

SCHOLARLY PUBLISHING SERVICES IN UNIVERSITY LIBRARIES IN MALAWI

LIMBANI CHRISPIN GAMA

(MLIS 0220)

BLIS

A dissertation submitted in partial fulfilment of the requirements for the award of the degree
of Master of Library and Information Science in the Department of Information Sciences,
Mzuzu University, Malawi

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MZUZU UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

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DECLARATION

I, Limbani Chrispin Gama, declare that:

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ABSTRACT

The changing methods and modes of communication due to technological developments in the 21st century are consequently influencing academic libraries to adapt new services. Lately, academic libraries have been providing scholarly publishing services to researchers. Library publishing has a long history in the research lifecycle having long supported learned societies by purchasing their journals and other materials. However, academic libraries are challenged with high costs and use constraints imposed by commercial publishers and scholars in return are faced with unmet publishing needs. In examining potential solutions, this study has discovered areas where academic libraries can make advances in scholarly publishing. There are known to contribute to research development and innovation in response to the Malawi vision 2063 agenda, the National Education Sector Investment Plan 2020 – 2030 and the 2030 sustainable development goals. The study examined the scholarly publishing services at four university libraries in Malawi namely, Mzuzu University, University of Malawi, Kamuzu University of Health Sciences and Malawi University of Business and Applied Sciences. The study focused on the scholarly publishing services offered by the university libraries; strategies in promoting scholarly publishing; competences of library staff in scholarly publishing; and the factors affecting university libraries in scholarly publishing.

The study employed an explanatory sequential mixed methods design, underpinned by the pragmatic paradigm and guided by the Scientific Communications Lifecycle Model. Questionnaires were administered to 24 senior library staff and interviews were conducted with four university librarians and five senior assistant librarians. Data was analysed using the Statistical Package for the Social Sciences and thematic analysis for quantitative and qualitative data respectively. According to the study findings, all four university libraries provide various scholarly publishing services including institutional repositories; citation management; information organisation; research clinics and promotion; and digitisation. The university libraries publish some scholarly works mostly through institutional repositories with electronic theses and dissertations and conference papers and proceedings as the predominant scholarly works in all the universities. This study also established that library staff at all the four libraries have expert knowledge in a number of scholarly publishing services including information organisation; digitisation; repository services; citation management; and plagiarism check. This study revealed some factors that affect scholarly publishing in the university libraries such as lack of funding; lack of technological infrastructure; lack of faculty compliance from the academics and researchers; and lack of technical support from the mother institutions.

Considering that universities in Malawi have some capacity to establish and run scholarly publishing services in their libraries, the study concludes that scholarly publishing service is slowly but surely being embraced by academic libraries in Malawi and the service will eventually become one of the core services of these academic libraries. Considering that libraries lack infrastructures resulting from financial challenges, the study recommends that university administrators should recognise the potential of libraries in scholarly publishing and provide adequate support towards capacitating infrastructure and other requirements.

DEDICATION

I dedicate this thesis to my late lovely mother, Missy Chikondi Bodza and beloved siblings
Owen, Charity, Calvin, and Brian.

Lovely mom

This fruit that you gave life

Saccharine, succulent, and treasured by some

Sour, rancorous, and tangy as some would loathe

Curtsies to thee.

Beloved siblings

in His will we live

as a blessing bestowed

with peace and harmony

received at last immortally

I aspire greatly for thy benevolence.

ACKNOWLEDGEMENT

First and foremost, glory and honour be to the Lord God Almighty for guidance, protection and strength. He is Jehovah, the architect of it all. To Him who made me, I give reverence.

I passionately convey my heartfelt indebtedness to my supervisor, Associate Professor Winner Dominic Chawinga (PhD), Dean – Faculty of Humanities and Social Sciences for the dexterous expertise, precious intelligence, constructive criticism, unswerving guidance and support, throughout the duration of my studies and this project, now seen light at the tunnel end.

Much salute should also go to Associate Professor George Theodore Chipeta (PhD) and Sellina Khumbo Kapondera (PhD), Head – Department of Information Science for their remarkable proficiency, zealous will of heart, and exceptional intelligence in guiding me through the course of my studies at Mzuzu University.

Above all, you dear professors, stand out as my pillars upon which I stand and see the horizon, you are the shoulders of giants upon which I am carried forward.

I give credence to my departed parents, late Missy Chikondi Bodza and Willie Owens Gama. Words run out of my mouth, grief and desire disintegrate my soul. But am engulfed continually with hope and faith that you fought your battle. You made sacrifices that only Yahweh in heaven knows and comprehends. In this parade I have trodden upon, you gave much sweat, sacrifice, care, and love for its success.

Lastly, I reach for my heart, full of love from my brothers Owen, Calvin, and Brian and beloved sister Dalitso for their unrelenting moral, spiritual, and resourceful support, abound with exquisite natural love bestowed upon us. On these ladders I have mounted and achieved all I have, you have been family.

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ABBREVIATIONS AND ACRONYMS

DOI	: Digital Object Identifier
ETD	: Electronic Thesis and Dissertation
ICT	: Information and Communication Technology
ISSN	: International Standard Serial Number
ISBN	: International Standard Book Number
KNUST	: Kwame Nkrumah University of Science and Technology
KUHeS	: Kamuzu University of Health Sciences
LIS	: Library and Information Science
LPC	: Library Publishing Coalition
MUBAS	: Malawi University of Business and Applied Sciences
MZUNI	: Mzuzu University
NASIG	: North American Special Interest Group
NCHE	: National Council for Higher Education
OJS	: Open Journal Systems
SLA	: Special Libraries Association
UNIMA	: University of Malawi
UNISIST	: United Nations Information System in Science and Technology

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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

The purpose of the study was to examine the scholarly publishing services of university libraries in Malawi. Scholarly publishing has been the format that new information, gathered by means of research or in-depth study, is disseminated. Association of College and Research Libraries (ACRL) (2003) define scholarly publishing as the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. Bammel (2017, p. 25) states that “scholarly publishing is the third largest publishing sector and produces journals, monographs, reference works and data sets for scholarly communication, as a public record of research findings, and for legal, accounting, financial and other professions”.

