing and citation management. With the knowledge they gain from these workshops, students are able to*

write papers that are clearly organized and correctly referenced, which raises the standard and authenticity of their study. We also offer advice on how to organize their huge bibliographies more efficiently by using reference management software like Zotero [Library staff 26].

No: Unfortunately, there may be times when we are unable to offer PhD students timely support due to a lack of staff and time constraints. The progress of their study may be hindered and it may also have a negative impact on their level of empowerment overall [Library staff 15]

No, our current research support services are only available in-person. To increase empowerment, we could look into the use of virtual communication tools, which would allow PhD students to seek help even while they are off-campus or during non-working hours [Library staff 9].

Figure 4.40 is a network view of research Library user empowerment 17 codes from the data and their respective relations.

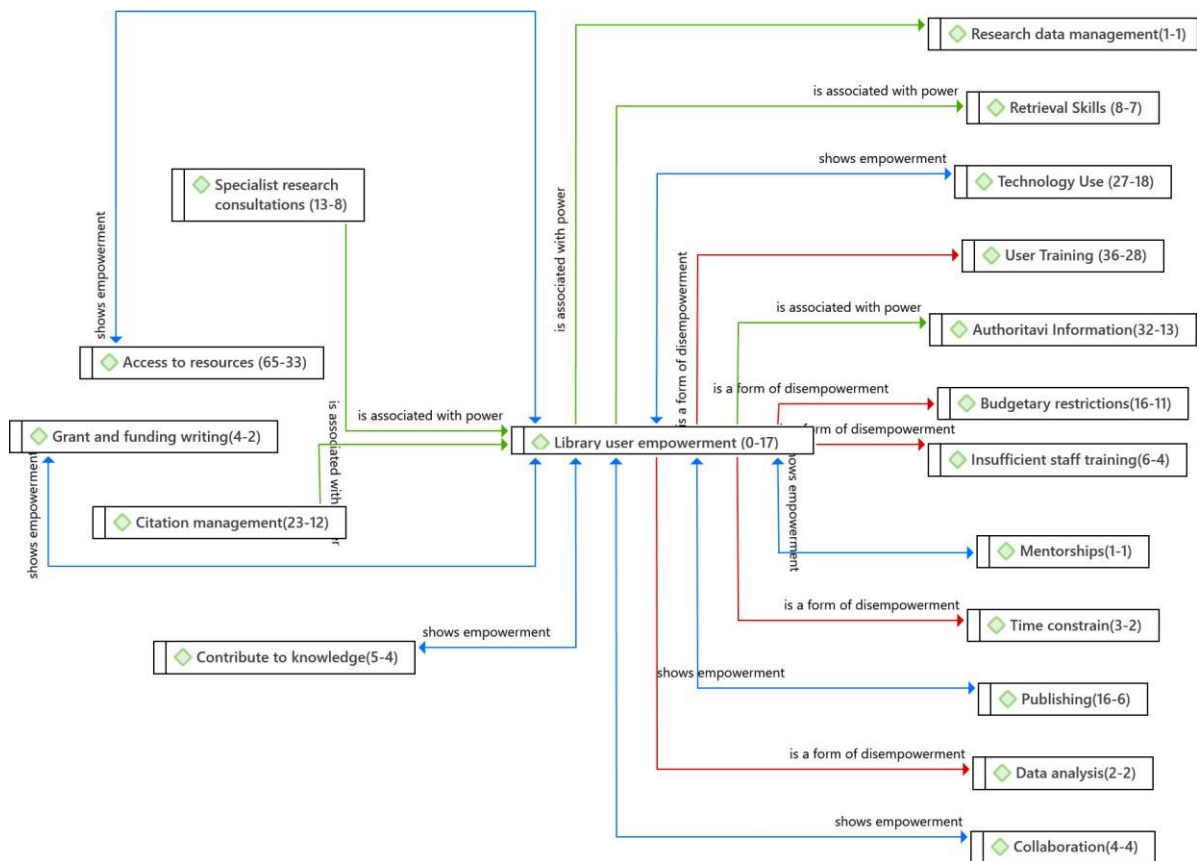


Figure 4.40: User Empowerment

Source: Researcher (2024)

The codes with the 'is associated with power' transitive type of relation include:

- Authoritative Information: 32 times in 13 primary documents
- Research data management: 1 time in 1 primary document
- Retrieval Skills: 8 times in 7 primary documents
- Specialist research consultations: 13 times in 8 primary documents

The codes with 'shows empowerment' symmetrical type of relation include:

- Access to resources: 65 times in 16 primary documents
- Collaboration: 4 times in 4 primary documents
- Contribute to knowledge: 5 times in 4 primary documents
- Grant and funding writing: 4 times in 2 primary documents
- Publishing: 16 times in 6 primary documents
- Technology Use: 27 times in 18 primary documents

The codes with 'is a form of disempowerment' asymmetrical type of relation includes:

- Insufficient staff training: 6 times in 4 primary documents
- Time constrains: 3 times in 2 primary documents
- Budgetary restrictions: 16 times in 11 primary documents
- User Training: 36 times in 28 primary documents

### **4.6.3 LIBRARIAN EMPOWERMENT**

The study assessed whether librarians in the selected public university libraries were competent and empowered to provide adequate support to doctoral students in their research journey and this elicited a variety of responses from the librarians. The study found out that according to the librarians interviewed, most of their library staff do not have the adequate knowledge and skills needed to support doctoral students in their research. Figure 4.41 is a network view of Librarians empowerment codes from the data and their respective relations.

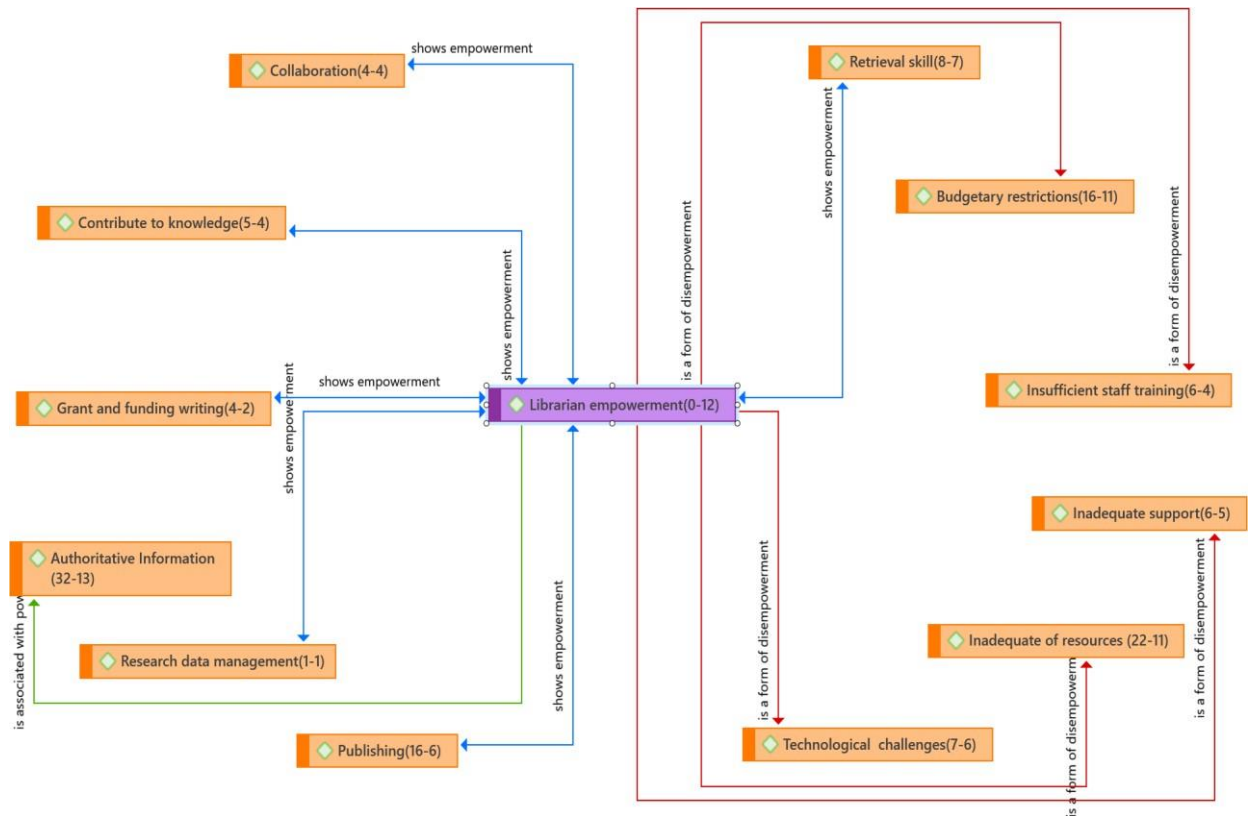


Figure 4.41: Librarian Empowerment

Source: Researcher (2024)

The codes with the ‘is associated with power’ transitive type of relation include:

- Authoritative Information: 32 times in 13 primary documents

The codes with ‘shows empowerment’ symmetrical type of relation include:

- Publishing: 16 times in 6 primary documents
- Research data management: 1 time in 1 primary documents
- Collaboration: 4 times in 4 primary documents
- Contribute to knowledge: 5 times in 4 primary documents
- Grant and funding writing: 4 times in 2 primary documents
- Retrieval skill: 8 times in 7 primary documents

The codes with ‘is a form of disempowerment’ asymmetrical type of relation include:

- Insufficient staff training: 6 times in 4 primary documents
- Technological challenges: 7 times in 6 primary documents
- Budgetary restrictions: 16 times in 11 primary documents
- Insufficient Support: 6 times in 5 primary documents
- Inadequate resources: 22 times in 11 primary documents

Some of the verbatim responses were:

*No, very few staff in our library have the needed skills and capacity to support researchers. If we are to offer good research support services, we need to build capacity through recruitment and training [University Librarian 6].*

*As a librarian, I believe our current competencies for research support services when assisting PhD students are insufficient. While we have the requisite knowledge and skills in library science, we may not have a thorough awareness of the unique demands and obstacles that PhD students experience. It would be great to acquire more training or professional development opportunities focusing on research methodology, academic writing support, and data management to better support them. We can provide more targeted and effective assistance to PhD students throughout their research journey if we improve our competencies in these areas [University Librarian 3].*

*No, unfortunately. I don't feel empowered to effectively support PhD students in their research for a variety of reasons, including limited resources, a lack of training, and organizational constraints [Library staff 6].*

#### **4.6.3.1 Ways of Reskilling Librarian**

Further, the university librarians were asked to highlight what they do to make sure the librarians are well equipped to handle PhD students support services. The themes that emerged were: Workshops, Seminars, Training sessions, Librarian mentorship, Peer learning, Attending Conferences, Attending Networking Events and University budget for continuing education for librarians. Figure 46 shows the themes.

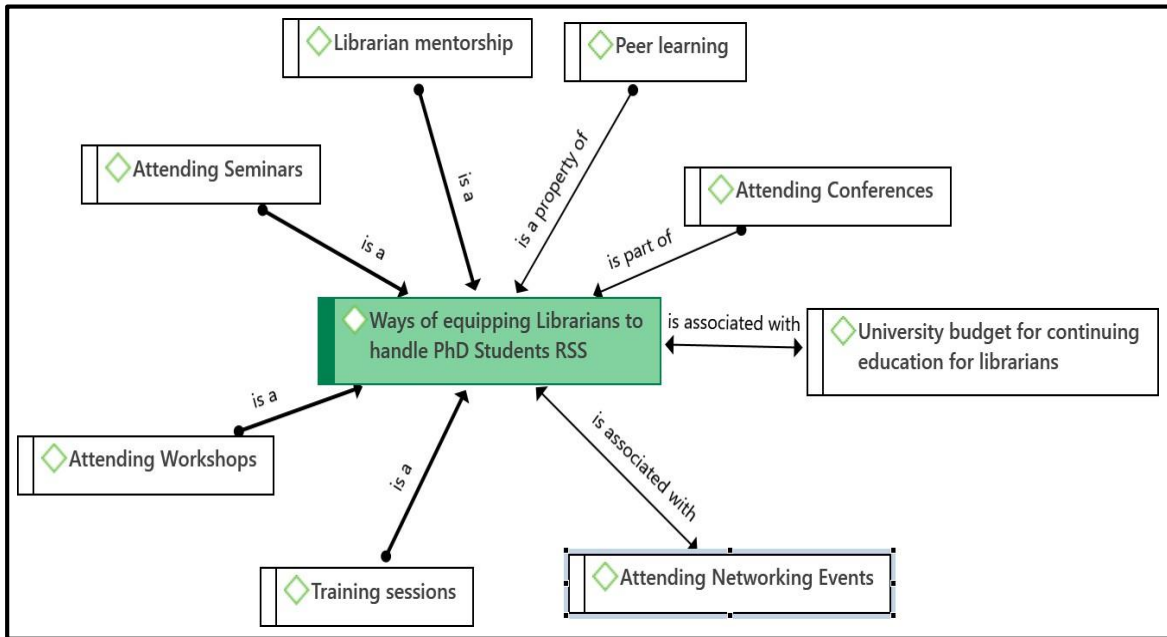


Figure 4.42: Reskilling Librarian

Source: Researcher (2024)

Some of the verbatim responses were:

*We have put up a comprehensive program that includes workshops, seminars, and training sessions on the most recent information technologies, and trends in a variety of academic disciplines. This guarantees that librarians' skills and knowledge are regularly updated [University Librarian 1].*

*Encouraging librarian mentorship and peer learning enables for knowledge sharing and mutual growth [University Librarian 2].*

*We provide funding for librarians to attend relevant conferences and seminars, where they can learn from experts in the field, network with peers, and bring back valuable insights to the library [University Librarian 3].*

*The University budget for continuing education for librarians, which includes attending conferences, workshops, and professional development programs [University Librarian 5].*

#### 4.6.4 LIBRARIAN POWER

The library staff were asked to indicate how they can use their librarian power to enhance research support services of doctoral students in the selected public universities. Figure 4.43 is a network view of Librarians' power 14 codes from the data and their respective relations.

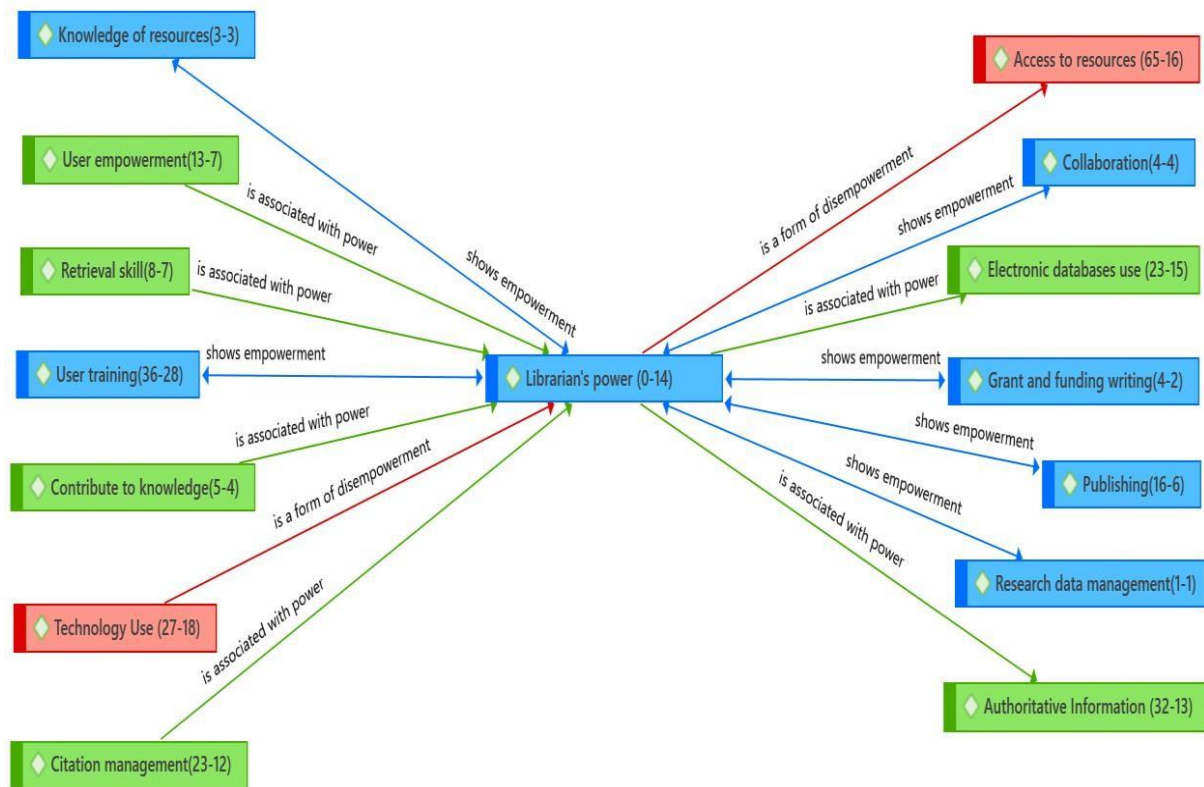


Figure 4.43: Librarian Power

Source: Researcher (2024)

The codes with the 'is associated with power' transitive type of relation include:

- Authoritative Information: 32 times in 13 primary documents
- Citation management: 23 times in 12 primary documents
- Electronic databases use: 23 times in 15 primary documents
- Knowledge of resources: 3 times in 3 primary documents
- Retrieval skill: 8 times in 7 primary documents

The codes with 'shows empowerment' symmetrical type of relation include:

- Publishing: 16 times in 6 primary documents
- Research data management: 1 time in 1 primary documents

- Collaboration: 4 times in 4 primary documents
- Contribute to knowledge: 5 times in 4 primary documents
- Grant and funding writing: 4 times in 2 primary documents
- User Training: 36 times in 28 primary documents

The codes with 'is a form of disempowerment' asymmetrical type of relation includes:

- Technology Use: 27 times in 18 primary documents
- Access to resources 65 times in 16 primary documents

As indicated in the Figure 48, the following themes emerged.

#### **4.6.4.1 User Training**

One of the ways suggested by library staff was improving how they provide instructional sessions or programs to doctoral students. The library staff also suggested increased assistance of doctoral students in analysing data through different data analysis tools, setting up discussions/conferencing areas within the libraries, Below are some of the exerts that support the theme.

*Ensuring library is well supported financially so that they can add more research services for the students. I may improve instructional services for researchers by designing customised seminars and training sessions that target their individual needs and research approaches (Library staff 1).*

*I will create and provide specialized training courses and seminars on research procedures, methods for finding information in the literature, and how to critically evaluate information sources. These seminars would equip scholars to carry out thorough, superior research (Library staff 18).*

#### **4.6.4.2 Contributing to Knowledge**

Library staff asserted that they will cooperate with institutions so as to improve the research support services of doctoral students in the selected university libraries.

*Researchers' resources may be increased through cooperation with other institutions and research centres. I can improve the research support services by partnering with organizations to offer access to specialist databases, collaborative research spaces, and cooperative financing opportunities (Library Staff 6).*

*By organizing seminars and webinars in various areas of research, multidisciplinary collaboration opportunities, and new trends. These events will foster knowledge exchange and empower researchers to adopt innovative approaches. These events will promote information sharing and empower researcher in their research journey (Library staff 8).*

*I will collaboration with faculty to embed information literacy skills into the curriculum. This will ensures that students acquire essential research skills early in their academic journey. By working together, we can integrate information literacy instruction into relevant courses and assignments, strengthening students' research abilities (Library staff 10).*

#### **4.6.4.3 Workshops, Webinars and Seminars on Publishing**

Library staff indicated that they normally organized workshops, webinars where researcher could share ideas and promote interdisciplinary collaborations. The library staff also provided extensive trainings that will include one on one consultations and specialized trainings that will cater for each doctoral student's needs. Some of their sentiments are shown below.