In 1994, mathematician Andrew Odlyzko predicted a brave new world of scholarly electronic publishing that would be dramatically cheaper than the traditional paper journal-based model (Saarti & Tuominen, 2017). Today’s scholarly publishing environment is evolving and the changes experienced over the past few decades remain unprecedented. The industry is adapting to the considerable rise of open access movements from the early 2000s, changes to the funder landscape in research and scholarship, and the digital revolution of the past 20-30 years (Missingham & Kanellopoulos, 2014; Stone, 2016, 2017). These changes have led to radical rethinking in roles and services of scholarly publication in universities and research libraries across the globe. Some of these changes have been seen in a number of academic libraries offering digital services in the publishing space, developing their own scholarly publishing initiatives and hosting digital publications mostly through open access publishing mechanisms (Bonn & Furlough, 2015; Missingham & Kanellopoulos, 2014; Sandy & Mattern, 2018). University libraries are moving away from merely selecting and purchasing content, each independently heading toward similar futures in publishing and the business of creating, curating, and distributing digital content (Oberlander, 2013).

Universities have an important role to play in meeting scholars’ publishing needs. To this extent, universities have seized the opportunities provided by university presses and library-based publishing systems in publishing both internally and externally generated knowledge. Besides, Bargheer and Walker (2017) observed that universities have a long history of functioning as publishers through their presses and institutional repositories.

1.2 University libraries and scholarly publishing

Library-based publishing can be broadly defined as the set of activities led by university libraries to support the creation, dissemination, and curation of scholarly, creative, and/or educational works (Library Publishing Coalition, 2018, 2021, 2022; Skinner et al., 2014). Library publishing is a booming area of innovation within universities (Tracy, 2017) and libraries are becoming the new “go-to” places on many campuses when creativity and innovation in publishing or dissemination is sought (Okerson & Holzmana, 2015). Moreover, Ry-Kottoh et al. (2022) indicate that library publishing has become an important and alternative function of academic libraries to serve the scholarly community. Libraries are interested in publishing services because it serves author and reader holistically and provides easy mechanisms for sharing knowledge. Literature shows a steady increase in library-based university publishing with more growth envisaged (Schlosser, 2018; Simser et al., 2015).

Researchers have reported on scholarly publishing programmes within university libraries that basically focus on the different types of scholarly material published and the scholarly publishing services that the libraries offer to the research community (Bonn & Furlough 2015; Lippincott, 2017; Okerson & Holzman, 2015). Despite this precedence, some literature indicate that scholars often find their publishing needs unmet (Li et al., 2018). Unfortunately, this happens despite the default existence of university presses and library-based publishing within their institutions. In response, Karla Hahn, writing in 2008, said that “scholars and researchers are taking their unmet needs to the library” (Hahn, 2008, p. 7). Moreover, publishing is in some way and to some extent a critical function for the library. For that reason, scholars can look up to the library as an option for publishing services (Okerson & Holzman, 2015).

1.3 Historical perspectives of library scholarly publishing

Librarians have been studying scholarly publishing for a long time and have been participating in publishing initiatives even longer (Bonn & Furlough, 2015; Okerson & Holzman, 2015). For example, in 1965, Gordon Maxim detailed the activities of libraries in library publishing in the United Kingdom from 1600 to the mid-twentieth century (Maxim, 1965). The first two major detailed reports on library publishing were titled *university publishing in a digital age* by Brown et al. (2007); and *research library publishing services: new options for university publishing* by Hahn (2008). The focus of the former study was on university based publishing and its future role in the scholarly publishing while the latter focussed on research libraries and the services they were providing in scholarly publishing. At the heart of these isolated works is prominence on scholarly publishing devoted within local university libraries.

Hahn (2008) opine that libraries have provided traditional publishing services since their inception. However, the potential of the venture has been explored recently in academic libraries (Sandy & Mattern, 2018). Historically, libraries have collected materials produced by scholars and research institutions and disseminated by presses (Okerson & Holzman, 2015). Bargheer and Walker (2017) assert that early library efforts in the publishing sphere focused largely on informal publication. Now, everybody is a publisher, including libraries. The current focus on library publishing began around twenty-five years ago (Bonn & Furlough, 2015). In the last two-three decades, scholarly publishing has shifted, a lot. There is abundant evidence on university publishing through libraries (Bains, 2017; White & Stone, 2015) and library publishing is now a growing worldwide movement (Simser et al., 2015).

1.4 Factors influencing library scholarly publishing

1.4.1 Open access movements

At the heart of open access is the ethos to facilitate the sharing of knowledge for the benefit of the wider public good. Similarly, university libraries exist to collect, preserve, and disseminate knowledge to the public. Chadwell and Sutton (2014) prove that university libraries are open by being catalysts for open access to the scholarship created by university faculty. The idea is to enable library patrons have easy access to research results (Boufarss & Harviainen, 2021). Bailey (2017) provides an extensive account of the role of libraries in open access ranging from providing enhanced access to open access resources, establishing institutional digital archives, and even becoming publishers of open access works, digitising out-of-copyright works, preserving open access material, and providing support for article processing charges.

1.4.2 Huge database subscription fees

The growth in library publishing has been motivated by the increase in journal prices and the ever-increasing costs of electronic and print subscriptions from commercial publishers. It is becoming increasingly impractical and challenging for academic institutions and their libraries to subscribe to most of the online journals considering their shrinking budgets (Bains, 2017; Bonn & Furlough, 2015; Lippincott, 2017; Schlosser, 2018; Shoroma, 2021; Stapleton, 2019). Concern over the increasing costs of subscriptions to scholarly publications has led the library community to turn attention to the publication of original work and providing their own scholarly publishing services (Bonn & Furlough, 2015; Hawkins, 2019). Therefore, strangled with rising costs for certain scholarly publications, and the shrinking library budgets in public universities, it is no surprise that librarians have taken up scholarly publishing themselves, to remedy the situation (Bonn & Furlough, 2015; Okerson & Holzman, 2015).

1.4.3 Advancements in ICTs

The advent of ICTs such as computers, internet and the World Wide Web have revolutionised the traditional methods of acquiring, storing and disseminating information. These ICTs have greatly contributed to the evolution of scholarly publishing by changing the way documents are produced, organised and disseminated in the research community (Muriithi et al., 2016; Shoroma, 2021). For the publishing industry the technological aspects of the digital revolution are particularly important as they affect how books and other publications are produced, distributed, promoted and consumed (Bammel, 2017, 2021). In this era of electronic publishing necessitated by advanced ICTs, Li et al. (2018) found that libraries have been actively crafting their services to catch up with the ever-changing needs of their community.

1.5 Context of the study

Malawi has six public universities registered and accredited with Malawi's higher education regulator known as the National Council for Higher Education (NCHE) (NCHE, 2019). These universities are: University of Malawi (UNIMA); Mzuzu University (MZUNI); Lilongwe University of Agriculture and Natural Resources; Malawi University of Business and Applied Sciences (MUBAS); Kamuzu University of Health Sciences (KUHeS); and Malawi University of Science and Technology (MUST) (NCHE, 2019). Due to logistical issues and other factors as explained in section 1.10, this study only explored UNIMA, MZUNI, KUHeS, and MUBAS.

Mzuzu University was established by an Act of Parliament of 1997 and was officially launched and enrolled its first students in 1999 (Mzuzu University, 2019). MZUNI has a population of 462 members of staff and a student population of 9308. The University, located in the northern region of Malawi, has six faculties which include Science, Technology and Innovation, Humanities and Social Sciences, Tourism, Hospitality and Management, Education, Environmental Sciences, and Health Sciences (Mzuzu University, 2019).

UNIMA was established in 1964 and located in the southern district of Zomba, Malawi. Teaching at the university started on 29th September 1965. UNIMA was re-established by an Act of Parliament No. 18 of 2019 on 3rd May, 2019 effectively making UNIMA a standalone university after delinking its previous constituent colleges, namely College of Medicine, Kamuzu College of Nursing and The Polytechnic (UNIMA, 2023). UNIMA is made up of five schools which are; Law, Science, Social Science, Humanities, and Education (UNIMA, 2023). The university has a population of 1250 staff and 8325 students.

KUHeS was established by an Act of Parliament Nos. 19 and 20 of 2019 by merging Kamuzu College of Nursing (established in 1965) and College of Medicine (established in 1991). The Malawi Ministry of Education gazetted May 4th 2021 to be the commencement date for the university. KUHeS has three campuses in Blantyre, two campuses in Lilongwe, and one campus in Mangochi. This study was conducted at the main campuses in Blantyre. The university has a population of 715 staff and 5058 students. The university is made up of five schools namely: Global and Public Health, Life Sciences and Allied Health Professions, Nursing, Maternal, Neonatal and Reproductive Health, and Medicine and Oral Health.

MUBAS was established by an Act of Parliament No. 19 of 2019 after its successful de-linking from the University of Malawi. The university is located in the southern district of Blantyre, Malawi. The university has a population of 606 members of staff and 7082 students. The university is made up of five schools namely: Built environment, Business and Economic Sciences, Education Communication and Media Studies, Engineering, and Science and Technology.

These universities have well-developed university presses, library-based publishing systems through their institutional repositories and indeed research directorates to manage and promote local scholarly publishing. To achieve teaching, learning and research activities, the universities have libraries which provide several scholarly research services to researchers. In terms of organisational structure, the libraries in Malawi are divided into several sections namely technical or acquisitions services, and readers' services in which scholarly publishing services fall. MZUNI, UNIMA, KUHeS and MUBAS libraries are headed by university librarians. All these university libraries are expected to provide high quality facilities and services for use by students and staff and publishing services for researchers. These university libraries need to be innovative in developing scholarly publishing services with proper strategies put in place. Tise et al. (2015) stipulate that scholarly publishing allows libraries to take a leading role within the university and the research process. This orchestrates the mandate of academic libraries to support students, faculty and the entire parent institution in their learning, teaching and research activities through the collection and dissemination of both local and international content (Cobblah et al., 2021; Ocran & Afful-Arthur, 2021). This means academic libraries support the research and education agenda of the academic communities they serve. Inevitably, library publishing furthers this mission based on knowledge sharing, a core value of libraries in making diverse knowledge freely accessible to the benefit of the academic community and the public at large (Schlosser, 2018; Stapleton, 2019).

According to Mzuzu University (2019), the mission of Mzuzu University library is

To provide up-to-date and relevant information resources; promote the effective utilisation of those resources; and facilitate rapid access to information held within and in remote places through conventional and electronic means to Mzuzu University community and other stakeholders.

The mission of UNIMA library is grounded in the university's mission which stipulates:

To advance knowledge and to promote wisdom and understanding by engaging in teaching, research, consultancy, public and community engagement and by making provision for the dissemination, promotion and preservation of learning responsive to the needs of Malawi and global trends.

The mission of KUHeS library is also grounded in the universities mission which stipulates:

To improve quality research, teaching and learning in the medical sciences through facilitation of information literacy and access to relevant information.

The mission of MUBAS library is:

To be an academic library of excellence that engages actively in teaching, learning and research by providing information resources that stimulate intellectual curiosity, and an environment conducive to research communication and information exploitation.

The four isolated mission statements do not directly mention of library publishing as part of their mandates. However, it may be implied that 'using conventional and electronic means for access to information' and 'publication services' can be extended to include library publishing. In fact, the mission statement from MUBAS specifically touches on communication of research which corresponds to the publishing of research and knowledge. The next section, provides the research problem of the study.

1.6 Problem statement

Large, profit-driven commercial academic publishers such as Taylor and Francis, Reed Elsevier, Sage, and Springer run the majority of prestige journals. Likewise, book publishers such as McGraw Hill, Pearson, and Heinemann, and vendors such as Amazon and Google. Both journal and book publishers have set the terms and conditions on knowledge they publish and how it is shared and accessed (Arbuckle, 2021; Koley et al., 2021).

One of the conditions is that most of the knowledge they publish is accessed through restrictive subscriptions. This arrangement seems ironical because it compels universities to buy their own sponsored research. For instance, a university hires a research-stream faculty member and pays their salary under the agreement that they will publish; then, when the author does publish with a toll-access publication, universities must pay again to secure access to the publication through a journal subscription (Arbuckle, 2021; Courant & Jones, 2015). This has led to academic libraries being unable to afford to subscribe to the journals they require, which is referred to as crisis in scholarly publishing (Shoroma, 2021). Such costs and use constraints imposed by commercial publishers have encouraged libraries to explore alternative options for sharing scholarly research (Bonn & Furlough, 2015; Shoroma, 2021).

MZUNI, UNIMA, KUHeS and MUBAS are in the same predicament because the universities pay excessively for knowledge some of which is created by its own academic staff. Every year, each of the universities pay \$10,000 for subscription to electronic materials and \$294 for membership with the Malawi Library and Information Consortium that facilitate group subscription for Malawian libraries (Malemia, personal communication, July 2, 2022). This has created an untenable financial situation for the universities in Malawi, forcing them to reduce budget lines dramatically in order to meet the research needs of their faculty and students. Positively, this resonates to the requirement of NCHE (NCHE, 2019), and the Malawi vision 2063 agenda which envisions to create academic and research centres in a bid of encouraging creativity and innovation (National Planning Commission, 2020, p. 36).