*I will organize for webinars, brown bags where researchers can present their work, share ideas, and promote interdisciplinary collaboration within the institution. The research support is improved through these activities, which promote networking, teamwork, and the sharing of research findings (Library staff 12).*

*As a librarian, I will use my librarian power to work with academics and researchers to create and implement an extensive information literacy program that complements the institution's research objectives and curriculum. Workshops, educational materials, and one-on-one consultations would all be a part of this program, which aims to give researchers the knowledge and abilities they need to efficiently use information sources and evaluate research publications (Library staff 26).*

*I will create and offer specialized research support workshops and training sessions catered to their unique needs and study areas by actively interacting with PhD researchers. These seminars would equip researchers with the knowledge and tools needed to carry out excellent research and successfully negotiate the scholarly environment (Librarian 25).*

*I could provide frequent training sessions and workshops on scholarly searches, research data services and research data management. This will assist researchers in efficiently organizing, preserving, and documenting their data throughout the research lifecycle and also navigating through a pool of information sources (Library staff 24).*

#### **4.6.4.4 Increasing Resources**

One of the key themes that emerged is to increase library resources. Library staff suggested possible ways of how they will use their librarian to achieve this. One way is cooperation with other institutions and research centres. Partnership with academic divisions was also identified by library staff. Some of the comments are shown below.

*Researchers' resources may be increased through cooperation with other institutions and research centres. I can improve the research support services by partnering with organizations to offer access to specialist databases, collaborative research spaces, and cooperative financing opportunities (Library staff 6).*

*To increase the variety of resources available to scholars, I could collaborate with other academic institutions and research centres to give them access to specialist databases, archives, and research collections (Library staff 13)*

#### **4.6.4.5 Creating Tutorials and Research Guides**

One of the themes that emerged is creating online instructional materials including the research guides and online materials, for example, videos and tutorials that shows different aspects of research support services. One of the library staff commented that:

*To make it easier for researchers to access self-help resources at their convenience, I will provide online research guides and tutorials that cover different research methodologies, literature searching strategies, citation management tools, and other research assistance issues (Library staff 22).*

### **4.7 CHALLENGES FACED WITH THE PROVISION AND UTILIZATION OF RESEARCH SUPPORT SERVICES**

For the provision and utilization of RSS to be optimized in the selected public university libraries, respondents were asked the challenges hindering the provision and utilization of RSS. The doctoral students, university librarians and library staff indicated that the challenges they face are lack of resources, budget constraints, access to information materials, limited databases and technological challenges. Figure 4.44 is a network view of Library user disempowerment 13 codes from the data and their respective relations.

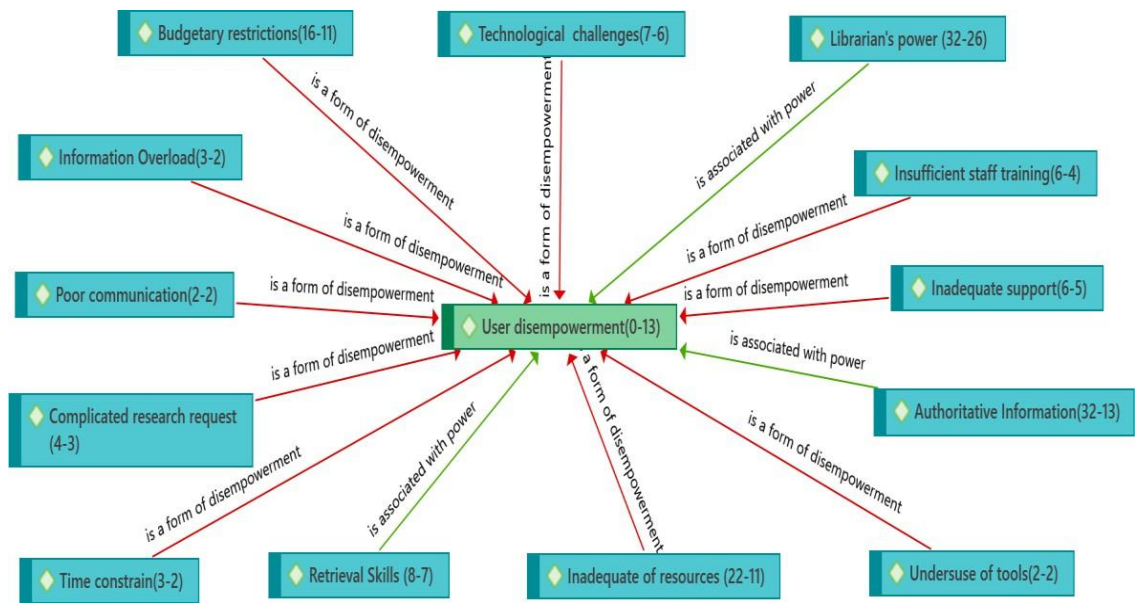


Figure 4.44: User Disempowerment

Source: Researcher (2024)

The codes with ‘shows empowerment’ symmetrical type of relation include:

- Retrieval skill: 8 times in 7 primary documents
- Librarian power: 32 times in 26 primary documents
- Authoritative information: 32 times in 26 primary documents

The codes with ‘is a form of disempowerment ’asymmetrical type of relation include:

- Poor communication: 2 times in 2 primary documents
- Budgetary restrictions: 16 times in 11 primary documents
- Complicated research request: 4 times in 3 primary documents
- Inadequate of resources: 22 times in 11 primary documents
- Inadequate support: 6 times in 5 primary documents
- Information Overload: 3 times in 2 primary documents
- Insufficient staff training: 6 times in 4 primary documents
- Technological challenges: 7 times in 6 primary documents
- Time constrain: 3 times in 2 primary documents

- Underuse of tools: 2 times in 2 primary documents

#### **4.7.1 INADEQUATE CHANNELS OF COMMUNICATION**

One of the challenges highlighted by the respondents are inadequate channels of communication and sensitization of geographically dispersed PhD students on the availability of such services. The respondents argued that many doctoral students were not aware of what their university libraries offer this kind of support due to lack of reliable platform for communication on the part of the libraries and also their culture of not serving students who were away from campuses.

#### **4.7.2 INADEQUATE SKILLED AND KNOWLEDGEABLE LIBRARIANS**

When asked to state the challenges they faced when managing and offering research support services to PhD students in their university libraries, the library staff mentioned inadequate staff to offer quality services. Most librarians also found that their library staff did not have the capacity required to offer quality research services to doctoral students during their research process.

*Library staff have not been empowered enough to support the evolving research methodology and research tool. Another difficulty is that research methodology and tools are complicated and ever-changing. PhD students frequently need help navigating and using specialized research software, statistical analysis tools, and data management systems (Library staff 10).*

#### **4.7.3 FINANCIAL CONSTRAINTS**

Limited resources to facilitate the provision of the said services to PhD students in terms of funds, time, information materials, staffing, training facilities and space as well as dedicated training equipment like projectors was also highlighted as a major challenge by these librarians.

One of the librarians observed that: -

*One biggest challenges with our university libraries is limitation of resources and finance. Budget limits are common in libraries, which might limit the availability of research support services for PhD students such as databases, journals, and research materials (Library staff 12)*

*The constraint of limited resources and financial support is one of the key issues libraries confront in providing research support services to PhD students. Libraries frequently operate on limited budgets, which limits their capacity to invest in complete research assistance services (Library staff 16).*

#### **4.7.4 INADEQUATE AND LACK OF SPECIALIZED RESOURCES**

Inadequate training facilities and computers, internet connectivity lapses, limited access to a wide range of databases and lack of dedicated e-databases for some of the PhD courses. Most librarians and library staff agreed that their libraries lacked adequate facilities for training both staff and doctoral students. Further, the lack of up-to-date e-resources also served as a challenge in offering quality research services by the libraries. Other infrastructural challenges included the lack of good internet connectivity and video conferencing facilities.

*Offering PhD students research support services is a big issue here our libraries across all our campuses because of their limited physical space and financial resources. PhD students frequently require designated areas for quiet study, teamwork, and access to specialized technology (Library Staff 22).*

#### **4.7.5 DEMAND FOR DIGITAL COLLECTIONS**

The surge in demand for digital resources presents a substantial challenge for libraries striving to meet the evolving needs of their users. One of the library staff commented as shown below.

*The increased demand for digital materials is one of the challenges that libraries confront while providing research support services to PhD students. KLISC subscriptions are very limited and libraries have limited finances to go it alone in procuring additional digital resources (Library staff 17).*

#### **4.7.6 LACK OF INFORMATION LITERACY SKILLS**

Other challenges highlighted by the students were fewer training sessions and limited areas of training, lack of some ICT skills among the students, for instance, the ability to install some

software, limited equipment to carry out online trainings and unresponsiveness from students when conducting customer satisfaction surveys. PhD students' lack of consistency in attending research support related trainings hampered the consistency of content covered in trainings thus making them less effective. One of the libraries commented as follows:

*Generally speaking, our PhD students and other researchers often encounter vast amounts of information, making it difficult to navigate and critically evaluate sources. They lack the advanced of information literacy skills. We normally administer the basic when the students are new during their orientation, and you can imagine the kind of damage this will do to our students during their research journey (Library staff 14).*

#### **4.7.7 KEEPING UP WITH EMERGING TECHNOLOGIES**

The fast growth of emerging technologies poses a continuous challenge for libraries seeking to remain relevant in the digital age. It is more challenging for universities to support the demands of the modern research needs as indicated by one of the library staff below.

*Modern research depends heavily on technology, and it can be difficult for library staff to stay current with the newest platforms and tools. The time and resources available to library personnel to offer all PhD students with significant research support may be restricted, especially during seasons of high academic demand (University librarian 7).*

#### **4.7.8 LIMITED CONSORTIUM SUBSCRIPTIONS**

The challenge of limited consortia subscriptions is a key impediment for libraries attempting to provide diverse and complete resources to their doctoral students. Library staff mentioned some challenges their libraries face as indicated below.

*We have limited access to subscribed resources due to technological challenges. Our PhD students faces difficulties of gaining access to other scholarly resources due to copyright issues and also lack of search skills. This alone hamper the students from carrying out their research activities (Library staff 17).*

*One major challenge that we experience in our side is lack of specialized resources. Some fields necessitate access to specialist databases, archives, or resources that may not be readily available in the library's collection. For example, access to specialized*

*databases for our PhD students are not covered through consortium. Libraries don't have finance to support (Library staff 15).*

#### **4.7.9 TIME CONSTRAINTS AND WORKLOADS**

Unfriendly timing of training sessions and restricted access to some crucial electronic information resources were challenges cited by doctoral students and library staff respectively. The students explained that in many times, trainings and other support services were scheduled during times when most of the students were working. Some of the librarians explained that: -

*Most doctoral students do not have time to avail themselves for training. Most postgraduate students are away from campus and reaching them is difficult, limited resources centres for training, lack of dedicated equipment for training e.g. Projector, failure of University to incorporate Information Literacy programme in the curriculum (University librarian 2).*

*Difficulties in securing time for instructions is a major headache. The library is also operating with inadequate staffing thus piling pressure on librarians who have to juggle all the services offered by the library. Moreover, we lack a dedicated budget to support the research activities in the library (Library staff 7).*

#### **4.8 SUGGESTED MEASURES OF ADDRESSING CHALLENGES FACED WITH RESEARCH SUPPORT SERVICES**

Both the librarians and the doctoral students gave suggestion that can be used to manage the challenges faced during provision of RSS. Some of the themes that emerged were: availing the resources needed for RSS; Making sure the research support service were available and efficient; conducting workshops; creating awareness of RSS; Improving on the information's sources; Improving on technology; Conducting training; collaborations and consultation. Below are some of the excerpts that supported the theme.

*Programs for information literacy can be created by libraries that are geared specifically for PhD students. These programs can include workshops, seminars, or one-on-one consultations. These programs can help students effective search strategies, analyse sources, and manage their research process (Doctoral student).*

*Formal IL training for PhD students, Subscription to dedicated databases for postgraduate students, recruitment of appropriately trained library staff to handle PhD students, Re-skilling of library staff to provide these services, improved marketing of*

*research support services for PhD students, setting up of a strong strategy for provision of library services to PhD students (University Librarian 3).*

*To address this issue, libraries can provide thorough and easily accessible online guides and tutorials that clarify the available research help services. They can also promote library resources and services to PhD candidates by working with academic departments and supervisors (Library Staff 9).*

#### **4.9 CHAPTER SUMMARY**

This chapter presented the analysis of data collected from the study that aimed to examine the existing Research Support Services (RSS) for doctoral students in selected public university libraries in Kenya. The study adopted a convergent parallel data analysis method, where qualitative and quantitative data were analysed separately and compared. The presentation structure was based on the study objectives, which included examining the extent of utilization of RSS, establishing the strategies used to promote RSS, analysing the challenges faced by libraries in providing RSS, and proposing a critical librarianship framework.

The study used a mixed-method model, and qualitative data was tested using triangulation. The data was presented using measures of central tendency, such as mean scores, and analysed using SPSS. The study found out that the utilization of RSS among doctoral students was low, and there were several challenges faced by libraries in providing RSS. The chapter presents the findings using pie charts, histograms, figures, and tables. Overall, the study highlights the need for a critical librarianship framework that can enhance RSS in university libraries in Kenya. These salient findings are discussed further in the next chapter.

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.1 INTRODUCTION**

This chapter discusses and interprets the research findings presented in Chapter Four of the current study. The purpose of this study was to investigate how a critical librarianship approach can enhance research support services in selected public university libraries in Kenya and propose its framework. The interpretations and explanations given in this section are further supported with evidence in extant literature thereby giving meaning to data generated from survey questionnaires and interviews. Five research objectives were formulated in Chapter One (Section 1.6) and the discussion is anchored in these research objectives. Further, the interpretation and discussion of findings were logically arranged in consonance with the research objectives of the study which were as follows:

- i. Examine the existing research support services for doctoral students in selected public university libraries in Kenya
- ii. Evaluate the extent of utilization of research support services by doctoral students in selected public university libraries in Kenya
- iii. Establish the strategies used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya.
- iv. Determine the challenges faced by libraries in providing research support services for doctoral students in selected public university libraries in Kenya.

The findings for each research objectives were thematically discussed and interpreted in subsequent sections in adherence to the pragmatic ontological worldview, synonymous with mixed methods research approach adopted by this study. This chapter covers: the concept of research support services, existing RSS, extent of utilization, strategies used to promote RSS, challenges, recommendations and concluding remarks.

## **5.2 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS**

The findings in Figures 4.3, Table 4.1, and Table 4.2 show the distribution and demographic information of the respondents. In the research findings, Figure 4.3 shows the distribution of doctoral students according to the university they belong to. Furthermore, Figure 4.4 represents the distribution of doctoral students based on the year of their study. The research data shows that majority of doctoral students, 34% (96 students), were in their fifth year of study while 23% (65 students) were in their sixth year. Additionally, 13% (37 students) and 13% (36 students) of students were in their second and fourth year of study, respectively.

Lastly, 10% (29 students) and 7% (20 students) of students were in their seventh year and above, and third year of study. Lastly, Figure 4.5 reveals that 83% (234 students) of doctoral students are doing coursework and research while the remaining 17% (49 students) are undertaking doctoral programs through thesis by research. The data shows that there is a high concentration of doctoral students in the advanced stages of their studies. More than half of them, that is 57%, are in their fifth or sixth year. This suggests that there might be a bottleneck or extended timelines for completion. It is important to note that majority of them, that is 83%, are pursuing a combined coursework and research pathway. This highlights the need for research support services that cater to students managing both theoretical and practical demands.

The findings in Table 4.1 and 4.2 shows the profile of university librarians and library staff respectively. The findings revealed that library staff education, 15(58%) of the staff held a bachelor's degree, 10(38%) had a Master's degree, and 1(4%) had a PhD. Most library staff (58%) have a bachelor's degree, while 38% hold a master's degree and only 4% have a doctoral qualification. This suggests a strong foundation in library science, but limited representation of the highest level of academic expertise. The main goal of this study was to investigate how a critical librarianship approach could improve research support services for doctoral students in

selected public university libraries in Kenya. It was important to understand the demographic factors of the participants because it offered valuable context for interpreting the study's findings, as they may impact the needs, preferences, and challenges experienced by different groups of doctoral students, even though this wasn't the main focus of the study. The personal information sought from the doctoral students were respective university, field of study, mode and year of study as well as gender.

### **5.3 RESEARCH SUPPORT SERVICES PROVIDED IN SELECTED PUBLIC UNIVERSITY LIBRARIES**

The first objective sought to examine the RSS offered in the selected public university libraries. Quantitative data were analysed to answer the research question. To better understand the concepts under study, the researcher asked the librarians for their understanding of the term RSS. Quantitative views were also sought on the RSS offered and the satisfaction level of doctoral students on the provided RSS.

#### **5.3.1 THE CONCEPT RESEARCH SUPPORT SERVICES**

To better understand research support services, it is fundamental to understand its meaning. According to the findings of this study three main themes emerged on what research support services are as shown in Figure 4.7. Research support services as essential service offered by libraries to researchers, assistance offered to researchers, faculty, and students to enable them to undertake their tasks and as an activity/product offered to researchers in their entire research cycle. The foregoing statements showed a consensus on what entailed research support services among the university librarians and library staff. In general, research support services in the current context could be termed as the guidance, support or assistance given by libraries to

meet the research needs of various users and support the realization of universities' learning and research goals.

This study agrees with Parker (2012) who defined research support as “services and facilities which assist in increasing research productivity and scholarship”. Also, the study agrees with Leenaraj and Tuamsuk (2016) definition of RSS as specific information services provided to promote the research needs of library clients in institutions, while Hoffman (2016) defined RSS as an activity that the library does to support scholarship and research in the parent institution. According to Namuleme and Kanzira (2017), the services that academic libraries can offer to their users, can be classified into two categories, namely, traditional and “new” support services. The former category, according to the authors, would include collection development, selective dissemination of information, current awareness services, information literacy training and open access publishing, while the “new” support services comprise bibliometrics and systematic reviews (Onyanha, 2018).

### **5.3.2 RESEARCH SUPPORT SERVICES PROVIDED IN SELECTED PUBLIC UNIVERSITY LIBRARIES**

This section discusses the quantitative and qualitative findings from doctoral students and librarians about the RSS offered to doctoral students. Table 4.3 shows that 270 (95%) of doctoral students stated that respective university libraries offered library resources, 198 (70%) instructional services, 149 (53%) offered research data service, 164 (58%) scholarly communication services, 102 (36%) and 120 (42%) research impact management services and research data management respectively. The investigation of research support services provided for doctorate students in the selected public university libraries revealed a variety of services offered. The study established that in the selected public university libraries, doctoral students were offered research support services that were generally made up of different

activities, services and products availed towards not only meeting the research needs of the students throughout the entire research cycle but also fulfilling the universities' research goals. These findings underscore the importance of university libraries as an academic support hub. These findings were consistent with the observation by Si et al. (2019), Liang, et al., (2016), Howie and Kara (2022) that research support services provided in top ranking universities included scholarly communication, research data management, open access, research consultations among others. The diverse research support services offered in these university libraries could be informed by the different research needs of doctoral students while undertaking their research projects/thesis. Findings also showed that services differ from one university to the other. It was found that the selected public university libraries provided several research support services for doctoral students. This finding supports the argument by Tang and Zhang (2019) that university libraries demonstrated maturity in the provision of research support services at different stages of research lifecycles. The findings also support the observation by Haddow and Mamtora (2017) that in response to increasing demand for research support by researchers and other library users, university libraries invested in diverse research support services to meet the needs of their clients. The specific research support services provided in selected public university libraries are further discussed.