Over the years, MZUNI, UNIMA, KUHeS and MUBAS have published scholarly work in various disciplines. What is therefore known is that university-based researchers generate knowledge which they publish and disseminate through various outlets. In agreement, the Ministry of Education (2020, p. 66) in its National Education Sector Investment Plan 2020 – 2030 is geared to promoting science, technology, research and innovation by supporting the production and dissemination of research findings from universities and research institutions. This is grounded on goal number 11 target 9.b of the 2030 sustainable development goals that calls for concerted efforts to support science, technology, research and innovation in developing countries (United Nations, 2015). It is also well-known that public university libraries were established to support the core university activities of teaching, learning and research. However, it is not known how these public university libraries support these core roles of their institutions through scholarly publishing. This study was therefore conducted to fill the prevailing gap.

1.7 Research objectives

The main objective of the study was to examine the scholarly publishing services of MZUNI, UNIMA, KUHeS and MUBAS libraries. The specific objectives of the study were to:

- Ascertain scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries;
- Determine strategies for promoting scholarly publishing services at MZUNI, UNIMA, KUHeS and MUBAS libraries;
- Establish competences of MZUNI, UNIMA, KUHeS and MUBAS library staff in scholarly publishing;
- Determine the factors affecting MZUNI, UNIMA, KUHeS and MUBAS libraries in scholarly publishing.

1.8 Research questions

The main question of the study was what are the scholarly publishing services of MZUNI, UNIMA, KUHeS and MUBAS libraries? In particular, this thesis responded to four questions:

- What are the scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries?
- What are the strategies for promoting scholarly publishing services at MZUNI, UNIMA, KUHeS and MUBAS libraries?
- What competences do MZUNI, UNIMA, KUHeS and MUBAS library staff have in scholarly publishing?
- What are the factors affecting MZUNI, UNIMA, KUHeS and MUBAS libraries in scholarly publishing?

1.9 Significance of the study

Any study should have the ability to add to scholarly research and literature in that field; to improve policy, and to improve practice (Creswell, 2014). This study contributes to research practice by giving academic librarians insight in providing effective scholarly publishing services. thus, this study should be of interest to library authorities launching scholarly publishing programmes or already overseeing them; to library school deans engaged in keeping curricula up-to-date with the realities of the job market; and to future librarians wishing to join the profession. The study also provides a guide in developing policies and strategies to support scholarly publishing in public universities. The study also contributes to the literature on scholarly publishing in Malawian universities.

1.10 Scope and limitation

The study focussed on scholarly publishing in Malawian public universities and the services that the university libraries are providing in the publishing industry. The study only explored four public universities namely: MZUNI, UNIMA, KUHeS, and MUBAS. The study excluded other public and all private universities. The key limitation in excluding other public universities was logistical arrangements to move around all the universities in Malawi which was not feasible to finish the project in time. The study was also limited by financial constraints. Therefore, simple random sampling was used to deselect one university out of the total. The research was also affected by engagements from participants who were not available during data collection some of whom had proceeded on study leave and annual holidays.

1.11 Structure of the thesis

The overall structure of the study takes the form of six chapters, including this introductory chapter. The chapters forming this study are highlighted as below.

Chapter One: Introduction and background

This chapter introduces the concept of scholarly publishing in university libraries, then explains the research problem arising from the background of the study. It also covers the aim of the study and questions to be used in achieving the purpose of the study. In addition, the thesis also includes significance of the study, scope, and limitations.

Chapter Two: Literature review

This chapter reviews literature related to the study on scholarly publishing services of university libraries. The literature is guided by themes of the study that include scholarly publishing services; strategies in promoting scholarly publishing; competences of library staff in scholarly publishing; and the factors affecting university libraries in scholarly publishing.

Chapter Three: Theoretical framework

This chapter reviews some models in scholarly publishing and provides a clear description of the model adopted for the study. It also specifies theoretical assumptions underlying the model, its strengths and weaknesses, together with the other models.

Chapter Four: Research methodology

This chapter discusses the research methodology employed in this study. Among others it explains the research paradigm, research design and research methods, population of the study, sampling techniques, data collection procedures, ethical considerations, and data analysis.

Chapter Five: Data presentation and analysis

This chapter presents and analyses data collected from the questionnaires distributed to library staff at MZUNI, UNIMA, KUHeS and MUBAS, and interviews conducted with the university librarians and senior assistant librarians at the universities.

Chapter Six: Discussion of findings

This chapter discusses the findings presented in chapter five and interprets them using the lens of the model adopted for the study and the literature reviewed in chapter two of the thesis. In addition, the chapter provides a summary, conclusion, recommendations, and areas of further study based on the findings of the study.

1.12 Chapter summary

This chapter has presented the introduction and background of the study. Firstly, the conceptual setting has been outlined with a brief insight of what other literature or scholars have written in relation to the topic under study. Secondly, the background provided the structure of MZUNI, UNIMA, KUHeS and MUBAS and then narrowed down to their respective libraries, the focal point of the study. The chapter went further to describe the statement of the problem which bore the research gap that the researcher noted, the aim of conducting the study, research objectives and questions, significance of the study, and the scope and limitations attributed to the study. The next chapter presents the literature reviewed in relation to this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Thomas (2017) defines literature review as a scholarly survey which extensively reviews scholarly work conducted both within and outside the study setting with an aim of informing the present study. The rationale for conducting a literature review is to show a reader in a systematic way what has already been done on a particular topic, divulge what is known and decipher the gaps in the current body of knowledge, and outline the key ideas and theories in research to fill the prevailing gaps (Bloomberg & Volpe, 2019).

Some types of literature review include narrative, meta-analysis, meta-synthesis, integrative, and systematic (Dudovskiy, 2019). A narrative literature review analyses and summarises a body of literature, highlight new research streams, make historical narratives of issues, identify inconsistencies and gaps in the body of available knowledge (Dudovskiy, 2019). It is demerited on the premise that it heaps literature upon literature without systematic synthesis and integration of data in an informed manner (Mutsagondo, 2021). Hence it was not used in this study. Meta-analysis literature review, is usually highly standardised and thus, mostly used in quantitative studies (O’Gorman & MacIntosh, 2015). This was also not used in this study since the study is not highly structured. However, meta-synthesis literature review is non statistical, and suitable for pure qualitative studies (Dudovskiy, 2019). But, the meta-synthesis literature review was found unsuitable for this study since it focuses on qualitative studies. According to Neuman (2020) integrative review critiques, and synthesises representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated. Systematic literature review is comprehensive, transparent and it is in line with pre-set criteria such as set objectives and research questions (Mutsagondo, 2021). This study employed systematic literature review because it is more rigorous than the narrative literature review. It is not just a summary of sources consulted, but spells out the time-frame from which the literature was selected and is highly organised.