### **5.3.2.1 Instructional Services**

The findings of this study (Figure 4.8) indicated that selected university libraries provide instructional services such as citation and referencing, plagiarism and copy rights, advice on research proposal writing, advice on literature review, data collection, sources of funding, research clinics or workshops, database training, research topic guidance and data analysis. The findings on views of doctoral students on the provision of instructional services indicate that advice on plagiarism and copyrights was provided most as indicated by 160 (57%) doctoral

students. Findings from the library staff (Figure 4.10) showed that 25 (96%) and 22 (85%) of the library staff indicated that their respective university libraries offered citation and referencing guidance and database training respectively. Closely following are 20 (77%) who asserted that advice on literature review was provided in their university libraries. Again 16 (62%) and 19 (73%) of the library staff agreed that research clinics/workshops and advice on copyright and plagiarism were provided in their university libraries respectively.

However, the least provided instructional services according to doctoral students' findings were advise on sources of funding 93(33%), advise on research topic 97 (34%), guidance on data analysis 74(26%), citation and referencing 65(23%), database training 74(26%), advice on research proposal 100 (35%) and data collection advise 97 (34%). Additionally, research clinics or workshops 72 (25%), and advice on literature review 70(25%) was neutral in their provision. Analysis from the library staff showed that 18 (69%), 15 (58%), 12 (46%), 14 (54%) and 19 (73%) of the library staff reported that advice on research proposal, sources of funding opportunities, data analysis using computer software, data collection and advice on research topic were not provided in their university libraries.

The findings from doctoral students, the library staff and university librarians paint a complete picture of instructional services offered and not offered in selected public university libraries. Doctoral student's views on plagiarism and copyright, aligns with the positive views of the library staff and university librarians on the provision of these crucial service. The popularity of this service could be attributed to the importance of this component in the research and academic writing processes and the fact that university libraries place a high value on academic integrity and addressing the complexities of scholarly communication.

However, there is a discrepancy between librarians' view and doctoral students views on the provision of services such as citation and referencing, database training, advice on literature review, and research clinics or workshops. Doctoral students acknowledged less or no

provision while librarians categorised these services as among the most offered. Lower demand for these services may result from doctoral students' perception that these services are more specialized or less directly related to their immediate research needs and also could be attributed to communication gaps.

Also, the views of doctoral students and librarians converge on advice of research proposal, source of funding opportunities, data analysis, data collection, and advice on research topic services which are not provided adequately. This can be due to lack of specialized knowledge among library staff in these areas, and libraries being understaffed and underfunded. This suggest possible areas that need to be worked on by the library so as to better meet the needs of doctoral students.

These findings confirm Khan et al. (2021) assertion on their study on awareness of plagiarism which sees plagiarism as one of the aspect of academic integrity that has garnered a lot of attention over the years and Dawe et al. (2021) supports libraries being best positioned to act as the “authority” for advising and guiding on plagiarism and citation styles. These findings confirm Delaney and Bates (2018) assertion that there was a widespread lack of awareness among doctoral students regarding library resources and services.

The findings also confirm the assertion by Avuglah and Underwood, 2019; Cox et al., 2019; Mahwasane, 2019; Onyancha, 2018; Pasipamire & Hoskins, 2019 that academic librarians have been found to be handicapped in one way or another in the provision some research support services like data management, metrics (bibliometrics, altmetrics, and webometrics), research consultations among others. It was therefore not surprising that research support services such as training users in the type of services offered by the library, user orientation, and education were also rated poorly as indicated by eight faculty members (4%).

### **5.3.2.2 Scholarly Communication Service**

The findings of this study show the extent to which university libraries provide scholarly communication services to their doctoral students. Figure 4.11 and 4.12 shows sources of research collaboration, open access publishing, advice on identification of credible journal, profiling of researchers, advice on social media for research dissemination and publishing advice are the type of scholarly communication services provide in the selected public universities. According to the doctoral student's advice on sources of research collaboration, identification of credible journals and open access publication was adequate as per the cumulative scores of 124 (44%), 159 (56%) and 166 (58%) respectively as shown in Figure 4.13. Results from the library staff 26 (100%) and university librarians affirmed that their respective libraries offer advice on the open access publishing, and identification of credible journals (Figure 4.13). In terms of publishing advice, advice on sources of research collaboration, social media for research dissemination and profiling of the researcher are provided as per the values of 20 (77%), 19 (73%), 18 (69%) and 16 (62%) respectively.

However, the least offered services according to doctoral students are advice on social media use for research dissemination and advice on profiling of researchers. Provision was inadequate as indicated by cumulatively scores of 136 (48%), and 130 (46%) respectively. Also, notable is publishing advice 79 (28%) which is neutral. On the contrary, the findings from the librarians indicate that social media for research dissemination and profiling of researchers were part of the scholarly communication services offered in their university libraries as indicated by 18 (69%) and 16 (62%) librarians respectively.

The responses for scholarly communication services revealed variation on provision of scholarly communication services in the selected public university libraries as indicated. Both doctoral students and librarians demonstrated a common interest in specific scholarly communication services such identifying credible journals, open-access publications, and

advice on sources of research collaboration. The interest of doctoral students in seeking help for these services is in line with the claims of librarians, who actively provide advice in these areas in their respective libraries. The convergence of findings from both parties highlights the importance of these services in university libraries.

Scholarly communication services for example advice on disseminating research using social media and profiling of researcher was not provided at all in most of these universities according to doctoral student, on the contrary the library staff indicated that the service is provided. There were discrepancies between librarians and doctoral students on provision of advice on disseminating research using social media and profiling of researcher could be attributed by lack of awareness. This disconnect may be due to the insufficient promotion of these services from the side of the library. Lastly, publishing advice was rated neutral by doctoral students. Dissatisfaction among doctoral students may stem from inadequate promotion of these services within university libraries.

This study agrees with the recent study by Mierzecka (2019) which identified open access publishing as one of the key areas where librarians may provide research support. The findings of this study agree with Haddow and Mamtora, (2017); Kaur and Sharma, 2018; Mandal and Dasgupta, 2019) arguments that academic librarians in universities need to be strategically positioned and be knowledgeable in the latest digital platforms and software in order to meet the needs of the library users. Ince et al. (2019) also recognized that academic libraries had become more involved in the conversations surrounding scholarly communication and publishing. The popularity of such services could be attributed to the fact that scholarly communication has changed dramatically in the digital era and scientific communities are created more rapidly today than in the past (Fagan et al., 2022).

### **5.3.2.3 Research Data Services (RDS)**

The findings (figure 4.14) indicate that selected university libraries do not provide technical services such as support for data deposit in institutional repositories 228 (77%), guidance on the handling and management of unpublished research data 212 (72%), technical aspects of digital curation 195 (69%), and guidance on services on developing tools to assist researchers to manage data 227 (80%). Similarly, librarians 20 (77%) indicate that support for data deposit in institutional repositories, 22 (85%) guidance on handling and management of unpublished research data and relevant external data sets, 25 (96%) technical aspects of digital curation, and 21 (81%) developing tools to assist researchers to manage data were part of the research data services that were not offered in their university libraries (Figure 4.16).

Most doctoral students and librarians agree that university libraries lack adequate research data services, highlighting the urgent need for university libraries to take action in providing comprehensive services that meet researchers' needs. However, this study challenges the findings of Tenopir et al. (2017) and Cox et al. (2019), who claimed that more academic libraries offer informational or consultative research data services such as creating web guides or consulting on data management plans than technical or hands-on services, like maintaining data repositories or creating metadata for datasets. Cox et al. (2019) opined that academic librarian were challenged in their skill gaps (for example in offering metric-related services for which they had not been trained) and Mushi et al. (2020) observed that there was a low awareness of RDS and there is need for sensitization.

### **5.3.2.4 Research Data Management Services**

This study investigated whether the university libraries provided support on RDM (See Figures 4.17 and 4.19). The findings of this study reveal that the majority of the doctoral students confirmed that their university libraries do not offer RDM services as indicated by grants

application 127 (45%), guidance on developing data management plans 141 (49%), provision of statistical and other data analysis support 126 (45%), guidance on how to use appropriate metadata 138 (49%), and guidance on writing data management plans 175 (61%). Further analysis according to the librarians reveal that, grants application 20(88%), guidance on developing data management plans 22 (73%), provision of statistical and other data analysis support 20 (77%), guidance on how to use appropriate metadata 22 (81%), and guidance on writing data management plans 22 (77%) were not offered at all in the selected university libraries (Figure 4.19).

From the findings, both librarians and doctoral students agrees that the selected public university libraries do not support this service adequately. This can be attributed to factors including infrastructure, policy, inaccessible data and inadequate skills among librarians. Lastly, guidance on writing data management plans was not offered at all in the survey universities. The absence of this service may be due to various issues, namely lack of resources, qualified personnel, or underestimation of data management planning's relevance in academic research. These findings confirm Cox et al. (2017), Howie and Kara's (2022), and Chawinga and Zinn, (2020) assertion that infrastructure, policy, inaccessible data and inadequate skills among librarians are some of the challenges affecting Sub Saharan institutions in relation to RDM. Das and Swapna (2021) highlighted the increasing role of libraries in providing leadership in research data management more so in policy development.

### **5.3.2.5 Library Collection and Resources**

The extent of provision of library resources and services by the university libraries considered in this study based on the perspective of the doctoral students as presented in Figure 4.20, shows that provision of updates on the latest information accessible for varied research, provision of e-databases in different areas of study, provision of print collection in different

areas of study resources, and research commons (study areas) was provided was provided adequately. Findings from doctoral students indicated that university libraries provide provision of updates on the latest information accessible for varied research (CAS) 167 (59%), provision of e-databases in different areas of study 186(65%), provision of print collection in different areas of study resources 158 (55%), and research commons (study areas) 156 (55%) was provided.

These findings concur with the librarians' findings who reported that provision of updates on the latest information accessible for varied research 24 (92%), provision of e-databases in different areas of study 24 (92%), provision of print collection in different areas of study resources 25 (96%), and research commons (study areas) 24 (92%) was offered in their university libraries (Figure 4.22).

High satisfaction with the resources and services offered by their respective university libraries is evident from the results of the survey conducted among doctorate students. In particular, the doctoral students conveyed a great deal of satisfaction with the assortment of materials—both digital and hard copy—that they could use to further their studies. This implies that the libraries are meeting the needs of doctoral students by offering a wide range of materials in an efficient manner. These libraries' dedication to fostering a supportive research environment is evidenced by the provision of research commons, study spaces designated for doctoral students, and access to a wide range of e-databases spanning the disciplines. The findings from doctoral students and librarians, demonstrate that university libraries are successfully carrying out their mandate of supporting and satisfying the needs of their doctoral students.

This finding agrees with the findings of Effiowan and Kuburat (2022) who identified library resources namely textbooks; printed and e-journals; newspapers/magazines; thesis/dissertations, research commons among others as the commonly provided sources in an academic library. Doctoral students 156 (55%), revealed that university libraries under study

provide research commons / study areas adequately. The data further revealed that 24 (92%) of the library staff reported that their universities offered research commons for doctoral students, The finding from this study is in agreement with Mandrekar (2020) who found out libraries must create a conducive environment for study in order for more users to visit the library.

#### **5.3.2.6 Research Impact Services**

The study also investigated the extent to which research impact services were offered in the selected university libraries based on the responses of the doctoral students. Their findings are outlined in Figure 4.23. H-index calculations, calculations of research impacts, altmetric training and bibliometric training were not provided in the libraries under study values of 178 (63%), 147 (52%), 192 (68%) and 160 (57%) respectively. Citation reports 73 (26% was rated neutral by the doctoral students. The findings from the librarians (figure 4.25) indicated that 15 (85%) of the library staff affirmed that their respective universities offered citation reports. The study also found that library staff 25(85%) indicated that the selected university libraries does not provide altmetric training. Further analysis revealed that H-index calculations, calculation of research impacts, and bibliometric training, are not offered in the selected university libraries as shown by 17 (65%), 15 (58%), and 14 (54%) respectively.

The doctorate students' findings indicate a sizable gap in the university libraries' offering of some advanced research support services. More specifically, the lack of services related to measuring research output and the impact of offering training in these areas is indicated by the libraries' lack of H-index calculations, citation reports, research impact calculations, altmetric training, and bibliometric training. Librarians' findings affirmed that the citation reports noted by the doctorate students as lacking appear to be available in their respective universities' citation reports. The results of the doctoral students are consistent with the majority of library

staff (85%), who acknowledge that there is a lack of altmetric training. This could be lack of staff with the necessary expertise, limited awareness of what is offered by the libraries and policy and institutional policies.

Doctoral students and librarians identified that university libraries differ in the provision of research impact services. Services like altmetric and bibliometric training are not available, even though certain fundamental services like citation reports are offered. This implies that these university libraries could be enhanced to better meet the needs of doctoral students in terms of research impact services. To address these factors, university libraries need to create awareness of available research impact services, invest on trainings bibliometrics, scientometrics, and other relevant areas and collaborate with the internal and external organizations. Corral et al. (2013) observed that library support for bibliometrics and research impact analysis was a growing area of library investment and service. Librarians can communicate and advocate for bibliometrics and altmetrics with various stakeholders, including faculties and researchers, graduate and undergraduate students, administrators, publishers and toolmakers (Onyanha, 2018).

### **5.3.3 DOCTORAL STUDENTS' SATISFACTION WITH RESEARCH SUPPORT SERVICES**

The study investigated the satisfaction levels of doctoral students with the various research support services in meeting their research information needs as presented in Figure 4.26. The study revealed that 105 (37%) and 15 (5%) of the doctoral students were satisfied and strongly satisfied with the various research support services provided in meeting their research information needs respectively. In contrast, a substantial number of students, 91 (32%), reported being neutrally satisfied. Kekana and Kheswa (2022) carried out a study on library use and user satisfaction. The study revealed that though users were satisfied with the

availability of materials and are using the materials as revealed from the study, they were not satisfied with the currency of the materials in the library. The quality and availability of research support services have a significant impact on doctorate students' academic experience. A study by Parbie et al. (2021) in Ghana showed that the doctoral students studied were not satisfied with the library services it offered, implying the need to beef up services such as RSS that academic libraries offer.

#### **5.4 RESEARCH SUPPORT SERVICES COMMONLY UTILIZED**

The second research question sought to assess the extent to which research support services are being utilized by doctoral students. In line with the utilization of RSS in the selected university libraries, Items in Part C, Q3 and Q8 (Appendix V, IX and VII) were analysed to answer this research question. The results confirmed the utilisation of a list of six various research support services and resources (instructional services, scholarly communication services, research data services, research data management, library resources and research impact management services) based on a 5-point likert scale in order to answer the research question. The findings gave an insight to the extent to which RSS is utilized or accessed by the doctoral students in the selected university libraries. The services are discussed in detail in the following section.

##### **5.4.1 UTILIZATION OF INSTRUCTIONAL SERVICES**

The extent of utilization of instructional services by doctoral students (See Figure 4.27) is as follows: advice on copyright and plagiarism and citation and referencing were utilized to a great extent as per the given values of 192 (68%) and 167 (59%). The students also used advice on literature review 85 (30%), database training 120 (42%) and research clinics or workshops 95 (34%) were provided by their university libraries to a moderate extent. Further analysis showed that data collection advice 115 (40%), data collection advice 126 (44%), advice on

research topics 145 (51%), guidance on data analysis using computer software 146 (52%), and advice on sources of funding 175 (62%) were utilized to a small extent by the doctoral students from the selected public university libraries. Interviewed librarians mentioned instructional services such as individualized research assistance, advice on plagiarism and copyright, training on how to conduct literature searches, trainings on how to do citation and referencing using Zotero software, trainings on how to access subscribed databases and research workshops and seminars to be the most utilized services and resources by the doctoral students.

Doctoral students and librarians' views concur on utilization of some of the instructional services such as advice on plagiarism and copyright and citation and referencing. However, there are some discrepancies on instructional services such as advice on literature review, database training, and research clinics or workshops where doctoral students indicated moderate usage yet librarians views indicate these as the most utilized services in the selected university libraries. The fact that doctoral students indicated moderate, small extent and not at all utilization on instructional services, points to the need for the university libraries to consider establishing target outreach and awareness initiatives to inform students about the available services.

Promoting library services can increase their usage among doctoral students. Identifying underutilized resources and understanding utilization factors can help customize instructional programs to meet students' needs. Lastly, they could collaborate with the faculty to incorporate these services into the curriculum and research activities. This confirms Helen's (2017) views that librarians should ensure that research resources and collections are both discoverable and accessible by improving research practice through teaching good information and organizational skills and offering general skills and writing workshops.

#### **5.4.2 UTILIZATION OF SCHOLARLY COMMUNICATION SERVICES**

The results depicted in Figure 4.29 show the extent to which doctoral students utilized advice on identifying credible journals 156 (56%) and on open access publications 135 (47%) to a great extent. Moreover, advice on the profiling of researchers 136 (48%), social media for research dissemination 139(49%), advice on sources of research collaboration 155 (55%), and publishing advice 166 (58%) were utilized to a small extent. Conversely, the doctoral students did not utilize publishing advice 79 (28%). Findings from the librarians indicated advice on publishing journal selection, open access publishing as some of the services mostly utilized by the doctoral students.

The findings reveal that doctoral students engage with scholarly communication services to varied degrees. The findings show that doctoral students are interested in journal selection and open-access publishing, suggesting a significant emphasis on effectively disseminating their research. Underutilized social media and researcher profiling services indicate potential areas for improvement or more outreach to educate students on the benefits of these tools and services. To enhance the utilization of scholarly communication services, university libraries should consider targeted marketing, workshops, and outreach activities to raise awareness and provide specialized assistance for these various scholarly communication services based on student needs and preferences. This study agrees with Si et al. (2019) views that librarians need to be effective in scholarly communication and other research support; continuous professional training is therefore necessary.

#### **5.4.3 UTILIZATION OF RESEARCH DATA SERVICES**

The results of the study (Figure 4.31) showed that the doctoral students 142 (48%) did not use the RDS as indicated by the values cumulatively on the specific services such as 155 (55%) of the services on guidance on the development of tools to assist researchers manage data, 130

(46%) guidance on digital curation, 124 (44%) support for data deposit in institutional repositories, and 136 (48%) guidance on how to handle and manage unpublished data.

According to the study, sizable proportion of doctoral students are not utilizing the research data services. This pattern could be caused by several factors, for example, need for more awareness of the availability of the service and limited knowledge or skills to use RDS effectively. To enhance the utilization of RDS, university libraries should create targeted marketing campaigns, workshops, and information sessions. Cox et al. (2019) revealed librarians' skills gap in providing RDS; Gao et al. (2018) underscored the importance of training librarians on RDS in this era.

#### **5.4.4 UTILIZATION OF RESEARCH DATA MANAGEMENT**

The extent of utilization of research data management by doctoral students in selected public university libraries' data output was presented in Figure 4.33. It shows that guidance on developing data management plans 155 (55%), guidance on how to use appropriate metadata 130 (46%), guidance on writing data management plans 172 (61%), guidance on provision of statistical and other data analysis support 162 (57%) and guidance on grants application 117(41%) was not utilized in the selected university libraries.

The findings provide insights into how doctoral students are engaging with RDM services. This suggests that a sizable proportion of doctoral students from the selected public universities do not take advantage of RDM services provided at the selected public universities. The findings gave a varying degree of utilization of RDM by doctoral students. This can be attributed to several reasons: students may need to be made aware of the RDM services provided and lack of knowledge and skills. Targeted marketing and outreach, and personalized training enhanced the use of RDM in university libraries. The results in this study concur with those of Cox et al. (2017) and Chawinga and Zinn (2021), who pointed out the need to continually re-train

librarians on the skills relevant to RDM and also pointed out challenges related to infrastructure, policy, inaccessible data, and inadequate skills among librarians respectively.

#### **5.4.5 UTILIZATION OF LIBRARY RESOURCES AND SERVICES**

Figure 4.35 contains findings on the extent of utilization of library resources and services by doctoral students in selected public university libraries in Kenya. The study established that doctoral student used provided e-databases resources 157 (56%), research commons/study areas 157 (54%) for doctoral students, print collection in different areas of study 171 (60%), and updates on the latest information accessible (CAS) 147 (52%) were utilized in their university libraries to a great extent.

Utilization of library resources by doctoral students indicates a positive usage for most of the services provided. This pattern can be attributed to factors such as conducive study environment, provision of adequate print and e-resources collections, and getting the latest information on information in their area of research.

The findings agree with Effiowan and Kuburat's (2022) study, which revealed that postgraduate students heavily use information resources, for example textbooks, printed and e-journals, and newspapers/magazines. Also, Mandrekar (2020) and Bangani et al. (2019) showed that these research commons were very useful to postgraduate students as they mainly visited the library to use private study space.

#### **5.4.6 UTILIZATION OF RESEARCH IMPACT SERVICES**

The study aimed to determine the extent of utilization of research impact services by doctoral students in the selected public university libraries. It was noted that the majority of the students in the designated public universities did not utilize H-index calculations 208 (73%), altimetric training 210 (73%), calculations of research impact 180 (63%), bibliometric training 170

(60%), and citation reports 127 (45%) were utilized in a small extent as indicated in Figure 4.37. According to the findings, most doctorate students did not use several research impacts services.

Lack of awareness, perceived irrelevance to their research, and competing goals throughout doctoral studies may be the reasons for the low utilization of research impact services. To increase usage, university libraries can provide targeted training and collaborate with faculty to incorporate research impact on curriculum. The findings support the view by Onyancha (2018), who argued that the need for academic librarians in the Sub-Saharan context to be skilled in metrics for example bibliometrics, webometrics, and altmetrics. Also, Cox et al. (2019) realized that the majority of the staff working in the bibliometric department of the library had yet to receive formal training in this area, with some opting for self-initiated professional development.

#### **5.4.7 LIBRARIANS OVERVIEW ON EXTENT OF UTILIZATION OF RESEARCH SUPPORT SERVICES**

The study sought the views of librarians on the most utilization or access RSS. Based on qualitative findings, the librarians indicated that most of the doctoral students access services such as instructional services, interlibrary lending, utilisation of information resources, citations and referencing software's and scholarly communication services. The findings from the librarians show that doctoral students sought and utilized diverse services from university libraries, ranging from those on access of resources, to those on scholarly communication and publishing.

The staff further observed that there had been a continued improvement in doctoral students' research success and completion rate as a result of access and utilisation of these research support services in public university libraries. However, some librarians noted that the rates

had not improved and attributed this to lack of skills, interest and capacity of students to utilise these services.

The study established that on average, the utilization of different categories of research support services assessed in this study by doctoral students in the selected public university libraries in Kenya was varied. While library resources such as guidance on the use of library collection and resources (print & e-resources) and research commons/study areas for doctoral students were utilized by the students to a great extent, scholarly communication services, instructional services and research data services were utilized only to a moderate extent while research data management and research impact services were utilized to a small extent. These findings demonstrated that doctoral students in the selected public universities had not fully exploited the diverse research support services offered by their university libraries. This could be as a result of ignorance on the services provided.

The above observation was in line with the observations made in various studies for instance Bussell et al. (2017); Ince et al. (2019); Kayongo and Helm (2010) that even though postgraduate students needed immense support from academic advisors or supervisors, many tended to ignore or belittle the support provided for their research projects by academic libraries. This observation on the other hand differed from the depiction in Malaysia where Rasul and Singh (2010) noted that majority of postgraduate students in this nation valued libraries and utilized them for different consultations and resources to a large extent. The findings of this study were however reflected in the study conducted by Rogers and Carrier (2017) which demonstrated that students were unaware of research support opportunities offered in their libraries. Kayongo and Helm (2010) also noted that adult learners generally did not seek assistance from librarians but instead, preferred seeking help from classmates or instructors.

## **5.5 STRATEGIES USED TO ENHANCE UTILIZATION OF RESEARCH SUPPORT SERVICES**

Research question three sought to establish the strategies used by university libraries to promote research support services. The research question was linked to critical theory of librarianship framework in Chapter Two (2.4.1) of the study. A question was put to library staff who provide RSS and to the university librarians to establish strategies used to enhance RSS in the selected public universities. The study sought to establish the means that university libraries are using to inform doctoral students of available and new research support services, the study assessed the skills and knowledge needed by librarians' in offering research support services (librarian empowerment) and user empowerment.

The study also sought to establish how librarians can use their librarian power to enhance the provision and utilization of research support services for doctoral students. It was found that the library staff in the selected public university libraries applied a number of strategies to promote RSS to doctoral students. Among the strategies used were the means of promoting RSS, marketing and outreach, user empowerment, librarian empowerment and librarian power.

### **5.5.1 MARKETING AND OUTREACH OF RESEARCH SUPPORT SERVICES**

The study investigated how university libraries informed doctoral students on available and new research support services. University librarians and library staff were asked how they informed their doctoral students of available and new research support services. Based on the responses of the university librarians and the library staff, the themes that emerged were: workshop; email; librarian; seminar; library website; meeting; social media; orientation event; peers, lecture; research assistance service; brochures; tutorials (offline and online) and word of mouth.

To make sure that doctorate students are properly informed about research support services, university libraries employed numerous strategies and methods to ensure that doctoral students receive information regarding research support services effectively and in a way that is consistent with their needs. The application of a multi-facet approach allows university libraries to reach out to a diverse user group and provide tailored assistance.

Delaney and Bates (2018) found marketing and increased creation of awareness on research support services as a strategic way of promoting their research support services. The findings agree with Arumuru (2015) views of using many channels to communicate with library users, such as in-person interactions, email, the internet, phone calls, newsletters and pamphlets, radio, television, etc. Moore and Singley (2019) revealed that the students in the study relied on people within their circles (peers, colleagues, advisors, etc.) to access relevant resources.

This finding aligns with my own study, which indicates that university libraries, while using various strategies to inform doctoral students about research support services, also acknowledge the significant role of peer networks in sharing information. Both studies emphasize that doctoral students are informed about research support services through multiple channels, including workshops, emails, social media, and word of mouth.

### **5.5.2 DOCTORAL STUDENTS' EMPOWERMENT**

From the findings, the librarians gave their views regarding doctoral students' empowerments. Some librarians indicated that they empowered doctoral students, and they identified the following themes: access to resources, collaboration, mentorship, publishing, research consultations and use of technology as ways which librarians empower the doctoral students so as to utilize the provided RSS in their university libraries (Figure 4.40). Librarians felt that doctoral students were empowered through the provision of continuous online and face to face instruction services on how to conduct quality research, collaborations with departments and other research scientists/organizations and providing the right and useful information and

resources based on the students' research needs so as to empower them. Different trainings and organized workshops through which the students were enlightened on access to current and relevant research information for their studies were carried out. Library instructional sessions are crucial as it equips students with the necessary skills and knowledge needed in today's digital age. Doctoral student's empowerment helps them to develop their research skills and this boosted the uptake of library resources and services by the doctoral students.

According to Vyas and Patel (2020), user empowerment is essential in the digital environment for the effective utilization of library resources and high quality research production and output. Oyieke (2015) acknowledged that library resources and library instructions alongside training programmes were major ways of empowering the users of academic libraries. Ketchum (2017) noted that by using localized models, librarians could adequately map the resources and services to research tasks or needs of a given researcher. Haddow and Mamtora (2017) also argued that training sessions, for instance, workshops or individual consultations were the most frequently used strategies for empowering researchers.

Some of the librarians indicated that they don't empower their doctoral students. From the findings, the librarians indicated that they do not feel they empower their doctoral students because they felt that their instructional services were a bit limited to in-person. Similarly, they felt that there is no formal feedback mechanism to know if they empower the students and they are too engrossed with other work hence they do not have enough time to support the students. Some of the reasons could be lack of infrastructure to provide virtual instructional services and also inadequate skills from the librarians to provide personalized instructional services to doctoral students and also librarians may not understand the needs and expectations of the doctoral students. Okonoko et al. (2022) opined that for libraries to provide good services, they must have adequate infrastructure, current library items, professional personnel, and a sound

budget. Libraries should invest more in digital infrastructure to enable digital content distribution to learners (Malabanan et al., 2021).

### **5.5.3 LIBRARIAN EMPOWERMENT**

The study assessed whether librarians in the selected public university libraries had adequate knowledge and skills needed to support doctoral students in their research. The responses of the university librarians pertaining to this issue were varied. The following themes emerged through which librarians are empowered: Collaboration; contribution to knowledge, grants and funding writing and publishing. Librarians can teach and lead workshops on research skills, information literacy, and effective use of library resources. Thus, they enable themselves to directly contribute to the development of students' research talents. Librarians can take charge of their own professional development by providing research consultations to students. In these consultations, they help students formulate research topics, create search techniques, and locate pertinent material. Librarians actively participate in the creation of knowledge by offering advice and experience.

Library professionals need to develop new skills and expertise to extend new services and realign the old ones (Cherinet, 2018; Sanjeeva & Powdwal, 2018). This study agrees with Esmailzadeh et al. (2020) who opine that librarians' competencies in providing research services, "general competencies (communication skills, professional ethics, and basic abilities), and specialized competencies (information resource retrieval and evaluation, using research software, research assistance, intellectual property literacy, scientific publication literacy, scientometrics, and altmetrics)" are the competencies required by the librarian to provide research service and advice for the researchers.

Some librarians felt that they were disempowered, and the following themes emerged: inadequate support, insufficient staff training, inadequate resources, technological challenges

and budgetary restrictions. There are a variety of intricate and multidimensional explanations for the differences in librarians' expertise and dispositions, as well as their sense of empowerment or disempowerment when it comes to assisting doctoral students with their research in particular public university libraries. Budgetary constraints, poor staff training and inadequate support results to the possibility that these libraries may not have provided enough funding for support services and librarian education. This could increase the level of difficulty for librarians to get the expertise required to properly support doctorate students. Librarians' capacity to offer the required support may be hampered by technological issues. Librarians may find it difficult to support students with their research if the libraries do not have access to current databases, information management systems, or research instruments.

The findings of this study support Ducas et al. (2020) study that opines that dramatic transformation in higher education, the ever-shifting research and scholarly landscape, and the unrelenting advances in technology have had a significant impact on the responsibilities of academic librarians. Rahman (2019) study recommended that academic librarians must have relevant digital skills and other soft skills such as leadership and managerial ones, which would help enhance meeting user needs.

#### **5.5.4 LIBRARIANS' POWER**

From the findings, librarians suggested ways they could use their librarian power to improve research support services in their library. They indicated that they would ensure collaboration with other researchers and departments in the university. Among the ways suggested is ensuring libraries are well supported financially so that they could add more research services for the students. Acquisition of new or current library materials, subscribing to the authentic journals and updating their journals and e-books databases and also creating awareness of

current information resources acquired and subscribed by libraries. Providing frequent user training and library website updates and scaling up instructional services for these students.

The desire of librarians to work together with other academics and university departments is evidence of their dedication to creating a comprehensive and multidisciplinary research environment. One way that librarians demonstrate their dedication to improving accessibility and user experience is through regular website updates and user training. The focus on funding the library also shows that people understand how important it is to have the resources to offer top-notch research services.

This study agrees with Mubofu and Mambo (2021) study that libraries should engage in acquiring, organizing, disseminating, preserving and conserving information and information resources in both print and non-print formats in an effort to meet the information demands of their patrons. In a study by Mugo and Mathu (2021) it was noted that in order to adapt to changing needs and maintain greater customer satisfaction levels, library management should create a plan for conducting frequent surveys on customer service providing studies. According to Otiike and Barát (2021) facilitating teaching and learning within the institution is one of the primary functions of academic libraries. This is accomplished by offering a wide range of reliable, current, and authoritative information resources for all academic programs. These resources support research, teaching, learning and community service for all user categories. Lang et al. (2021) highlighted the uptake of collaborations and partnerships between academic libraries and other relevant stakeholders towards providing research support services, especially in cases where such libraries did not have adequate facilities and resources. Such collaborations and partnerships according to these authors led to more effective utilization of research resources and were also a more strategic way of comprehending the research needs of students.

## **5.6 CHALLENGES FACED BY LIBRARIES IN OFFERING RESEARCH SUPPORT SERVICES**

The study findings revealed that the selected public university libraries encountered quite a number of challenges in offering research support services for doctoral students. The challenges identified included insufficiently qualified librarians needed to provide such services at the doctoral level, unavailability of doctoral students, poor coordination of the libraries with other academic departments and research organizations, poor communication and sensitization of doctoral students on the various available such services, low budgetary allocations to facilitate library activities and also limited supporting resources needed to facilitate the delivery of these services among others. The findings showed that the challenges which the said libraries faced in delivering research support services emanated not only from the university library themselves but also from doctoral students.

The outcomes of the study highlight the challenges that public university libraries face in their endeavour to provide doctoral students with effective RSS to doctoral students. Investing in professional development is imperative due to the critical shortage of skilled librarians capable of handling the complex requirements of doctoral-level research. In addition, the lack of participation from doctoral students exposes a gap that necessitates deliberate outreach and orientation initiatives to increase knowledge of accessible resources. The smooth provision of support services is hindered by a lack of coordination between academic departments, libraries, and research organizations; this highlights the significance of cooperative synergy within the academic environment. Moreover, there is a need for strong educational programs given the shortcomings in communication and awareness about library services.

These findings were in line with the observation by Ayuglah and Underwood (2019), Onyanha (2018), and Cox et al. (2019) that in many universities in developed and developing world, academic librarians and other staff were handicapped in one way or another in the provision of

some research support services such as data management and various metrics. The study findings were also consistent with the finding by Lang et al. (2021) that funding was a salient challenge that threatened the provision of these services as many academic libraries relied on or partnered with faculty and academic departments in mobilizing grants and research funding which was yet a challenge to acquire. Tenopir et al. (2017) also found that many academic libraries particularly in Africa faced serious funding shortages which adversely impacted the effectiveness and efficiency of their research support services. Rogers and Carrier (2017) also found that in many countries, students were unaware of research support opportunities offered in their libraries.

## **5.7 PROPOSED FRAMEWORK FOR ENHANCING PROVISION AND UTILIZATION OF LIBRARY RESEARCH SUPPORT SERVICES**

Following the first four objectives, it was necessary, from this study findings, to propose a framework that will enhance provision of research support in Kenyan university libraries. The framework was developed with input from the reviewed frameworks in chapter 2 (2.2.5). This research problem examined research support challenges and in equal measure provided solutions. By proposing the framework, the research provides the means to enhance provision and utilization of research support services in university libraries and information establishments. As indicated in Chapter Two section 2.2.5, this framework is based on review of different research support services models that are applied in university libraries (Santharooban, 2022, Pasipamire & Hoskins, 2019, Muzvondiwa & Marutha, 2022). Additionally, this framework reflects the fundamental and dynamic of digital environment coupled with rich technological advancements. In essence, digital technologies and applications have transformed and changed research support services in university libraries with emerging and new information products and services.

### **5.7.1 CRITICAL LIBRARIANSHIP FRAMEWORK COMPONENTS**

This proposed framework places emphasis on the research support services, power dynamics and the outcomes of utilizing RSS in university libraries: The proposed framework for enhancing library RSS (Figure 6.1), consists of variables that university libraries can use to provide research support services effective and efficient. These include research support services, power dynamics and the outcome of a process. The components are explained in detail in the next section.

#### **5.7.1.1 Research support services**

Quality and quantity of the library research support services reflects the excellence and appropriateness of the services provided, ensuring that they meet the expectations of the library users and contribute significantly to the research process. This is a crucial variable in a framework of enhancing RSS in university libraries. It focuses on making sure that library users, irrespective of their location, background, or technological proficiency, have timely and equitable access to the resources and services you offer. This entails developing a comprehensive infrastructure that allows for easy access to a diverse range of research materials, databases, and tools. The users of library must be satisfied with the services provided by the institution library and the services provided must be able to meet their information needs in the right time and in the right format. This process ensures that university libraries provide support for researchers' success by putting their changing needs and feedback at the centre of the library's mission, rather than just providing services. Table 5.1 shows the proposed framework elements for RSS.

### **5.7.1.2 Power dynamics**

Power dynamics is a critical factor in enhancing provision and utilization of RSS in university libraries. In this framework power dynamics focused on aspects such as librarian power, user empowerment and disempowerment which are crucial in the process of enhancing RSS processes in university libraries. Recognizing and understanding these dynamics is necessary for designing and implementing effective strategies to improve research support services. These dynamics are discussed in the next section.

#### ***User empowerment***

Doctoral students can be empowered by providing tailored library resources and services that meet their specific needs. Librarians can provide workshops and individual consultations on topics such as literature reviews, data analysis, and scholarly writing, preparing students to navigate the complexities of doctoral research. Targeted research support services will motivate library users to optimize the usage of library resources and services.

#### ***Librarian power***

Librarians can use their "librarian power" to build strategic collections that will improve research support services. The proposed framework has recognized librarian power as one of the key critical success factors to enhancing provision and utilization of RSS in university libraries. Librarians support is the greatest asset in the universities, and they need to be competent to ensure satisfactory service to researchers. Librarians' skills and competencies highlights the crucial skills and competencies that librarians require. Training and development of these librarians should be prioritized for them to remain relevant and deliver effective research support.

Librarians are using the skills learned to find and evaluate multiple kinds of information, familiarity with the research process, commitment to the scholarly and research life cycle. Continuous development is essential in the dynamic and ever-changing world of libraries, where changes in scholarly communication, technological advancements, and user needs demand a proactive approach to staying current. The framework seeks to provide library employees with the tools they need to apply best practices, adjust to new challenges, and significantly improve research support services.

### ***Promotional Techniques***

In the proposed framework, promotion techniques encompass actively raising awareness and visibility of research support services for doctoral students in university libraries. It involves communicating with students about available resources, workshops, and librarian expertise via targeted channels such as social media, targeted emails, workshops, and library tours. Libraries creates promotional campaigns that highlight specialized databases or research workshops tailored to the needs of doctoral students. Marketing and outreach are an essential component of this proposed framework.

Library users need to get acquainted with all the services provided by the library. The primary objective of this component is to strategically promote and disseminate the library's resources, services, and expertise to the academic community. The study found out that some of the doctoral students are unaware of the research support services and facilities that the library offers. By implementing a robust marketing and outreach plan, the library can strengthen its relationships with its user community, increase its visibility, and ensure that researchers are aware of the valuable support services it provides.

### ***Information literacy skills development***

Doctoral students must develop their information literacy skills in order to navigate the complex scholarly landscape, critically evaluate information, and ethically use information responsibly. University librarians can improve their research support services tremendously by integrating technology. Using digital libraries and online databases is a crucial strategy that gives researchers round-the-clock access to enormous collections of scholarly resources, including ebooks, journals, articles, and research data. Additionally, search engines and discovery tools can be used to enhance search capabilities and enable effective information retrieval through the use of advanced options, filters, and keywords. These developments increase the productivity and efficiency of research by enabling researchers to find pertinent information fast and efficiently.

### **5.7.1.3 Research outcomes**

Research outcomes such as user satisfaction levels, optimal usage of research support services, information literacy skills development and promotional techniques are vital components of a framework for enhancing research support services.

#### ***User satisfaction levels***

User satisfaction is an important metric for evaluating the effectiveness and quality of research support services offered by university libraries. For libraries to support researchers effectively, they must determine the type of support services their community requires. Assessment of researchers' needs will help academic libraries to improve the quality of the research services they render, which could positively impact researchers' outputs and the consequent establishment of emerging researchers. Doctoral students have diverse support needs that not only depend on their disciplines, but the stage they are in their research projects. This study found that participating libraries did not assess the level of doctoral students' empowerment with

the research support services mostly due to a lack of established frameworks for measuring the impact of the services offered, inadequate competent staff and also, most doctoral students used research support services almost at the tail end of their research work.