The literature review focused on the following specific themes of the study as set out in chapter one: scholarly publishing services offered by university libraries; strategies in promoting scholarly publishing; competences of library staff in scholarly publishing; and the factors affecting university libraries in scholarly publishing.

2.2 Sources of literature

The literature used in this study covers issues on scholarly publishing from both print and electronic sources in journal articles, books, conference proceedings, book chapters, technical reports, research reports such as PhD and Masters dissertations, and databases such as Emerald, Ebscohost, Science Direct, Scopus and Google Scholar. Information sources were drawn from both developed and developing countries.

2.3 Scholarly publishing services offered by university libraries

Library and information science (LIS) literature relevant to scholarly publishing has addressed services offered by libraries. A qualitative case study by Li et al. (2018) investigated the library-press partnership on scholarly publishing services in America. Results from in-depth interviews with librarians found that libraries offer services such as digitisation projects, services related to technical infrastructure, copyright advisement, information organisation and evolving repository services that collect, store, publish, and disseminate scholarly works.

A survey study by LPC (2021) investigated scholarly works in academic and research libraries. Results of the survey questionnaire report that almost 70% of libraries listed in the 2021 library publishers' directory provide a wide suite of services including copyright support; training; metadata services; digital object identifier (DOI) assignment; international standard serial number (ISSN) assignment; digitisation; hosting of supplemental content, and analytics; typesetting; print-on-demand; international standard book number (ISBN) registry; graphic design (print or web); copyediting; and author advisory.

In Asia, libraries are also providing publishing services to their communities. A descriptive survey research that employed questionnaires by Sanjeeva (2017) in India found that libraries have added a variety of services supporting scholarly publishing including assistance in publication process, and development and management of institutional repositories for the purpose of collecting, showcasing and maximizing discovery of institutional research output.

A review paper by Kumar (2020) in India investigated the role of libraries in enhancing the research visibility and collaboration of academics. The results revealed that libraries conduct research oriented seminars, workshops, and training activities to help researchers deal with relevant topics such as copyright and open access publishing. The results also revealed that academic libraries were arranging research conferences, colloquiums and poster presentation to get feedbacks and to improve the quality of research.

In Africa, some studies have shown a few libraries taking part in providing library publishing services. For instance, in Ghana, White (2019) in a mixed methods study on ‘Scholarly communication guidance’ found that libraries provide scholarly communication guidance services which can include providing training on issues regarding copyright, data sharing, research dissemination, citation techniques, meeting funder’s requirements and digitisation. A qualitative study by Oladokun (2015) in Botswana investigated the scholarly communication by use of institutional repositories. Similarly, a qualitative study by Raju (2019) in South Africa investigated new trends in scholarly communication. Results from interviews from these two separate studies found that academic libraries are offering scholarly publishing services, open access repository services, copyright and open access advice, and assessment of scholarly resources. These services involve helping authors to understand various publishing models and assisting them to make their works open access; assisting patrons to use copyrighted materials legally and to consult authors on their publishing agreements; and finally helping authors to comply with funding mandates (Chawinga, 2019; Chawinga & Zinn, 2021; White, 2019).

2.3.1 Institutional repositories

Institutional repositories stand out as a core scholarly publishing service provided by university libraries. In fact, repository services are part of the library publishing services in response to digital resource consumption by the university community (Kolesnykova & Matveyeva, 2019). Stanton and Liew (2012, p. 2) define an institutional repository and its role in scholarly publishing processes “as a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members”.

A qualitative study in Ghana by Ry-Kottoh et al. (2022) explored the potential of the Kwame Nkrumah University of Science and Technology (KNUST) library in library publishing. Results from interviews with librarians revealed library publishing programmes such as the dissemination and curation of published articles, theses, datasets and other forms of digital content from faculty members and postgraduate students through its institutional repository known as KNUSTSpace. This resonates with Stapleton’s (2019) assertion who conducted a qualitative case study at the University of Florida Libraries in America. The findings of the study through interviews with library staff revealed that institutional repositories are a platform for academic libraries entering library publishing as they were built to provide a home for an institution’s grey literature, such as electronic theses and dissertations, unpublished research reports, working papers, and policy statements.

In a qualitative content analysis, Mierzecka (2019) found that university libraries are engaged in different scholarly publishing practices by directing researchers to use institutional repositories in a bid of promoting open access initiatives. Many library publishing programmes emphasise hosting, providing access to and preserving digital content via institutional repositories and journal publishing platforms such as Open Journal Systems (OJS) (McCormick, 2015; Schmidt et al., 2016). OJS is a journal management and publishing system developed by the Public Knowledge Project to expand and improve access to research. It is an open source software for managing and publishing scholarly journals (Stapleton, 2019). Serrano-Vicente et al. (2016) in Spain also found that scholars at the University of Navarra deposited their research findings in repositories with the help of librarians.

In Africa, qualitative studies by Raju (2019) in South Africa and Oladokun (2015) in Botswana found that institutional repositories serve the purpose of preservation and dissemination of institutions' knowledge output. Similarly, a mixed methods study by Kapasule and Chawinga (2016) in Malawi investigated scholarly communications through institutional repositories. Results from questionnaires and interviews revealed that many institutions in Malawi have adopted mandatory deposits to populate their repositories as well as create a sustainable, accessible collection of research outputs. It is therefore justified to make research public via open access or by depositing in an institutional repository as a mechanism for capturing, archiving, managing and enhancing the collective digital research output of an institution (Marsh, 2015; Nemati-Anaraki & Tavassoli-Farahi, 2018).

2.3.2 Types of scholarly works published in university libraries

Scholarly works are of numerous types produced extensively in academic environments on a daily basis including papers, projects, theses, monographs, and data sets. The library publishing directory of 2021 published by LPC highlights a wide range of scholarly works published within academic libraries in the United States and across the world. According to LPC (2021), campus journals and ETDs remain the most common types of materials published by libraries. A qualitative case study by Li et al. (2018) state that the 2000s saw a proliferation of articles advocating the use of the institutional repositories to publish grey literature, ETDs, and other original research. Materials that can be published by academic libraries include peer-reviewed monographs and periodicals, textbooks, course modules, scholarly journals, conference papers and proceedings, dissertations, technical/research reports, white papers, niche journals, databases and datasets, special collections materials, and scholarly and scientific data collections (Borrego, 2016; LPC, 2021; Okerson & Holzman, 2015; Schlosser, 2018).