### ***Optimal Utilization of Research Support Services***

It indicates the degree to which doctoral students take full use of the support services provided. Tracking service usage provides levels of utilization which helps librarian to allocate resources where they are most needed. It also reveals service gaps or underutilized service or resources which the can lead the librarian to create targeted interventions to promote more efficient utilization of resources and services. This framework proposes that librarians need to monitor the usage of RSS in their respective universities so as to make informed decisions when they are allocating the resources.

#### **5.7.1.4 Enhanced Research Support Services**

The proposed framework provides a structured approach that will guide libraries to improve their library research support services for doctoral students in their respective universities. Key components have given insights on what the libraries should do so as to provide effective and efficient support to the doctoral students. Librarian and doctoral students are empowered by providing tailored support that meet the unique and diverse needs of doctoral students and provide guidance throughout the research life cycle. Doctoral students are reskilled to conduct quality and visibility of research output and to hand the information landscape. The enhanced research support build relationships by fostering the culture of collaboration within the universities. Lastly is continuous evaluation and assessment mechanism that will monitor the effectiveness and the impact that RSS has on doctoral student's research endeavours.

Table 5. 1: Proposed framework components for Library Research Support Services

Research support services	Evaluation Metrics
Instructional Services	<ul style="list-style-type: none"> <li>• Learning outcomes</li> <li>• Assignments</li> <li>• Quality of research papers</li> </ul>
Scholarly communication services	<ul style="list-style-type: none"> <li>• determine where to publish their final research results.</li> <li>• determine predatory journals.</li> <li>• Research dissemination</li> <li>• use altimetric to disseminate.</li> <li>• open access publications</li> </ul>
Research data services	<ul style="list-style-type: none"> <li>• Sharing research findings via repository</li> <li>• Depositing research Data on the repository</li> </ul>
Research data management services	<ul style="list-style-type: none"> <li>• identify and apply research grants</li> <li>• write a data management plan</li> </ul>
Library resources	<ul style="list-style-type: none"> <li>• Usage statistics/ COUNTER usage reports</li> <li>• Ezproxy logs</li> <li>• Publisher/Institutional based downloads</li> </ul>
Research impact management services	<ul style="list-style-type: none"> <li>• Use metrics to decide where to publish</li> </ul>

## 5.8 SUMMARY

This chapter has discussed the major findings of the study on how a critical librarianship approach can enhance research support services in selected public university libraries in Kenya. The study aimed to investigate the research support services currently offered, their utilization by doctoral students, strategies used to promote these services, challenges experienced by libraries, and how a critical librarianship approach can enhance these services. The interpretations and explanations are supported by existing literature, survey questionnaires and interview data. The study adopts a pragmatic ontological world view and a mixed methods research approach.

The chapter provides thematic discussions and interpretations of the findings for each research question. It also provides insights into the state of research support services in public university libraries in Kenya and recommendations for improving them through the adoption of a critical

librarianship approach. The chapter concludes by highlighting the significance of the study and its implications for university libraries in Kenya.

## CHAPTER SIX

### SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 INTRODUCTION

This chapter presents the summary of the findings, conclusions and recommendations. The purpose of the summary and conclusion chapters is to consolidate all the research threads and provide recommendations for future research (Denscombe, 2017). The entire study is divided into six chapters. The general aim of the study was to investigate how a critical librarianship approach could enhance research support services amongst doctoral students in selected public university libraries in Kenya with a view to proposing a framework that will enhance research support services in university libraries in Kenya. A mixed method approach in a convergent parallel design was used, and it sought to answer the following research questions.

- i. What kinds of research support services are currently offered for doctoral students in selected public university libraries in Kenya?
- ii. To what extent are the research support services utilized by doctoral students in selected public university libraries in Kenya?
- iii. Which strategies are used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya?
- iv. What challenges do libraries experience when offering research support services for doctoral students in selected public university libraries in Kenya?
- v. How can a critical librarianship approach enhance the RSS in university libraries in Kenya?

To answer these questions, data was collected at eight university libraries from chartered public universities as of July 2020. Universities were selected based on the former Kenyan provinces (that is one university per province to ensure equal representation was achieved) and PhD enrolment rates versus graduation rates were also in the selection considered. Based on the

second criteria of selection (enrolment rates versus graduation rates), Manderu University was replaced (no PhD enrolment by the time the study was being carried out) and two universities were picked from Rift Valley province because of its wide geographical region. Face-to-face interviews were used for key informants (university librarians) and questionnaires for students and librarians providing RSS. All the data collected was analysed using SPSS version 20 and ATLAS TI software.

## **6.2 SUMMARY OF RESEARCH FINDINGS**

As presented in the previous chapters, the study was grounded on five objectives. In this foregoing section, the researcher gives a summary of the study findings based on the research questions:

### **6.2.1 WHAT KINDS OF RESEARCH SUPPORT SERVICES ARE CURRENTLY OFFERED FOR DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA?**

The first research objective was to examine the existing research support services for doctoral students in selected public university libraries in Kenya. The study found that the research support services provided in the selected public university libraries entailed various activities, services and products availed towards not only meeting the research needs of the students throughout the entire research cycle but also fulfilling the universities' research goals. The study established that the selected public university libraries offered a range of research support services for doctoral students. Instructional services, scholarly communication services, research data services, research data management, library resources and services and research impact services were provided in the selected public university libraries to a varying degree. The researcher noted that while diverse research services were offered in the selected public

university libraries, the extent of provision differed from one service to the other. The summarized findings are as follows:

From the viewpoints of doctoral students and librarians, the study assessed the availability of instructional services in selected public university libraries. Both respondents indicated that service like copyright and plagiarism advice was adequately provided. Notable gaps were identified in services like advice of research proposal, source of funding opportunities, data analysis, data collection, and advice on research topic which were inadequately provided. By contrast, doctoral students indicated that citation and referencing, database training, advice on literature review, and research clinics or workshops were not provided, and librarians views showed that they were provided. Figures 4.8 and 4.10 show the overall views of doctoral students and librarians on the extent of the provision of instructional services.

The study assessed the extent of the provision of scholarly communication services in selected public university libraries. Advice on sources of research collaboration, identifying credible journals and open access publication was adequately provided according to doctoral students. Profiling of researchers, advice on social media use for research dissemination and publishing advice on the other hand, were perceived as the least and neutral offered respectively (Figure 4.11). The perspectives of library staff (Figure 4.13) revealed a positive alignment with student expectations, with all staff stating that their libraries provided advice on credible journals and open access publications, sources of research collaboration, social media for research dissemination and researcher profiling.

The study assessed the extent of provision of research data services in Kenyan public university libraries as perceived by doctoral students and library staff and it revealed significant gaps and strengths. The doctoral student's perspective (Figure 4.14) revealed that data deposit in institutional repositories, advice on handling and managing unpublished research data and technical aspects of digital curation were inadequately provided. Notable, the views of library

staff (Figure 4.16) affirm the unavailability of services for instance assisting with data deposit in institutional repositories, advice on managing unpublished research data and guidance on digital curation.

The study examined the extent of the provision of research data management services in selected public university libraries. Views of doctoral students and librarians were sought. Doctoral students' (Figure 4.17) and librarians (figure 4.19) views indicated that grants application, guidance on developing data management plans, provision of statistical and other data analysis support, guidance on how to use appropriate metadata, and guidance on writing data management plans were inadequately offered service in the selected public university libraries.

Based on the responses of the doctoral students, library resources and services were the leading research support services provided. Figure 4.20 shows that library resources and services were the only research support services offered adequately in these libraries. In the selected public university libraries, provision of updates on the latest information accessible for varied research, provision of e-databases in different areas of study, provision of print collection in different areas of study resources, and research commons (study areas) was provided were provided adequately. Figure 4.22 shows librarians' feedback to the questions on the provision of library resources and services in their respective universities. Librarians indicated that their respective university libraries provided updates on the latest information accessible for varied research, provision of e-databases in different areas of study, provision of print collection in different areas of study resources, and research commons (study areas) was provided.

The study investigated the extent to which research impact services were offered in the selected university libraries, drawing insights from both doctoral students' and librarians' perspectives. Doctoral student's insights (Figure 4.23) indicated that H-index calculations, citation reports, calculations of research impacts, altimetric training and bibliometric training were offered

inadequately. Librarians' findings (Figure 4.25) indicated that their respective universities offered citation reports 15 (85%). The majority of the library staff 25 (85%) indicated that the selected university libraries does not provide altmetric training, H-index calculations, calculation of research impacts, and bibliometric training are not offered in the selected university libraries.

Overall, the study found that the doctoral students' level of satisfaction (Figure 4.26) with the research support services provided in meeting their research information needs was varied, though a larger number of these students were either somewhat satisfied and satisfied with the said services as indicated cumulatively by values 91 (32% and 120 (42%) respectively.

### **6.2.2 TO WHAT EXTENT ARE THE RESEARCH SUPPORT SERVICES UTILIZED BY DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA?**

The second research objective of the study sought to assess the extent of utilization of RSS by doctoral students in selected public university libraries in Kenya. The study established that on average, the utilization of different categories of research support services assessed in this study by doctoral students in the selected public university libraries in Kenya was varied. RSS was put in categorise of instructional services, scholarly communication services, research data services, research data management, library resources and services and research impact services.

With regard to instructional services offered, advice on plagiarism and copyrights and citation and referencing was the most highly utilized instructional service by the doctoral students in the select university library while the least used instructional services were advice on sources of funding opportunities, advice on research proposal, data collection advice, advice on research topic, and guidance on data analysis using computer software.

In the scholarly communication services categories, advice on the identification of credible journals, and open access publications was utilized to a great extent. Profiling of researchers, social media use for research dissemination, advice on sources of research collaboration and publishing advice were utilized to a small extent.

Overall analysis indicated that research data services was not utilized by doctoral students, the study established that doctoral student in the selected public university libraries did not utilized services on guidance on the development of tools to assist researchers manage data, guidance on digital curation, support for data deposit in institutional repositories, and guidance on how to handle and manage unpublished data. For the case of RDM services, the results indicated RDM services such as guidance on developing data management plans, guidance on how to use appropriate metadata, guidance on writing data management plans, guidance on provision of statistical and other data analysis support, and guidance on grants application were not utilized.

Overall findings on library resources and services showed that a sizable proportion of doctoral students use the resources and services. The study established that doctoral student used library collection and resources (print & e-resources) in different areas of study, research commons/study areas and updates on the latest information accessible for their research are utilized in their university libraries to a very great extent. From the findings on utilization of research impact services, the study found that H-index calculations, altmetric training, calculations of research impact, bibliometric training, and citation reports were utilized by the doctoral students to a small extent in the selected public university libraries.

According to the librarians, the most commonly used research supported services in the selected public university libraries were citation and referencing services, information literacy training, print and e-resources resources (books and databases), information search and

retrieval support, research project/thesis editing, formatting and binding, publishing and post-publishing guidance, use of digital library and repositories.

### **6.2.3 WHICH STRATEGIES ARE USED BY UNIVERSITY LIBRARIES TO PROMOTE RESEARCH SUPPORT SERVICES FOR DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA?**

The third research objective was to establish the strategies used by university libraries to promote research support services for doctoral students in selected public university libraries in Kenya. It was found that the library staff in the selected public university libraries applied several strategies to promote RSS to doctoral students. Among the strategies used were the means of promoting RSS, user empowerment, librarian empowerment and librarian power.

Assessment showed that the selected public university libraries used a variety of channels to inform the doctoral students on the available and new research support services. Among the most commonly used ways and channels were the university corporate and library websites, social media platforms, students' personal and group email alerts, library notice boards, posters and brochures, word of mouth from other students, supervisors and also instant messages. Other means were class representatives, memos and emails sent through the relevant teaching departments, display of new research resources in the libraries, organized research workshops and trainings, orientations and also through one-on-one communications with library staff.

The study found that university library staff used a number of strategies to empower doctoral students with research support services. The highlighted strategies included the provision of online and face-to-face instruction services on how to conduct quality research, collaborations with research scientists and providing the right and useful information and resources based on the students' research needs. The staff also carried out different trainings and organized workshops through which the students were enlightened on how they could easily access

current and relevant research information for their studies. Sharing current publications with students whenever they required them was also another strategy used according to the library staff.

The study assessed whether librarians in the selected public university libraries were competent and empowered to provide adequate support to doctoral students in their research journey. The responses of the librarians pertaining to this issue were varied. According to the findings, librarians can directly contribute to the development of students' research talents by teaching and leading workshops on research skills, they can take charge of their own professional development by providing research consultations to students by formulating research topics, creating search techniques, and locate pertinent material.

The suggested ways through which librarian power could be used to enhance research support services for doctoral students among the selected public university libraries included creating awareness of current information resources acquired and subscribed by libraries, setting up discussions/conferencing areas within the libraries, subscribing to authentic journals and updating their journals and e-books databases, acquiring new or current library materials, carrying out frequent user training and also through library website updates. Scaling up instructional services, librarians exercising their research expertise to outline discipline-specific research resources, selecting research champions for easy communication on research support to peers and also promoting career counselling were also the other ways proposed.

#### **6.2.4 WHAT CHALLENGES DO LIBRARIES EXPERIENCE WHEN OFFERING RESEARCH SUPPORT SERVICES FOR DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA?**

The fourth research objective was to analyse the challenges faced by libraries in providing research support services. The study found that the selected public university libraries were

confronted by several challenges in the course of providing research support services for doctoral students. Among the major challenges confronting these libraries as identified by the study were poor communication and sensitization of doctoral students on the various available such services, inadequate number of staff qualified to provide such services at the doctoral level, unavailability of doctoral students, timing of training sessions considered unfriendly by the students and poor coordination of the libraries with other academic departments and research organizations. Restricted access to some crucial electronic information resources, limited varieties of information and research resources, low budgetary allocations to facilitate library activities and limited supporting resources needed to facilitate the delivery of these services including ICT resources, operational (physical) space and infrastructure were also identified.

Other challenges faced pertained to fewer training sessions and limited areas of training, instability of the information and library systems, lack of data analysts to guide students on the use of data analysis tools as well as the lack of need assessment reports from students to tailor the services based on students' research needs. Students' lack of interest in comprehensive and advanced research support services, their negative attitude towards libraries and librarians and waiting up to the tail end of completing their research work to seek such services were underlined as major challenges the libraries faced. These, coupled with students' limited literacy skills, the lack of dedicated e-databases for some of the doctoral courses and students' lack of consistency in attending research support-related trainings watered down the effectiveness of the research support services offered in the selected public university libraries. Several measures to address the identified challenges were also suggested. The leading suggested measures were the calls for more and regular trainings for students, enhanced capacity building for library staff so that they can meet students' needs, the creation of awareness and sensitization of doctoral students on the research support services provided as

well as acquiring the relevant and up to date research resources needed by the students. Engaging the students in scheduling the training, recruiting more library staff to handle regular training and other research support consultations, improving the communication of the available services to the students, timely and adequate subscription to relevant journal repositories and databases with guidance from doctoral tutors were also underscored.

Further measures related to needs assessments towards offering tailor-made research support services, increasing funding to the library to upscale staff performance and research support services offered, the recruitment of data analysts/statistician to guide students, acquiring the resources needed to facilitate the delivery of the said services and also expanding the existing research support programmes offered among other measures, were also recommended.

### **6.3 CONCLUSION**

This section presents the conclusions drawn from the study's findings, in line with the research questions. Based on the findings presented earlier, the researcher concluded the following:

The findings revealed that research support services provided by the selected public university libraries entailed any form of guidance, support or assistance given by libraries to meet the research needs of various users and also to support the realization of universities' learning and research goals. The study concluded that the selected public university libraries offered a broad range of research support services for doctoral students ranging from instructional, scholarly communication services to library resources, research data services, research management services and research impact services. Nonetheless, there were considerable differences in the extent to which the diverse individual research support services under these main categories were offered in these libraries.

The study concluded that generally, library resources were the most offered research support services for doctoral students followed by scholarly communication services and research data

services respectively. Research impact services were the least offered in these selected university libraries. There are notable gaps in critical areas such as data analysis guidance, funding sources, and data collection, indicating the need for a more holistic and standardized approach to providing RSS in public university libraries. The study emphasizes the importance of a paradigm shift toward critical librarianship principles in the provision of research support services, advocating for inclusivity, responsiveness and equity. The varying levels of satisfaction among doctoral students highlight the importance of creating services that are not only available but also meet the diverse expectations of doctoral students.

RSS was classified into instructional services, scholarly communication services, research data services, research data management, library resources and services, and research impact services. It is noticeable from the overall findings of this study that there were significant differences in the utilization of research support services by doctoral students across the selected public university libraries. The study concluded that library resources were utilized by these students to a great extent, instructional services, scholarly communication services and research data services to a moderate extent while research data management services and research impact services were utilized to a small extent.

The extent of utilization of the diverse research support services by doctoral students in these libraries differed from one individual service to another. Some greatly used services include plagiarism and copyright advice, identification of credible journals, open access publications, and library resources and services, such as the print and electronic collection, research commons/study areas, and updates on the latest research information available. Research data services, researcher profiling, social media for research dissemination, publishing advice, and research impact services are used to varying degrees.

It appears that doctoral students at the public university libraries that were selected for this study are not making full use of the research support services that are offered to them. There

could be various reasons for this, for example lack of knowledge about the services, insufficient time to utilize them, or the perception that the services do not apply to their research.

The findings highlight a diverse range of effective strategies, such as RSS promotion channels, user empowerment initiatives, library staff empowerment and the use of librarians' powers. The libraries' commitment to disseminating information about existing and new research support services is evident through their use of multiple communication channels, both digital and traditional. This shows a strategic alignment with the digital age, leveraging platforms namely, university websites, social media, and email alerts, while also recognizing the enduring effectiveness of traditional methods, namely library notice boards and word of mouth.

The study concluded that library staff in the selected public university libraries applied a number of strategies to empower doctoral students with research support services. The study highlights the potential for librarians to contribute significantly to the development of doctoral students' research skills through workshops, consultations, and staying up to date on current information resources. Moreover, there were several ways through which librarian power could be used to enhance research support services for doctoral students among the selected public university libraries. Librarians can actively support doctoral researchers through continuous professional development.

The investigation on enhancing providing, utilization and strategies for promoting research support services to doctoral students reveals multiple obstacles. The challenges faced by doctoral students and university libraries were identified in the study. The challenges identified include communication gaps, inadequate staffing, limited resources, and disengaged students. Libraries face challenges in effectively communicating available research support services to doctoral students. Students' negative attitudes and limited literacy skills, prevent optimal utilization of these services. Inadequate staffing, budgetary constraints, and limited resources

further complicate research support delivery, emphasizing the need for strategic interventions to improve capacity, streamline communication, and improve resource allocations.

## **6.4 RECOMMENDATIONS**

This section gives recommendations for practice and further research based on the research objectives and the conclusion. Taking into consideration the findings, this study proposes recommendations to enhance the provision and utilization of RSS by doctoral students in public universities of Kenya.

### **6.4.1 RECOMMENDATIONS ON IMPROVING PROVISION OF RESEARCH SUPPORT SERVICES**

The study examined that, while the selected public university libraries provided a variety of research support services for doctoral students, the extent of provision varied across different categories of services. Instructional services, such as copyright and plagiarism advice, as well as citation and referencing, were the most adequately provided. However, there were significant gaps in the provision of other services, namely data analysis guidance, funding sources, and data collection. Libraries also faced challenges when it came to providing services for example research data management, research impact and scholarly communication.

Several recommendations can be made to improve the provision of research support services in selected public university libraries. First, libraries should conduct regular outreach to doctoral students to inform them of available services and encourage them to use them. Second, university libraries should create and deliver targeted workshops and consultations on funding sources, data collection and analysis, as well as providing assistance to doctoral students in qualitative and quantitative methodologies. Third, libraries should develop online resources for doctoral students to learn about research methods, like tutorials and guides. Fourth, libraries

should make it simple for doctoral students to find and use research support services by clearly labelling and publicizing them on the library's website and in physical spaces. Fifth, libraries should collaborate with faculty to incorporate research assistance services into the curriculum.