Ry-Kottoh et al. (2022) opine that decisions on what to publish and the processes involved depend on the needs of the audiences to be reached and the capacity of staff. Similar findings were revealed by a qualitative study by Skinner et al. (2015) who investigated the capacity building for the library publishing subfield. Interview data with librarians established that library publishing is mostly driven by demand from the parent university for digital publishing platforms. A mixed method study by Klain-Gabbay & Shoham (2016) on scholarly communication and the academic library revealed that some academic libraries collect online campus-created content and make it freely available in institutional repositories.

The literature above highlights the scholarly publishing services and scholarly works published in academic libraries within Africa and the world. Search of literature in Malawian libraries and other scholarly databases did not yield any published studies. As depicted in the problem statement scholarly publishing in Malawian libraries is lacking and needs to be known.

2.4 Strategies in promoting scholarly publishing in academic libraries

Literature identifies a number of strategies employed by libraries in promoting scholarly publishing services including the use of institutional repositories, directing students to peer reviewed journals, training researchers in research, and use of scholarly publishing policies.

2.4.1 Use of institutional repositories

A mixed methods study in Malawi by Kapasule and Chawinga (2016) investigated scholarly communications through institutional repositories. Results from questionnaires and interviews revealed that the library at the Kamuzu College of Nursing was advocating for students and faculty staff to deposit their research results in the institutional repository. In relation, a quantitative study by Zozie and Chawinga (2018) on Mapping an open digital university in Malawi using questionnaires revealed that many libraries in Malawi have embraced the concept of digital library which among others, include the component of institutional repositories. Several authors also assert that institutional repositories are a better strategy when publishing an institution's grey literature and digital library collections such as electronic theses and dissertations (Marsh, 2015; Nemati-Anaraki & Tavassoli-Farahi, 2018; Stapleton, 2019).

2.4.2 Training researchers in scholarly publishing

A mixed methods study by White (2019) in Ghana investigated the scholarly communication guidance at KNUST. The study intended to establish the scholarly publishing strategies employed by KNUST library. Results from questionnaires and interviews revealed that the academic library exists to guide researchers to access and use the right information.

A survey by Sanjeev (2018) in India investigated the role of libraries in scholarly communication. Results from questionnaires revealed that training librarians in research activities is one of the strategies increasingly being embraced by academic libraries in promoting scholarly publishing. Several studies in Ghana by Adjei et al. (2019), White (2019), and Ry-Kottoh et al. (2022) and one in Botswana by Oladokun (2015) found that most libraries were training researchers in use of online databases. Similarly, a mixed methods study in Malawi by Chima et al. (2023) investigated the use of online databases by undergraduate students at a Health Sciences College in Malawi. Results from questionnaires and interviews with librarians revealed that the academic library subscribed to online scholarly databases where librarians assist researchers to access, search, and use online databases.

2.4.3 Scholarly publishing policies

A qualitative case study by Stapleton (2019) examined library publishing partnerships with scholarly societies. Results from interviews revealed that librarians were of the view that scholarly publishing policies provide a platform for proper conduct of publishing activities. In relation, some African studies also provide evidence of the necessity of policies in promoting scholarly publishing services. A qualitative study by Ry-Kottoh et al. (2022) in Ghana found that policies are essential since they guide the operations of scholarly publishing work and determine the responsibilities and requirements for librarians and researchers. Mixed methods studies in Ghana by White (2019) and White and King (2020) found that librarians were aware of scholarly publishing policies at their universities. The results from questionnaires and interviews in these studies revealed that the policy at (KNUST) library requests doctoral students to publish at least two peer-reviewed journal articles before they graduate.

Studies reviewed above demonstrate availability of literature on strategies in promoting scholarly publishing in university libraries. However, the only known study in Malawi by Kapasule and Chawinga (2016) which addressed strategies in scholarly publishing was conducted at a college and not a public university. This gap has necessitated the study.

2.5 Competences of library staff in scholarly publishing in academic libraries

Academic librarians require additional skill sets to provide effective publishing services to their academic communities because no graduate-level training programme adequately prepares librarians for the full range of issues involved in library publishing (Ry-Kottoh et al., 2022). In response, White (2019, p. 45) calls for a set of competencies on the part of librarians to equip themselves in scholarly publishing.

Within LIS literature, there are various scholarly publishing skillsets and competencies identified by some associations and regional consortia like North American Special Interest Group (NASIG) and Special Libraries Association (SLA) (Sanjeeva & Powdwal, 2018). A survey by NASIG (2017) investigated the core competencies for scholarly communication librarians. Survey results obtained from questionnaires presented the core competencies required by the scholarly publishing librarians, and divided the core competencies in the following areas: institutional repository management, publishing services, intellectual property knowledge, and data management (NASIG, 2017). SLA (2016) also conducted a survey on competencies for information professionals. The results of the survey found various competencies for information professionals including information and data retrieval and analysis; repository management; organisation of data, information, and knowledge assets; and publishing services. These particular skill sets are expounded in the proceeding paragraphs.

2.5.1 Publishing services

In publishing services, literature calls for librarians to have knowledge of and experience with scholarly publishing platforms such as open source and hosted publishing solutions and digital publishing tools; the full life cycle of publishing; publishing standards including DOI, ISBN and ISSN assignment; coordinate metadata deposits with CrossRef, the Directory of Open Access Journals, and an understanding of schemata, such as Dublin Core (Calarco et al., 2016; NASIG, 2017; Raju, 2017; SLA, 2016). In a qualitative case study, Sewell and Kingsley (2017) investigated research support skills of academic librarians at Cambridge University in the United Kingdom. The results from interviews found that scholarly publishing was the skill most used among librarians. Also, McCormick (2015) in a literature review study found that publishing involves many distinct processes which include content selection; peer review; editing; curation, implementation of technical standards for content discovery; management of hardware and software; and repository development to support content hosting. A study in Ghana by Ry-Kottoh et al. (2022) found that the current capacity of KNUST Library staff was inadequate to engage in full-scale library publishing. In fact, the staff required continuous professional development by enrolling into additional courses at the library school, and self-training through free online courses to build capacity to effectively engage in library publishing (Dzandza, 2020; Ry-Kottoh et al., 2022). These findings resonate with findings of a qualitative study by Skinner et al. (2015) in America and a literature review study by Schlosser (2018) also in America. These studies report avenues for training librarians through academic degree programmes, professional development workshops, and online and internship programmes.