#### **6.4.2 RECOMMENDATIONS ON ENHANCING UTILIZATION OF RESEARCH SUPPORT SERVICES**

Findings from this study suggest the need for important recommendations in university libraries in Kenya and related contexts. Specifically, recommendations from this study are: Expand and improve training programs: findings from this study showed that doctoral students often lack the necessary research skills and knowledge required to conduct research effectively. Doctoral students need a wide range of research skills, including data analysis, research methodologies, and academic writing to help them develop the required skills. Institutions should offer comprehensive training programs that cover all these areas and provide opportunities for hands-on learning. These programs should also be regularly evaluated and updated to keep up with new research trends and techniques.

Create a supportive research culture: A supportive research culture is crucial for the success of doctoral students. Although university libraries in this study reached out to their doctoral students through online and offline means, there is a need for more. Universities can foster this culture by organizing regular research seminars, conferences, and workshops that bring together researchers from different disciplines and stages of their careers.

Scholarly communication services should be expanded to better meet the diverse needs of doctoral researchers, with a particular focus on funding opportunities, grant applications, and social media for research dissemination. To address gaps in research data services and management, comprehensive support should be provided for data deposit, and technical aspects of digital curation. Finally, the study recommends a comprehensive review of research impact

services, including training for altmetric and bibliometric, to better align with the evolving needs of doctoral students.

### **6.4.3 RECOMMENDATIONS ON STRATEGIES USED TO ENHANCE RESEARCH SUPPORT SERVICES**

The study highlights effective strategies that can be used to enhance the provision and utilization of RSS. It was found that the library staff in selected public university libraries used various strategies to promote RSS to doctoral students. The strategies include marketing and outreach strategies, user empowerment, librarian empowerment and librarian power. Recommendations are discussed in the next section.

#### **6.4.3.1 Recommendations on Marketing and Outreach of Research Support Services**

Libraries should adopt a user-centric approach to effectively promote research support services. It's important to prioritize the use of technology and constantly seek out new platforms and tools that appeal to the tech-savvy doctoral student population. Libraries should invest in easy-to-use interfaces, mobile apps, and interactive online resources to improve accessibility and engagement.

To increase awareness about the wide range of available resources, libraries should consider implementing targeted campaigns. This can be done by organizing webinars, virtual orientations, and interactive online sessions to showcase the full spectrum of services. By tailoring communication to the specific needs and preferences of doctoral students, libraries can create a more impactful and personalized engagement strategy.

#### **6.4.3.2 Recommendations on User Empowerment**

User empowerment initiatives should go beyond traditional instructional services. They should include collaborative learning and skill-building opportunities. Libraries must actively involve doctoral students in co-creating content, workshops, and training modules based on their evolving research needs. Additionally, encouraging a culture of peer-to-peer learning through virtual communities or discussion forums can further enhance the collaborative learning environment. The study suggests that doctoral students should be motivated to explore and take advantage of the diverse research support services offered by their university libraries, given the extensive nature of their research assignments. It is recommended to foster a culture shift that encourages students to inquire and be proactive in utilizing the available resources.

The study also recommends that doctoral students should keep tabs with their university libraries so that they can receive in real time, updates and any other relevant communications about the research support services available. They can do so by plugging to the various communication channels used by the university libraries in liaison with their departments and ensuring that they provide contacts through which they can be reached easily.

The study also recommended the active engagement and cooperation of doctoral students with library staff so that proper scheduling of research support related trainings and workshops can be achieved. Also, it was recommended that doctoral students should acquaint and exploit research support services provided by their university libraries right from the start of their studies rather than utilizing them when it is too late in to their research. The study further recommended that doctoral students should consistently attend research support related trainings so that they can benefit from the consistency of content covered in different trainings.

#### **6.4.3.3 Recommendations on Librarian Power and Librarian Empowerment**

Implement targeted training programs for librarians: Equipping librarians with the necessary skills to bridge identified gaps, particularly in data collection, data analysis and funding sources guidance. The study recommends that librarians collaborate with doctoral students in order to better understand student needs and expectations.

The study recommends that university libraries through the support of university management should select and recruit an adequate and competent number of library staff and other technical experts namely data analysts/statisticians who can adequately guide doctoral students even on an individual basis. The study also recommends that the management of university libraries should expose these staff to regular and continuous training and other forms of capacity building to ensure that they are conversant with emerging trends in the field of research support services and information and library services and systems in general. This capacity-building initiatives should be accompanied by incentives meant to motivate them to meet the research needs of students.

The study further recommends that university library staff should carry out a regular needs assessment to establish the research needs of doctoral students that have been met and those not met so that they can adequately design their research support services/programmes. This can be achieved through user satisfaction surveys and seeking the day-to-day feedback of these students using various communication and feedback channels for example social media, emails and face-to-face meetings.

The study also recommended that university library staff vigorously carry out awareness creation and sensitization campaigns so that doctoral students are made aware of the available research support provided, how to get different services and the importance of such services. This can be undertaken during orientation sessions, trainings and workshops, direct

communications to students using various channels and also liaising with relevant departments to create awareness.

The study recommends that university libraries should in liaison with doctoral tutors/lecturers make timely and adequate subscriptions to relevant and a wide variety of journal repositories and databases so that doctoral students can access a variety of research information resources. The study also recommended that in scheduling research support-related trainings and workshops, university library staff should consult with students to reach a consensus on the approach timing.

The study recommends that university libraries should develop online communities for easier distribution of research support services to students and forge partnerships with other research-based organizations. In this way, these libraries can create direct links with schools for frequent exchange of information and secure slots for students to present their research at international conferences and attend regional workshops.

The study also recommends that university libraries should have flexible operating hours to accommodate as many students as possible and should also upgrade available ICT resources to allow remote access of research support services. The study also recommends that in consultation with the university management, university library management should push for a formalized information literacy training for doctoral students by incorporating it in to the curriculum.

#### **6.4.3.4 Recommendations on Recruitment of staff**

The study recommends that the management of universities should offer the needed support to their university librarians and other library staff so that they can effectively discharge their mandate in providing research support services for doctoral students. The management support can be in terms of allocating more resources to university libraries, engaging the university

librarians and library staff in key decision-making processes that affect their efficiency and offering clear policy and guidelines on research support for doctoral students. The university management through different representatives and directorate communications plays a vital role in sensitizing and motivating doctoral students to exploit various research support provided. They can also create networks with other research-based organizations and agencies that collaborate with their university libraries and also the doctoral students as researchers in different projects. This way, they can secure different opportunities for their students.

#### **6.4.3.5 Recommendations on Government Bodies**

The study recommends that the government through the Ministry of Education and Commission for University Education should increase budgetary allocations to public universities to enable university management to invest in the provision of crucial research support services needed across all levels of study but more particularly, the doctoral level. The management of the universities on the other hand should diversify their revenue streams so that they can raise substantial amount of funds needed to complement the revenues from the government in order to equip their university libraries with the resources needed to support efficient research support services. Given the role of universities in research and development, the government through the relevant bodies could formulate a policy or framework recognizing the role of university libraries and to guide their provision of adequate research support services in all institutions of higher learning and more particularly, public universities.

#### **6.4.4 RECOMMENDATIONS ON CHALLENGES OF PROVIDING AND UTILIZING RESEARCH SUPPORT SERVICES**

Effective communication between libraries and doctoral students is crucial. To improve communication strategies, it is important to establish regular feedback mechanisms like

surveys and focus groups. These methods can help libraries understand the students' preferred communication channels and formats. Libraries must invest in comprehensive and ongoing communication campaigns. Both traditional and digital platforms should be utilized to ensure that doctoral students are well-informed about the available research support services. Additionally, promoting a culture of engagement and collaboration through initiatives like student advisory committees or forums can bridge communication gaps and create a sense of ownership among doctoral students.

To address the challenges caused by inadequate staffing and limited resources, it is crucial to increase institutional support and advocacy. Libraries can work with university administrations to advocate for more staffing and budgetary allocations specifically aimed at improving research support services. Collaborating with external stakeholders like research organizations or funding bodies can also create opportunities for resource-sharing and collaborative initiatives. Additionally, strategic capacity-building programs for library staff, including training on the latest technologies and methodologies, can empower them to effectively meet the evolving needs of doctoral students.

#### **6.4.5 PROPOSED FRAMEWORK FOR ENHANCING RESEARCH SUPPORT SERVICES IN UNIVERSITY LIBRARIES**

The study's findings indicate that university libraries should establish a framework that enhance provision and utilization of research support services. The proposed framework consists of vital components based on the study's conclusions, recommendations, and discussions as shown in Figure 49. The suggested framework provides a structured and dynamic approach to improve research support services (RSS) in Kenyan university libraries, based on chapter five's results, which identified major gaps and issues in their provision and utilization. The framework is

informed by empirical reviews of existing models obtained during the study and a review of current models (as discussed in Chapter Two, section 2.2.5).

The findings revealed that doctoral students often find current research support services lacking, especially in terms of accessing specialized resources and receiving tailored assistance for their specific research needs. A significant number of students were also unaware of the full range of services available, even though librarians reported providing these services. These insights are integrated into a proposed framework that prioritizes user empowerment and effective promotional strategies. The framework seeks to close the gap between the services offered and students' awareness by enhancing both the visibility and accessibility of these services.

The study highlighted the importance of librarian skills in enhancing research support services. Continuous professional development was identified as a crucial factor in enabling librarians to offer targeted and high-quality research support. The framework addresses this by recommending ongoing training programs to enhance librarians' capabilities in providing specialized services, especially in scholarly communication, research data management, and information literacy.

The results in Chapter Five suggest that services should prioritize measurable objectives, such as improving user satisfaction, service usage, and information literacy skills. The proposed framework includes specific assessment measures to evaluate the impact of RSS, ensuring that services meet the growing needs of doctoral students.

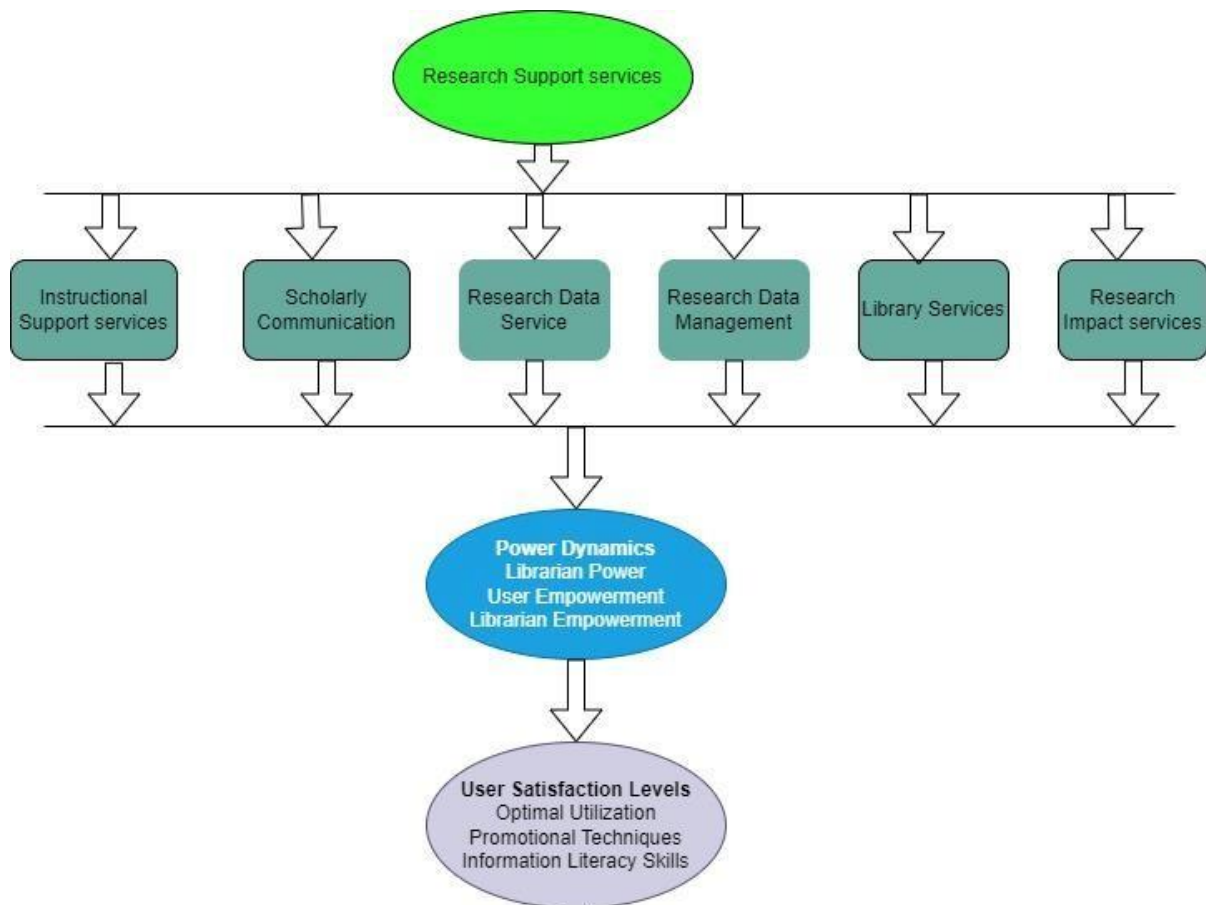


Figure 6.1: Proposed Framework for the Provision of Research Support Services for Doctoral Students

Source: Researcher (2024)

## 6.5 SUGGESTIONS FOR FURTHER AREAS OF STUDY

The study investigated how a critical librarianship approach could enhance research support services among doctoral students and proposed a framework that can enhance RSS in university libraries in Kenya. Enhancement of RSS can be influenced by various extraneous factors outside the scope of this study. Further research is therefore necessary to provide a holistic perspective of research support services in university libraries.

1. The study suggests that a study that considers both public and private universities in the country could be undertaken to identify the similarities and differences in the services provided, the extent of utilization and the challenges faced.

2. There is need to conduct a study to examine the application of critical librarianship principles in the provision of research support services in university libraries in Kenya. This study could explore the extent to which critical librarianship is integrated into library policies, practices, and services and its impact on the success of doctoral students.
3. Further studies could investigate the use of technology in the provision of research support services in university libraries in Kenya. This study could explore the effectiveness of different technologies in enhancing research support services and the challenges faced in their adoption and implementation.
4. Also, a longitudinal study could be undertaken to assess the impact of research support services on the research productivity and success rates of doctoral students in Kenya. This study could examine the relationship between the utilization of research support services and research outcomes namely, publications, citations and completion rates of doctoral students.
5. Effectiveness of the proposed framework. The output of this study is a framework which enhances utilization of RSS, thus research can be conducted to validate the framework.
6. Future research should further explore social justice, power, and privilege within Critical Librarianship.
7. Future research could examine the impact of training programs on librarians' ability to deliver effective research support services.

## **6.6 SUMMARY OF THE CHAPTER**

This chapter summarized all the chapters of this study, including the findings, the conclusions and the recommendations. This study investigated how a critical librarianship approach could

enhance research support services among doctoral students in selected public university libraries in Kenya and proposed a framework that could enhance the utilization of research support services. Critical Theory of Librarianship. A convergent mixed method was used in this study. The data in this study was collected using questionnaires and semi-structured interviews. Quantitative results were analysed using the SPSS and qualitative ones analysed thematically using the ATLAS.TI software. The major findings were public university libraries offered a range of research support services, the level of utilization of research support services assessed in this study was varied, university libraries applied a number of strategies to promote RSS, and that public university libraries were confronted by several challenges in the course of providing research support services. Recommendations were put forward to enhance RSS in university libraries.

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## APPENDICES

### APPENDIX I: FULLY FLEDGED PUBLIC UNIVERSITIES IN KENYA

#	University	Date of establishment
1	University of Nairobi	1970
2	Moi University	1984
3	Kenyatta University	1985
4	Egerton University	1987
5	Jomo Kenyatta University of Agriculture & Technology	1994
6	Maseno University	2001
7	Chuka University	2007
8	Dedan Kimathi University of Technology	2007
9	Kisii University	2007
10	Masinde Muliro University of Science & Technology	2007
11	Pwani University	2007
12	Technical University of Kenya	2007
13	Technical University of Mombasa	2007
14	Maasai Mara University	2008
15	Meru University of Science and technology	2008
16	Multimedia University of Kenya	2008
17	South Eastern Kenya University	2008
18	Jaramogi Oginga Odinga University of Science and Technology	2009
19	Laikipia University	2009
20	University of Kabianga	2009
21	University of Kabianga	2009
22	University of Eldoret	2010
23	Kibabii University	2011
24	Kirinyaga University	2011
25	Machakos University	2011
26	Murang'a University of Technology	2011
27	Rongo University	2011
28	Taita Taveta University	2011
29	The Co-operative University of Kenya	2011
30	University of Embu	2011
31	Garissa University	2011

**APPENDIX II: FULLY FLEDGED PUBLIC UNIVERSITIES OFFERING PhDs PROGRAMS**

	<b>Universities</b>	<b>No. of Doctoral</b>		
		<b>Programmes</b>	<b>Enrolments</b>	<b>Graduates</b>
1	University of Nairobi	118	1292	109
2	JKUAT	92	1549	161
3	Maseno University	62	638	72
4	Kenyatta University	52	853	66
5	Egerton	61	382	18
6	Masinde Muliro	49	338	43
7	Chuka	47	184	32
8	Moi University	50	279	42
9	Pwani	38	9	9
10	Kisii	36	185	9
11	University of Eldoret	27	8	5
12	Jaramogi	21	401	23
13	TUK	19	25	0
14	Maasai Mara	16	91	16
15	Rongo	15	87	5
16	Laikipia	14	80	5
17	Karatina	11	116	0
18	Murang'a	10	26	0
19	University of Embu	9	47	0
20	Seku	8	85	1
21	Kibabii University	8	107	1
22	Dedan Kimathi	5	115	6
23	Machakoes	4	39	0
24	Meru	4	4	0
25	TUM	4	2	0
26	University of Kabianga	3	28	0
27	Garissa University	2	0	0
28	Kirinyaga	1	5	0

**APPENDIX III: CHARTERED PUBLIC UNIVERSITIES IN KENYA**

	<b>Charted public Universities in Kenya</b>	<b>No of PhD Programmes</b>
1	Chuka University	47
2	Dedan Kimathi University of Technology	5
3	Egerton University	49
4	Garissa University	2
5	Jaramogi Oginga Odinga University of Science and Technology	21
6	Jomo Kenyatta University of Agriculture & Technology (JKUAT)	43
7	Karatina University	11
8	Kenyatta University	52
9	Kibabii University	8
10	Kirinyaga University	1
11	Kisii University	36
12	Laikipia University	14
13	Maasai Mara University	16
14	Machakos University	4
15	Maseno University	62
16	Masinde Muliro University of Science and Technology	49
17	Meru University of Science and Technology	4
18	Moi University	50
19	Multi Media University	0
20	Murang'a University of Technology	10
21	Pwani University	38
22	Rongo University	15
23	South Eastern Kenya University	8
24	Taita Taveta University	0
25	Technical University of Kenya	19
26	Technical University of Mombasa	4
27	The Co-operative University of Kenya	0
28	University of Eldoret	27
29	University of Embu	9
30	University of Kabianga	3
31	University of Nairobi	118
	<b>Total PhDs in Kenya</b>	<b>725</b>

## **APPENDIX IV: INFORMED CONSENT**

**Technical University of Kenya**

P.O. Box 52428 – 00200 Nairobi, Kenya

### **SUBJECT: INFORMED CONSENT FOR DOCTORAL STUDENTS**

Dear Respondent,

My name is Emily Sawe. I am currently undertaking research towards my PhD in Information and Knowledge Management at the Technical University of Kenya. I am inviting you to participate in this study, The purpose of this study is to investigate research support services offered to PhD students in university libraries in Kenya - with a view of proposing a framework to enhance the services. The questionnaire is designed to obtain the views of the PhD students about the research support services in their university libraries. Please be assured that the information gathered will be used strictly for the purposes of the study and confidentiality and anonymity are assured. The questionnaire will take approximately 20 minutes to complete. Your participation will involve responding to questions relating to the above-mentioned study.