2.5.2 Institutional repository management

NASIG (2017) and SLA (2016) made calls for all scholarly publishing librarians to be fluent in the best practices for institutional repository content recruitment and description; managing the supporting technical infrastructure; have knowledge of and experience with repository solutions; and afford to collect, store, and preserve faculty, and student intellectual output. This competency would include the librarian being able to deposit a permissible copy of a work into an appropriate institutional repository, and related research support services. Other researchers also discuss of repository management services and understanding of open access as key staff competencies among librarians (Finlay et al., 2015; Sewell & Kingsley, 2017).

2.5.3 Intellectual property knowledge

Core competencies in intellectual property call for librarians to have knowledge of pertinent national copyright law; intellectual property legislation; understanding of author's rights; and performing licensing services; (NASIG, 2017; SLA, 2016; Sutherland-Smith, 2016). In a qualitative content analysis, Mierzecka (2019) found that librarians require expertise in copyright, supporting the management of authors' rights, open access publishing issues, and an understanding of funders' and publishers' policies related to open access. In a literature review study that used content analysis on 'Scholarly communication as a core competency' in America, Finlay et al. (2015) found that job advertisements with scholarly publishing as a primary job responsibility focusing on copyright, authors' rights, and intellectual property were the key staff competencies sought among librarians. Several authors agree that intellectual property and copyright has emerged as a core component of academic scholarly publishing initiatives (Calarco et al., 2016; Myers, 2016; Schmidt et al., 2016; Sewell & Kingsley, 2017; Swoger et al., 2015). Literature has also revealed that many institutions are creating or beefing up scholarly publishing programs or are hiring librarians with expertise in intellectual property and copyright (Chawinga & Zinn, 2021; Koltay, 2019; White, 2019; Swoger et al., 2015).

While there are studies in USA, UK, Australia, South Africa, Ghana, Malaysia, and India, investigating the knowledge and skill requirements for scholarly publishing, scanty literature has been identified with reference to Malawian libraries. Notable studies by Chawinga (2019) and Chawinga and Zinn (2021) only focused on competencies of library staff in research data management and found staff competences in curation standards and practices. Minus the two studies, no particular research has been done that explores the specific scholarly publishing skillsets and competencies in Malawi. The current study was therefore conducted to fill the prevailing gap in the literature.

2.6 Factors affecting scholarly publishing in university libraries

There are a number of factors that affect scholarly publishing in libraries. Some of these include technological infrastructure, perception of librarians, library staff competencies, funding, technical support, technological issues and faculty compliance (Spiro, 2015). The proceeding sections discuss the key factors that affect scholarly publishing in academic libraries.

2.6.1 Funding

A survey conducted by Sandy and Mattern (2018) investigated the status of academic library-based publishing in America. Questionnaire data found issues such as equipment costs and costs to hire/train staff. In a mixed methods study in Kenya, Wengu'a et al. (2017) investigated the role of Kenyan universities in promoting research and scholarly publishing. Results from questionnaires and interviews found that Kenyan universities face many challenges in implementing research and scholarly publishing activities including inadequate research funds; poorly funded libraries; and lack of professional equipment. Many authors similarly bemoan of a lack of funding specific to publishing beyond already suffocating budgets which affect library publishing efforts (Brantley et al., 2017; Sandy & Mattern, 2018; Saunders, 2015; White, 2019). In contrast to these findings, Schlosser (2018) reported results from an American study on building capacity for academy-owned publishing through the library publishing coalition. Results from the qualitative study report that over the last decade, a mix of financial and technological developments in academic libraries has spurred the rapid growth of library publishing programmes. Unlike Schlosser (2018), some authors argue that inadequate funding (Adjei et al., 2019; Dadzie & van der Walt, 2015), and lack of adequate and modern equipment (Dzandza, 2020) have been identified as the major challenges of library projects in Ghana. These contrasts in the findings may be due to the fact that America is a developed country in relation to Ghana which is a middle income nation.

2.6.2 Staff perceptions and resistance on library publishing

Sandy and Mattern (2018) in America, found that stakeholders within the library and the university were failing to sell the idea, work with campus partners, and advertise services. Dzandza (2020) conducted a qualitative study on digitizing of intellectual output of Ghanaian universities. Results from interviews with librarians report of the lack of cooperation from faculty members. Other studies reveal that despite the large number of institutional repositories that is available, research shows that they are frequently underpopulated (Borrego, 2016, 2017). This is in part orchestrated by the perception of academics that depositing a research article in a repository is not worth the gains and a lack of motivation thereof.

A qualitative case study by Spiro (2015) on publishing services at small academic libraries in America highlighted that faculty do not see the benefit of submitting their work to university repositories, reluctance of some faculty staff to stake their careers on publications that may not carry weight with tenure and promotion committees. Quality of research output motivates and equally raises staff and universities' reputation and credibility (Mzuzu University, 2018).

2.6.3 Lack of technological infrastructure

Authors posit that technology has made a very huge impact on the conduct, publishing, accessing, and promotion of research; archiving of data; and scholarly publishing among scholars (Swoger et al., 2015). In particular, a literature review by Hawkins (2019) shows that libraries that are ready for scholarly publishing need to invest a minimal commitment of resources on technological infrastructure which often fails. Ry-Kottoh et al. (2022) in Ghana found that the library's infrastructural capacity to host, disseminate, and curate digital content from outside the university (the platforms required for scholarly publishing) was lacking.

Though the studies reviewed above show availability of literature on factors affecting scholarly publishing. Search of literature in Malawian libraries and other scholarly databases did not yield any published studies. Studies conducted on university libraries in Malawi have not focussed on factors affecting scholarly publishing, hence this study intends to fill that gap.