#### **Procedure to be followed.**

Your participation in this study will require that I ask you some questions.

#### **Potential benefits:**

There are no known benefits to you that would result from your participation in this research. However, your participation in this study will contribute towards gaining knowledge that will enhance research support services in public universities in Kenya. This research will assist us to better understand the nature and extend of RSS of doctoral students in public universities in Kenya.

#### **Rewards**

There is no reward for anyone who chooses to participate in the study.

**Protection of confidentiality:**

We will do everything we can to protect your privacy. Your identity will not be revealed in any publication resulting from this study. Your responses will be treated with utmost confidentiality. I will ensure anonymity of interview participants by naming participants A, B, C, etc.

**Voluntary participation:**

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalised in any way should you decide not to participate or to withdraw from this study. It is only with your permission that the interview will be audio recorded.

**Contact information:**

If you have any questions or concerns about this study or if any problems arise, please contact:

**SUPERVISORS**

Full Name: Dr. Naomi Mwai

School: Information and Knowledge Management

University: Technical University of Kenya

Contact: + (254) 722469333

Email: [mwainaomi2@gmail.com](mailto:mwainaomi2@gmail.com)

Full Name: Dr. Lilian Oyieke

School: Information and Knowledge Management

University: Technical University of Kenya

Contact: + (254) 726994772

Email: [lmoyieke@googlemail.com](mailto:lmoyieke@googlemail.com)

**Participant’s Statement:**

- I confirm that I have read and understand the context of this study and that I have had the opportunity to ask questions.
- I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
- I agree to participate in the above study.
- I agree to the interview being audio recorded

Name of Participant.....Date.....Signature.....

**Investigator’s Statement**

I, the undersigned, have explained to the volunteer in a language s/he understands the procedure to be followed in the study and the risks and the benefits involved.

Name of Researcher ..... Date..... Signature.....

## **APPENDIX V: QUESTIONNAIRE FOR DOCTORAL STUDENTS**

### **INSTRUCTIONS**

Please respond by ticking (✓) against your preferred response for questions with options. For questions that require suggestions or comments, please use the space provided.

The questionnaire comprises five parts (A to D)

### **PART A: PERSONAL INFORMATION**

1. Name of university  
.....
2. What is your field of study?  
.....
3. Please select your mode of study
  - Course work and research
  - Thesis by research
4. What is your year of study?  
.....
5. Gender
  - Male
  - Female

### **PART B: RESEARCH SUPPORT SERVICES**

6. Does your library offer or plan to offer any of the following research support services?  
Select all that apply.
  - Instructional services
  - Scholarly communication services
  - Research data services
  - Research data management services
  - Library resources
  - Research impact management services

7. a) Kindly rate the extent the following types of **instructional services** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Instructional Services	1	2	3	4	5
Advice on research topics					
Database training					
Advice on literature review					
Research clinics or workshops					
Citation and referencing					
Data collection					
Data analysis using computer software					
Sources of research collaboration					
Sources of funding opportunities					

b) Others, please specify  
 .....  
 .....

8. a) Kindly rate the extent the following types of **scholarly communication services** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Scholarly Communication Services	1	2	3	4	5
Publishing advice					
Identification of credible journals					
Social media for research dissemination					
Profiling of researchers					
Open access publications					
Sources of research collaboration					

b) Others, please specify  
 .....  
 .....  
 .....

9. a) Kindly rate the extent the following types of **research data services** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Research Data Services	1	2	3	4	5
Support for data deposit in institutional repository					
Data relevant external data sets					
Technical aspects of digital curation					

b) Others, please specify

.....  
 .....

10. a) Kindly rate the extent the following types of **research data management** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Research Data Management	1	2	3	4	5
Guidance on writing a data management plan					
Guidance on how to use appropriate metadata					
Guidance on depositing data into repositories					
Provision of statistical and other data analysis support					
Developing data management plans					

b) Others, please specify

.....  
 .....

11. a) Kindly rate the extent the following types of **Library resources** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Library Resources and Services	1	2	3	4	5
Provision of library collection and resources to support PhD research					
Provision of research commons for PhD students					
Provision of adequate print collection in different areas of study					
Provision of adequate e-databases in different areas of study					
Provision of updates on the latest information accessible for varied research					

b) Others, please specify

.....  
 .....

12. a) Kindly rate the extent the following types of **research impact services** are currently offered in your university library. (Key: 1=Strongly Dissatisfied, 2=Dissatisfied, 3=Neutral Satisfied, 4=Satisfied, 5=Strongly Satisfied)

Research Impact Services	1	2	3	4	5
Bibliometric training					
Altimetric training					
Citation reports					
Calculations of research impact					
Grant applications					
H-index calculations					

b) Others, please specify

.....  
 .....

13. How satisfied are you with the research support services offered in 6 above in meeting your research information needs?

- Strongly dissatisfied
- Dissatisfied
- Neutral satisfied
- Satisfied
- Strongly satisfied

**PART C: EXTENT OF UTILIZATION OF RESEARCH SUPPORT SERVICES**

14. To what extent have you **utilized** the following research support services as provided by your university library for your research? (Tick all that apply). (Key: 1=Not at All, 2=Small Extent, 3=Moderate Extent, 4=Great Extent, 5=Very Great Extent)

	1	2	3	4	5
<b>Instructional Services</b>					
Advice on research topic					
Advice on literature review					
Advice on research proposal writing					
Citation and referencing advice					
Advice on plagiarism and copyrights					
Data collection advice					
Guidance on data analysis using computer software					
Advice on sources of funding opportunities					
<b>Scholarly Communication Services</b>					
Advice on identification of credible journals					
Advice on social media use for research dissemination					
Advice on profiling of researchers					
Advice on open access publications					
Advice on sources of funding opportunities					
Advice on grant applications					
<b>Research Data Services</b>					
Support for data deposit in institutional repository					
Data relevant external data sets					
Technical aspects of digital curation					
<b>Research Data Management</b>					
Guidance on writing a data management plan					
Guidance on how to use appropriate metadata					
Guidance on depositing data into repositories					
Provision of statistical and other data analysis support					
Developing data management plans					
<b>Library Resources</b>					
Guidance on the use of library collection and resources (print & e-resources)					
Research commons/study areas for PhD students					
Updates on the latest information accessible for my research					
<b>Research Impact Services</b>					
Bibliometric training					
Altimetric training					
Citation reports					
Calculations of research impact					
H-index calculations					

15. What other research support services provided by your university library have you used for your research?

.....  
 .....

**PART D: POSSIBLE CHALLENGES**

16. What would you say are the main challenges faced by your university library in providing research support services for doctoral students?

.....  
.....

17. What measures would you suggest to deal with the above-mentioned challenges?

.....  
.....

Thank you very much for taking your time to complete this questionnaire. Your input is valued and highly appreciated.

**The End**

## **APPENDIX VI: INFORMED CONSENT FORM FOR LIBRARIAN'S PARTICIPATION IN INTERVIEW SESSION**

Dear Respondent,

My name is Emily Sawe, I am a PhD candidate studying at the Technical University of Kenya. You are invited to participate in a research project entitled: Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya. Your university library is one of the selected research sites for this study. To gather the information, your participation will involve responding to questions relating to the above-mentioned study. The questionnaire will take approximately 20 minutes to complete.

Please note that:

- Your confidentiality is guaranteed as your inputs will not be attributed to you in person but reported only as a population member opinion.
- The Questionnaire may last for about 20-30 minutes.
- Any information given by you cannot be used against you, and the collected data will be used for purposes of this research only.
- Data will be stored in secure storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalised for taking such an action.
- The research aims at investigating how a critical librarianship approach can enhance research support services amongst doctoral students in selected public university libraries in Kenya and propose its framework.
- Your involvement is purely for academic purposes only, and there are no financial benefits involved.
- If you are willing to participate, please indicate (by ticking as applicable)

	Willing	Not willing
I agree to participate in this study		
I agree to be interviewed		
Audio Equipment		
Photographic equipment		
Video Equipment		

**Investigator’s Statement**

I, the undersigned, have explained to the volunteer in a language s/he understands the procedure to be followed in the study and the risks and the benefits involved.

Name of Researcher ..... Date..... Signature.....

## APPENDIX VII: QUESTIONNAIRE FOR LIBRARY STAFF

This is a questionnaire intended for the librarians who handles RSS for doctoral students. The questionnaire comprises part A and B.

Part A: A set of 5 statements capturing demographic information of librarians.

Part B: 7 closed ended and 8 open ended questions.

### **PART A - Background Information**

1. Name of university .....
2. Gender .....
3. Designation.....
4. Period of service:
  - Below 5 years,  5– 10 years Above 10 years
5. Highest level of qualification:
  - B.Sc.  MSC. PhD Others specify .....

### **PART B: Research Support Services offered to PhD students.**

6. What in your opinion is ‘Research Support Services’?  
.....  
.....

7 a. What research support services are currently offered, not offered, or planning to be offered in your library? Give your responses in terms of the following categories of research support services- (**Key: 1=Offered, 2=Not offered, 3=Planning to be offered**)

<b>Research Support Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Instructional Services			
Scholarly communication services			
Research data services			
Research data management services			
Library resources			
Research impact management services			

Others (specify).....

b. Does your library offer or plan to offer any of the following instructional services?

(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)

<b>Instructional Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Advice on research topics			
Database training			
Advice on literature review			
Research clinics or workshops			
Citation and referencing			
Data collection			
Data analysis using computer software			
Sources of research collaboration			
Sources of funding opportunities			

c. Does your library offer or plan to offer any of the following scholarly communication services?

(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)

<b>Scholarly Communication Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Publishing advice			
Identification of credible journals			
Social media for research dissemination			
Profiling of researchers			
Open access publications			
Sources of research collaboration			

d. Does your library offer or plan to offer any of the following Research Data services?

(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)

<b>Research Data Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Support for data deposit in institutional repository			
Data relevant external data sets			
Technical aspects of digital curation			

- e. Does your library offer or plan to offer any of the following Research Data Management?

**(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)**

<b>Research Data Management Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Guidance on writing a data management plan			
Guidance on how to use appropriate metadata			
Guidance on depositing data into repositories			
Provision of statistical and other data analysis support			
Developing data management plans			

- f. Does your library offer or plan to offer any of the following Research Data services?

**(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)**

<b>Library Resources and Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Provision of library collection and resources to support PhD research			
Provision of research commons for PhD students			
Provision of adequate print collection in different areas of study			
Provision of adequate e-databases in different areas of study			
Provision of updates on the latest information accessible for varied research			

- g. Does your library offer or plan to offer any of the following Research Data services?

**(Key: 1=Offered, 2=Not offered, 3=Planning to be offered)**

<b>Research Impact Management Services</b>	<b>1</b>	<b>2</b>	<b>3</b>
Bibliometric training			
Altimetric training			
Citation reports			
Calculations of research impact			
Grant applications			
H-index calculations			

8. What research support services, in your experience, are mainly accessed by PhD students when undertaking their research?

.....  
 .....

9. How does the library inform PhD students of available and new research support services?

.....  
.....

10. In your opinion, do you feel empowered as a librarian to adequately support PhD students in their research?

.....  
.....

11. Do you as a librarian feel that you empower the PhD students to utilize research support services?

.....  
.....

12. How do you use your librarian power to improve research support services in your library? (i.e., instructional services, scholarly communication advice, research impact assessment, research data management etc.)

.....  
.....

13. What challenges does the library face when providing research support services to PhD students?

.....  
.....

14. In your opinion, what are the possible solutions to the challenges faced when providing each of these research support services for PhD students?

.....  
.....

Thank you very much for taking your time to complete this questionnaire. Your inputs are valued and highly appreciated.

**The End**

## **APPENDIX VIII: INFORMED CONSENT FORM FOR UNIVERSITY LIBRARIAN'S PARTICIPATION IN INTERVIEW SESSION**

Dear Respondent,

My name is Emily Sawe, I am a PhD candidate studying at the Technical University of Kenya. You are invited to participate in a research project entitled: Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya. Your university library is one of the selected research sites for this study. To gather the information, I am interested in asking you some questions.

Please note that:

- Your confidentiality is guaranteed as your inputs will not be attributed to you in person, but reported only as a population member opinion.
- The interview may last for about 20-30 minutes and may be split depending on your preference.
- Any information given by you cannot be used against you, and the collected data will be used for purposes of this research only.
- Data will be stored in secure storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalised for taking such an action.
- The research aims at investigate how a critical librarianship approach can enhance research support services amongst doctoral students in selected public university libraries in Kenya and propose its framework.
- Your involvement is purely for academic purposes only, and there are no financial benefits involved.
- If you are willing to be interviewed, please indicate (by ticking as applicable) whether or not you are willing to allow the interview to be recorded by the following equipment:

	Willing	Not willing
I agree to participate in this study		
I agree to be interviewed		
Audio Equipment		
Photographic equipment		
Video Equipment		

**Investigator’s Statement**

I, the undersigned, have explained to the volunteer in a language s/he understands the procedure to be followed in the study and the risks and the benefits involved.

Name of Researcher ..... Date..... Signature.....

## **APPENDIX IX: INTERVIEW SCHEDULE FOR UNIVERSITY LIBRARIANS**

### **PART A: BACKGROUND INFORMATION**

Name of university .....

Gender .....

Designation.....

Period of service:  Below 5 years,  5– 10 years,  Above 10 years

Highest level of qualification:  B.Sc.,  MSC,  PhD, Others, specify .....

### **PART B: RESEARCH SUPPORT SERVICES**

1. What in your opinion is 'Research Support Services'?
2. What are the research support services provided in your library?
3. Which research support services do your PhD students utilize?
4. How does the library inform PhD students of available and new research support services?
5. In your opinion, do you think librarians have adequate knowledge and skills needed to support PhD students on their research?
6. How do you ensure that the librarians are well equipped to handle PhD students' research support services? (i.e., improving their competencies through reskilling).
7. What challenges does the library face when providing research support services to PhD students?
8. In your opinion, what are the possible solutions to the challenges faced when providing each of these research support services for PhD students?

Thank you very much for your time and support.

**The End**

**APPENDIX X: FIELD OF STUDY OF DOCTORAL STUDENTS**

<b>Field of study</b>	<b>Frequency</b>	<b>Percent</b>
Finance	21	7.4
Library and Information Studies/Science	20	7.1
Information Science	11	3.9
Business Administration	11	3.9
Chemistry	10	3.5
Electrical Engineering	9	3.2
Supply Chain Management	8	2.8
International Relations/Studies	7	2.5
Swahili Linguistics and Literature	7	2.5
Medical Microbiology	7	2.5
Medicine	6	2.1
Linguistics	6	2.1
Anthropology	6	2.1
Armed Conflict and Peace Studies	6	2.1
Communication Studies	6	2.1
Finance & Accounting	6	2.1
Human Resource Management	6	2.1
Food Science and Nutrition	5	1.8
Plant Breeding and Genetics	5	1.8
Education management	5	1.8
Marketing Management	5	1.8
Project Planning and Management	5	1.8
Accounting	4	1.4
Applied Sciences	4	1.4
Business Innovation and Technology Management	4	1.4
Curriculum Studies	4	1.4
Agricultural Extension and Rural Development	4	1.4
Educational psychology	4	1.4
Entrepreneurship	4	1.4
ICT Management	4	1.4
Management	4	1.4

Horticulture	4	1.4
Public Health	3	1.1
Public Policy	3	1.1
Supply Chain Management & Strategic Management	3	1.1
Tourism Management	3	1.1
Veterinary Medicine	3	1.1
Animal nutrition	3	1.1
Economics	3	1.1
Mechanical Engineering	3	1.1
Gender and African Women	3	1.1
Bioinformatics	3	1.1
Business Management	3	1.1
Civil Engineering	3	1.1
Communication and Media	3	1.1
Sociology	2	0.7
Population Studies	2	0.7
Analytical Chemistry	2	0.7
Pharmacy	2	0.7
Epidemiology	2	0.7
ICT & Information Science	2	0.7
Journalism and Mass Communication	2	0.7
Biochemistry	2	0.7
Geography	1	0.4
Parasitology	1	0.4
Physics (Exploration Geophysics)	1	0.4
Media Information Literacy	1	0.4
Environmental Science	1	0.4
Crop science	1	0.4
Science Education	1	0.4
Biotechnology	1	0.4
Agricultural Economics	1	0.4
Agriculture	1	0.4
<b>Total</b>	<b>283</b>	<b>100.0</b>

---

*Source: Field Data (2022)*

## APPENDIX XI: CODE BOOK

### TOWARDS A CRITICAL LIBRARIANSHIP FRAMEWORK FOR ENHANCING RESEARCH SUPPORT SERVICES AMONG DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA

#### CODEBOOK

Theme	Description	Codes
Research Support Services	It is the comprehensive set of services academic librarians offer to researchers that assist them navigate their 'information landscape' (the information used every day for work or study purposes).	Research data management Open access Scholarly publishing Research impact measurement Research guides Scholarly journal databases Research consultation Information literacy programs Publication and dissemination Citation management systems Online Tutorials
Approaches for Enhancing RSS	These are channels university libraries use to promote RSS to their Doctoral students	<i>Library website</i> <i>Workshops</i> <i>Annual research support fairs</i> <i>Liaison librarians</i> <i>Social media platforms</i> <i>Emails</i> <i>Posters</i> <i>Library orientation</i> One-to-one conversations Brochures Published guides Phone Website
Librarian Power	It is the influential role librarians play in facilitating access to Information mostly by educating	Research support help desk, improved instructional Services, Collaborate,

	users in critical information literacy skills, advocating for the interests of their users and communities, leveraging technology to innovate library services, and contributing to the advancement of their profession.	<p>create tutorials</p> <p>Promote RSS</p> <p>Provide advanced literacy Training,</p> <p>Organize webinars</p> <p>Develop research guides</p> <p>Purchase new library technologies</p> <p>Participate in Research committees</p> <p>Increase resources through collection development</p> <p>Advocate for diversity and inclusion</p>
Librarian empowerment	Within the context of critical librarianship, librarian empowerment is a concept that highlights the role of librarians as active players in developing and transforming research support services to be more fair, inclusive, and socially just.	<p><i>Workshops</i></p> <p><i>Conferences</i></p> <p><i>Mentorship and peer support</i></p> <p><i>Knowledge sharing</i></p> <p><i>Advancement in Professional qualifications</i></p>
User empowerment	<p>Refers to the comprehensive process of providing scholars with the knowledge, resources, and necessities to take charge of their academic pursuits and research initiatives.</p> <p>It comprises giving them access to specialized resources, mentorship, the development of critical research skills, fostering their ability to assess material</p>	<p>Access to quality Information resources</p> <p>Advanced Information literacy training</p> <p>Access to Expert Subject librarians</p> <p>Access to Library instruction materials</p> <p>Access to library research tools</p> <p>Knowledge on research ethics</p>

	critically, and fostering a sense of ownership over their scholarly journey.	
Methods for Assessing Levels of User Empowerment	This multifaceted approach to evaluating user empowerment levels employs qualitative and quantitative methodologies.	<i>Surveys</i> <i>Meetings</i> <i>Post services follow-ups</i> <i>Physical and online suggestion boxes</i> <i>One-on-one feedback sessions</i> <i>Self-reported satisfaction reports</i> <i>Testimonial data and success stories</i> <i>Tracking students' progress</i> <i>Pre-and post-workshop Feedback</i>
Disempowerment	Disempowerment refers to a decrease in the ability of the Doctoral students to exercise control, make decisions, access resources, or have a meaningful impact on their respective academic assignments and their information landscape.	Lack of skills and Knowledge, Lack of formal Training, Lack of experience, Limited resources, Lack of assessment framework, Inadequate technological infrastructure Inadequate staffing Time constraints Budgetary restrictions, Vast amount of Information, Ineffective channels of communications Lack of specialized resources Keeping up with emerging technologies

## APPENDIX XII: ETHICAL CLEARANCE

### **VERDICT – APPROVED**

Daystar University Ethics Review Board

Our Ref: **DU-ERB/02/06/2022/00061**

Date: 2<sup>nd</sup> June 2022

To: Emily Cherono Sawe,

Dear Emily,

### **RE: TOWARDS A CRITICAL LIBRARIANSHIP FRAMEWORK FOR ENHANCING RESEARCH SUPPORT SERVICES AMONG DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA**

Reference is made to your ERB application reference no. 310522-02 dated 31<sup>st</sup> May 2022 in which you requested for ethical approval of your proposal by Daystar University Ethics Review Board.

We are pleased to inform you that ethical review has been done and the **verdict is that the proposal passes as it is**. Your application approval number is **DU-ERB-00061**. The approval period for the research is between **2<sup>nd</sup> June 2022 to 1<sup>st</sup> June 2023** after which the ethical approval lapses. Should you wish to continue with the research after the lapse you will be required to apply for an extension from DU-ERB at half the review charges.

This approval is subject to compliance with the following requirements.

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by Daystar University Ethics Review Board.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to Daystar University Ethics Review Board within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to Daystar University Ethics Review Board within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of a signed one-page executive summary report and a closure report within 90 days upon completion of the study to Daystar University Ethics Review Board via email [duerb@daystar.ac.ke].

**Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke> and any other clearances needed.**

Yours sincerely,



Sr. Prof. A. L. Lando PhD  
Chair, Daystar University Ethics Review Board

23 June 2022



Encl. Review Report

"...until the day dawn and the DAYSTAR will be in your hearts!"  
2 Peter 1:19 KJV

## APPENDIX XIII: NACOSTI CLEARANCE

 <b>REPUBLIC OF KENYA</b>	 <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
RefNo: <b>462293</b>	Date of Issue: <b>22/June/2022</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Ms. Emily Cherono Sawe of Technical University of Kenya, has been licensed to conduct research in Kakamega, Kiambu, Kihifi, Nairobi, Nakuru, Narok, Siaya, Tharaka-Nithi on the topic: TOWARDS A CRITICAL LIBRARIANSHIP FRAMEWORK FOR ENHANCING RESEARCH SUPPORT SERVICES AMONG DOCTORAL STUDENTS IN SELECTED PUBLIC UNIVERSITY LIBRARIES IN KENYA for the period ending : 22/June/2023.</b>	
License No: <b>NACOSTI/P/22/18298</b>	
Applicant Identification Number <b>462293</b>	 Director General <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
Verification QR Code	
	
<b>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</b>	

## APPENDIX XIV: PERMISSION LETTER – TECHNICAL UNIVERSITY OF KENYA



### THE TECHNICAL UNIVERSITY OF KENYA

Hile Selassie Avenue, P. O. Box 52428, Nairobi, 00200, Tel: +254 (0)20 343672, 2247074, 2251300, 341530,  
Fax: 2219509, E-mail: [vc@kenpoly.ac.ke](mailto:vc@kenpoly.ac.ke), Website: [www.tuk.ac.ke](http://www.tuk.ac.ke)

#### Office of the Director School of Graduate and Advanced Studies

REF: AIIIX/03879P/2018

Date: 7<sup>th</sup> April, 2022

**The Chief Executive Officer**

National Commission for Science, Technology and Innovation  
NACOSTI Building, Off Waiyaki Way  
P.O. Box 30623 - 00100  
**Nairobi, KENYA**  
Tel: 020 400 7000/0713788787/0735404245

Dear Sir/Madam,

**REF: APPLICATION FOR RESEARCH PERMIT**

This is to inform you that **Ms. Emily Cherono Sawe**, is a registered PhD student in the Department of Information and Library Sciences, School of Information and Social Studies, The Technical University of Kenya. The course is offered by Course work, Research and Thesis. The title of her proposal is **"Towards a Critical Librarianship Framework for Enhancing Research Support Services among Doctoral Students in Selected Public University Libraries in Kenya."**

Ms. Sawe has successfully completed course work, defended her proposal and is proceeding for field work which will involve data collection using approved surveys and research methods.

This is to kindly request you to issue her with a research permit.

Yours sincerely,

**Prof. Tom J. Kwanya**  
Ag. Director, School of Graduate and Advanced Studies  
File Copy: SGAS Student File  
TJK/smm



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## APPENDIX XV: PERMISSION LETTER – JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY



**JOMO KENYATTA UNIVERSITY  
OF  
AGRICULTURE AND TECHNOLOGY**  
P.O. Box 62000 00200 Nairobi Kenya. Tel: 1254-067-5870001-4, 1254-67-53-52711,  
Office of the Registrar (Administration)

JKU/ACA/3D

27<sup>TH</sup> JULY, 2022

Ms. Emily Cheremo Sawe  
P.O. Box 59857 - 00200  
NAIROBI  
Tel. No. 0722 859286

Dear Ms. Sawe

**RE: PERMISSION TO COLLECT DATA**

Reference is made to your letter dated 13<sup>th</sup> July, 2022 requesting for permission to collect data for your PhD research project entitled **“Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya”**.

Approval has been granted for you to collect data from the specified target group only on the understanding that all the data collected will be for academic purpose only and will be kept confidential throughout the project and after completion of the project. This is also on condition that the University Library will receive a copy of your final thesis for future reference.

Yours sincerely,

**DR. ROSE M. GITHU, PhD**  
**AG. REGISTRAR (ADMINISTRATION)**  
SPO/ina

Copy to: Deputy Vice Chancellor (Administration)



JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified  
*Setting Trends in Higher Education, Research, Innovation and Entrepreneurship*



**APPENDIX XVI: PERMISSION LETTER – THE UNIVERSITY OF NAIROBI**



**UNIVERSITY OF NAIROBI**  
**OFFICE OF ASSOCIATE VICE-CHANCELLOR**  
(Research, Innovation and Enterprise)

P.O. Box 30197-00100  
Nairobi, Kenya  
Website: [www.uoi.ac.ke](http://www.uoi.ac.ke)

Tel: +254-20-4913104  
Email: [svr@uoi.ac.ke](mailto:svr@uoi.ac.ke)

UON/RIE/3/5/Vol.LXX

June 23, 2022

Emily Cherono Sawe  
P. O. Box 59857 - 00200  
NAIROBI  
Email: [sawe.emily@gmail.com](mailto:sawe.emily@gmail.com)

Dear Ms. Sawe

**PERMISSION TO COLLECT DATA**

I refer to your request to conduct research at the University of Nairobi, for your project entitled: *"Towards a Critical Librarianship Framework for Enhancing Research Support Services among Doctoral Students in Selected Public University Libraries in Kenya."*

I write to inform you that your request has been approved.

You are however required to share the Findings of your study with the University of Nairobi by depositing a copy of your findings with the Director Library & Information Services on completion of your study.

Yours sincerely,

**PROF. M. JESANG HUTCHINSON**  
**ASSOCIATE VICE-CHANCELLOR (AG.)**  
**(RESEARCH, INNOVATION AND ENTERPRISE)**  
**AND**  
**PROFESSOR OF HORTICULTURE**

Copy to: Director, Library and Information Services

SLP/eg

## APPENDIX XVII: PERMISSION LETTER – EGERTON UNIVERSITY

# EGERTON

P. O. Box 536-20115  
Egerton, Kenya  
E-mail: [dvcro@egerton.ac.ke](mailto:dvcro@egerton.ac.ke)  
Website: [www.egerton.ac.ke](http://www.egerton.ac.ke)



# UNIVERSITY

Telephone: +254-51-2217801/808  
+254-51-2217891/2  
Cell: +254-775 015 388

### OFFICE OF THE DEPUTY VICE-CHANCELLOR RESEARCH AND EXTENSION

EU/DVC/RE/089

28<sup>th</sup> June, 2022


Emily Cherono Sawe  
P. O. Box 59857-00200  
NAIROBI

#### RE: PERMISSION TO CONDUCT RESEARCH AT EGERTON UNIVERSITY

Reference is made to your letter dated 22<sup>nd</sup> June, 2022 requesting for authority to collect data for your PhD research project titled: *"Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya"*. It is noted that the data will be collected from doctoral students and Library staff in Egerton University.

Authority is hereby granted for you to collect data in Egerton University. Please report to the Director (Research and Extension) for guidance. It is expected that this research is purely for academic purpose and will not be used otherwise.

Upon completion of the study please share the results with us. Note that we may ask for a presentation to our faculty and expect you to provide a copy of the report for our retention. You are also expected to comply with the Egerton University Intellectual Property policy.

  
Prof. Bockline O. Bobo, Ph.D.  
AG. DEPUTY VICE CHANCELLOR (RESEARCH & EXTENSION)

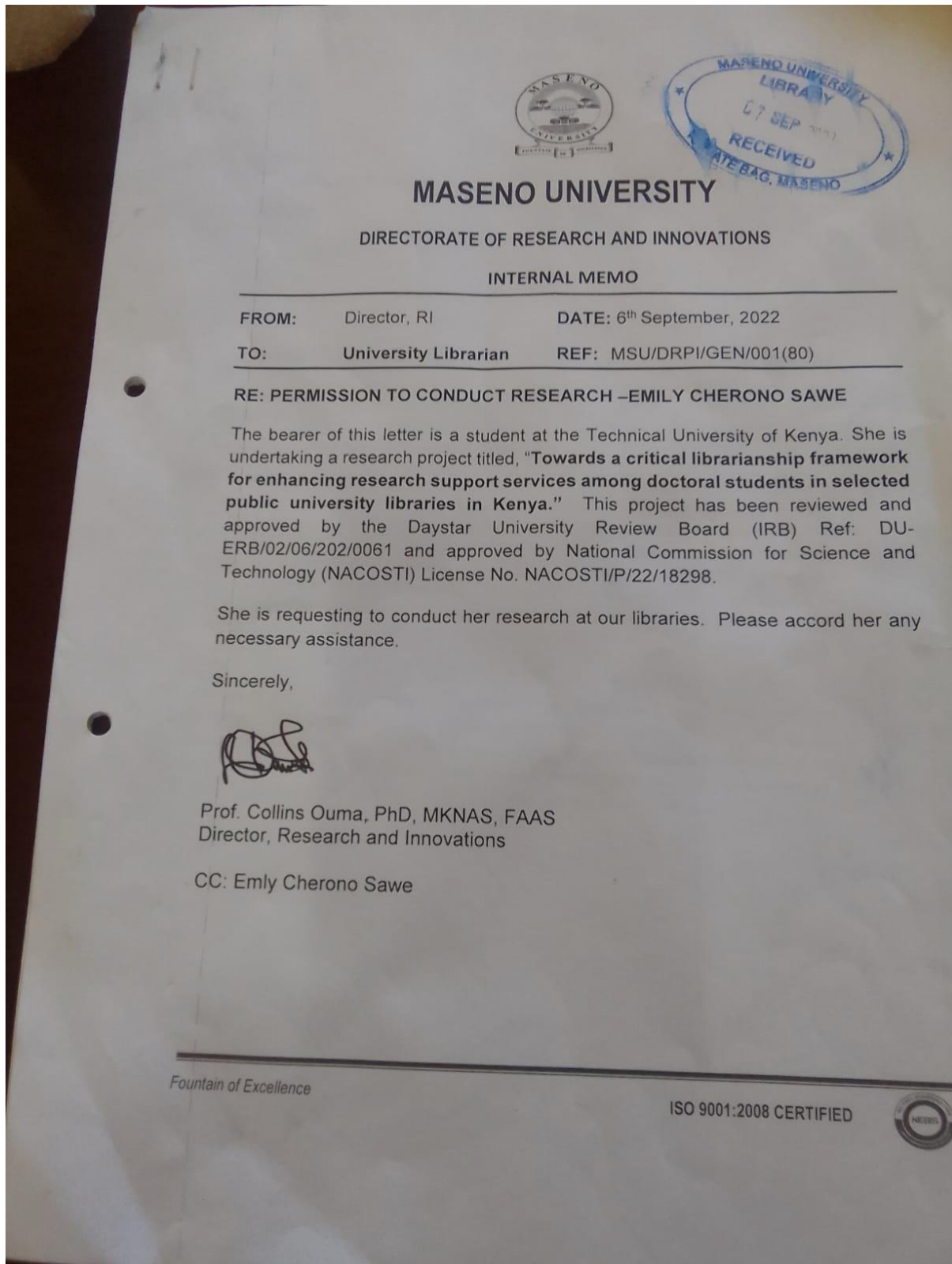


BOB/es

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**APPENDIX XVIII: PERMISSION LETTER – MASENO UNIVERSITY**





**APPENDIX XX: PERMISSION LETTER – PWANI UNIVERSITY**



**Office of the Deputy Vice Chancellor (Research and Extension)**

Our Ref: PU/DVCRE/RSCH/VOL.1/42  
Your Ref:  
Website: [www.pu.ac.ke](http://www.pu.ac.ke)

P. O. Box 195  
Kilifi, Kenya  
Telephone: 041 7525102/3/4/6  
Fax: 041 7522128/7522292  
Email: [dvcref@pu.ac.ke](mailto:dvcref@pu.ac.ke)

DATE: 27<sup>th</sup> June, 2022

Emily Cherono Sawe  
P.O. Box 59857-00200  
NAIROBI, Kenya  
Tel. 0722859286

**RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT PWANI UNIVERSITY**

Your Email dated 22<sup>nd</sup> June, 2022 on the above subject refers.

Permission is hereby granted for you to carry out Research at Pwani University on your PhD work, registered at the Technical University of Kenya, entitled, *"Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya"* on the following conditions:

- i) You will deposit a copy of your Research proposal with Pwani University.
- ii) You will deposit the final copy of your thesis with Pwani University.
- iii) You will collect the data in person.

If you agree on these conditions, please sign in the provided space and return a copy of this letter to the undersigned.

Thank you



**PROF. MUNIRU K. TSANUO  
DEPUTY VICE CHANCELLOR (RESEARCH AND EXTENSION)**

I ..... accept/do not accept the conditions under which I will be allowed to collect academic research data at Pwani University.

Signed: ..... Date: .....

Copy: Vice Chancellor, Pwani University  
Deputy Vice Chancellor, (ASA)  
Registrar, Research and Extension

**APPENDIX XXI: CHUKA UNIVERSITY**



External users

Emily Cheronu Sawe  
P.O. Box 59857- 00200 Nairobi, Kenya  
Tel. 0722859286  
22<sup>nd</sup> June 2021

Vice Chancellor  
Chuka University  
Box 109-60400 Chuka, Kenya  
Thro'  
The University Librarian

*UNIVERSITY LIBRARIAN Prof. J. Kanuga*  
*Approved: Reply and host her on*  
*Chuka University during the research time.*  
*27/6/2021*

Dear Sir/Madam,

RE: Request to conduct research at Chuka University

I am a PhD candidate in the School of Information and Social Studies at the Technical University of Kenya. As part of my PhD, I am conducting a research study titled: *Towards a critical librarianship framework for enhancing research support services among doctoral students in selected public university libraries in Kenya*. The study targets doctoral students and library staff in 8 public universities in Kenya. Chuka University is one of the public universities selected to participate in the study. The aim of this study is to investigate how a critical librarianship approach can enhance research support services amongst doctoral students and propose a framework for redesigning. Data will be collected using questionnaires for doctoral students and interviews for library staff.

The purpose of this letter is to request for permission to conduct the research in the university. Once the PhD is completed, the results will be made available to your university. The research documentation including, NACOSTI permit, IRB ethical clearance, a recommendation letter from Technical University of Kenya and data collection instruments are attached for your reference. I am looking forward to your favorable response. Thank you in advance.

Sincerely,

Emily Cheronu Sawe



**APPENDIX XXII: PERMISSION LETTER – MASINDE MULIRO UNIVERSITY**

**APPENDIX XXIII: INFORMED CONSENT**

Technical University of Kenya

P.O. Box 52428 – 00200 Nairobi, Kenya

**SUBJECT: INFORMED CONSENT**

Dear Respondent,

My name is Emily Sawe. I am currently undertaking research towards my PhD in Information and Knowledge Management at the Technical University of Kenya. I am inviting you to participate in this study, and assist me by completing this anonymous online questionnaire. The purpose of this study is to investigate research support services offered to PhD students in university libraries in Kenya - with a view of proposing a framework to enhance the services. The questionnaire is designed to obtain the views of the PhD students about the research support services in their university libraries. Please be assured that the information gathered will be used strictly for the purposes of the study and confidentiality and anonymity are assured. The questionnaire will take approximately 20 minutes to complete. Your participation will involve responding to questions relating to the above-mentioned study.

**Participant’s Statement:**

I agree to participate in the above study.

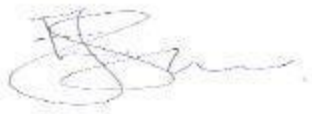
Date.....Signature.....  
.....

**Contact information:**

If you have any questions or concerns about this study or if any problems arise, please contact:

Researcher:

Full Name: Emily Cherono Sawe



Phone: + (254) 722859286

Email: [sawe.emily@gmail.com](mailto:sawe.emily@gmail.com)

**APPENDIX XXIV: FIELD OF STUDY OF DOCTORAL STUDENTS**

<b>Field of study</b>	<b>Frequency</b>	<b>Percent</b>
Finance	21	7.4
Library and Information Studies/Science	20	7.1
Information Science	11	3.9
Business Administration	11	3.9
Chemistry	10	3.5
Electrical Engineering	9	3.2
Supply Chain Management	8	2.8
International Relations/Studies	7	2.5
Swahili Linguistics and Literature	7	2.5
Medical Microbiology	7	2.5
Medicine	6	2.1
Linguistics	6	2.1
Anthropology	6	2.1
Armed Conflict and Peace Studies	6	2.1
Communication Studies	6	2.1
Finance & Accounting	6	2.1
Human Resource Management	6	2.1
Food Science and Nutrition	5	1.8
Plant Breeding and Genetics	5	1.8
Education management	5	1.8
Marketing Management	5	1.8
Project Planning and Management	5	1.8
Accounting	4	1.4
Applied Sciences	4	1.4
Business Innovation and Technology Management	4	1.4
Curriculum Studies	4	1.4
Agricultural Extension and Rural Development	4	1.4
Educational psychology	4	1.4
Entrepreneurship	4	1.4
ICT Management	4	1.4
Management	4	1.4
Horticulture	4	1.4
Public Health	3	1.1
Public Policy	3	1.1
Supply Chain Management & Strategic Management	3	1.1
Tourism Management	3	1.1

Veterinary Medicine	3	1.1
Animal nutrition	3	1.1
Economics	3	1.1
Mechanical Engineering	3	1.1
Gender and African Women	3	1.1
Bioinformatics	3	1.1
Business Management	3	1.1
Civil Engineering	3	1.1
Communication and Media	3	1.1
Sociology	2	0.7
Population Studies	2	0.7
Analytical Chemistry	2	0.7
Pharmacy	2	0.7
Epidemiology	2	0.7
Horticulture	2	0.7
Journalism and Mass Communication	2	0.7
Biochemistry	2	0.7
Geography	1	0.4
Parasitology	1	0.4
Physics (Exploration Geophysics)	1	0.4
Media Information Literacy	1	0.4
Environmental Science	1	0.4
Crop science	1	0.4
Science Education	1	0.4
Biotechnology	1	0.4
Agricultural Economics	1	0.4
Agriculture	1	0.4
<b>Total</b>	<b>283</b>	<b>100.0</b>

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*Source: Field Data (2022)*

## APPENDIX XXV: THESIS ORIGINALITY REPORT