2.7 Summary of the chapter

This chapter provided views of scholars on scholarly publishing in university libraries. The chapter identified connections, contradictions and gaps in the literature with reference to scholarly publishing services offered by libraries; strategies in promoting scholarly publishing; competences of library staff in supporting scholarly publishing; and the factors affecting libraries in scholarly publishing. The review of the literature reveals that library publishing initiatives are expanding and growing, as is interest in exploring the future directions for scholarly publishing programmes initiatives. Library publishing has enthusiastically claimed a space in the scholarly communication landscape in Europe and America with little penetration in sub-Saharan Africa. In Africa, few cases were noted where scholarly publishing programmes were implemented. Little is known about Malawi though since published research on the concept is scanty. Given the increasingly complex nature of scholarship and the field of scholarly publishing, as well as limitations stemming from financial burdens being felt by libraries and their sponsoring institutions, the researcher considers this an area worth exploring. The next chapter discusses the theoretical model which underpinned the study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1 Introduction

The theoretical framework is defined as “an interrelated set of constructs or variables formed into propositions, or hypotheses, which specify the relationship among variables in form of a diagram” (Creswell, 2009, p. 51). A theory and a model are two related but distinct terms (Pediaa, 2017). A model describes how the concepts in theory are related to each other, often presented in diagrammatical form to help the reader to visualise what is implied in a theory which it represents (Pediaa, 2017). Theories are formulated to explain, predict, and understand phenomena, and in many cases to challenge and extend existing knowledge within the limits of critical bounding assumption (University of Southern California, 2017).

This chapter reviews and discusses a number of models including Costa’s proposed adaptation of Garvey and Griffith’s model of scholarly communication for a print plus electronic environment by Costa (1999); United Nations Information System in Science and Technology (UNISIST) Model by UNISIST (1971); and the Scientific Communication Lifecycle Model by Björk (2007). The latter was adopted for the study. This chapter presents the strengths and weaknesses of each model which led to the justification of the model which underpinned this study. Just a recap, the purpose of this study premised on examining the scholarly publishing services of MZUNI, UNIMA, KUHeS and MUBAS libraries in Malawi. The purpose was addressed by the following themes as set in chapter one: scholarly publishing services; strategies in promoting scholarly publishing services; competences of library staff in scholarly publishing; and factors affecting libraries in scholarly publishing.

3.2 Costa’s proposed adaptation of Garvey and Griffith’s model of scholarly communication for a print plus electronic environment

Costa (1999, p. 50) reports that in the scientific context, the work of Garvey and Griffith provided some of the earliest contributions to the study of the communication process among scientists. According to Costa (1999, p. 51), Garvey and Griffith’s model was concerned with the dissemination aspect of the process based entirely on the printed media. Björk (2007) adds that the Garvey-Griffith model was a good description of how the communication process functioned at a time when information technology support was still lacking. A central aspect of the Garvey and Griffith’s model was to depict the information channels used to make research information public, including both formal and informal channels.

Hurd (1996) asserts that computer-based communication was not foreseen by the Garvey and Griffith's model. This element was regarded as a weakness of the Garvey and Griffith model which did not also suit the current study which made inference to publication of digital research data in institutional repositories. Due to such limitations, Costa (1999) proposed a hybrid scholarly communication process model (see Figure 3.1).

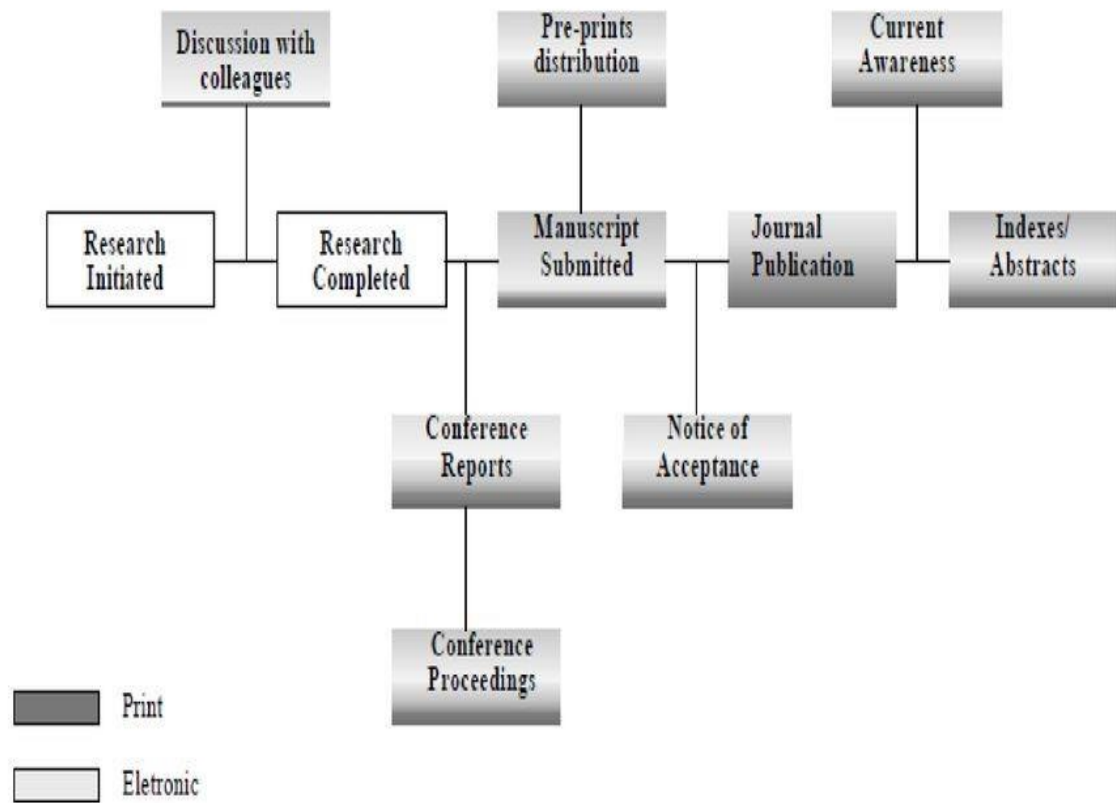


Figure 3. 1 Proposed adaptation of Garvey and Griffith's model of scholarly communication for a print plus electronic environment (Costa, 1999)

This proposed adapted model is based on the work done by Garvey and Griffith on print-based communication by scholars in the 1970's and the adaption thereof by Hurd (1996) to accommodate the electronic environment used by contemporary scholars and researchers. Costa (1999) is of the view that scholarly communication based on printed media only, no longer existed. One particular strength of this model is that it deals with channels and various ways of scholarly communication which would be essential for academic librarians. However, this model was not used in the study since a review of literature so far did not show this model being validated. Further, the model premised on educating doctoral students in order to effectively disseminate their research findings which was not the focus of the current study.

3.3 United Nations Information System in Science and Technology Model

The United Nations Information System in Science and Technology proposed a model of scholarly publishing in 1971 which was later revised by Trine Søndergaard, Jack Andersen and Birger Hjørland in 2003 (see Figure 3.2).

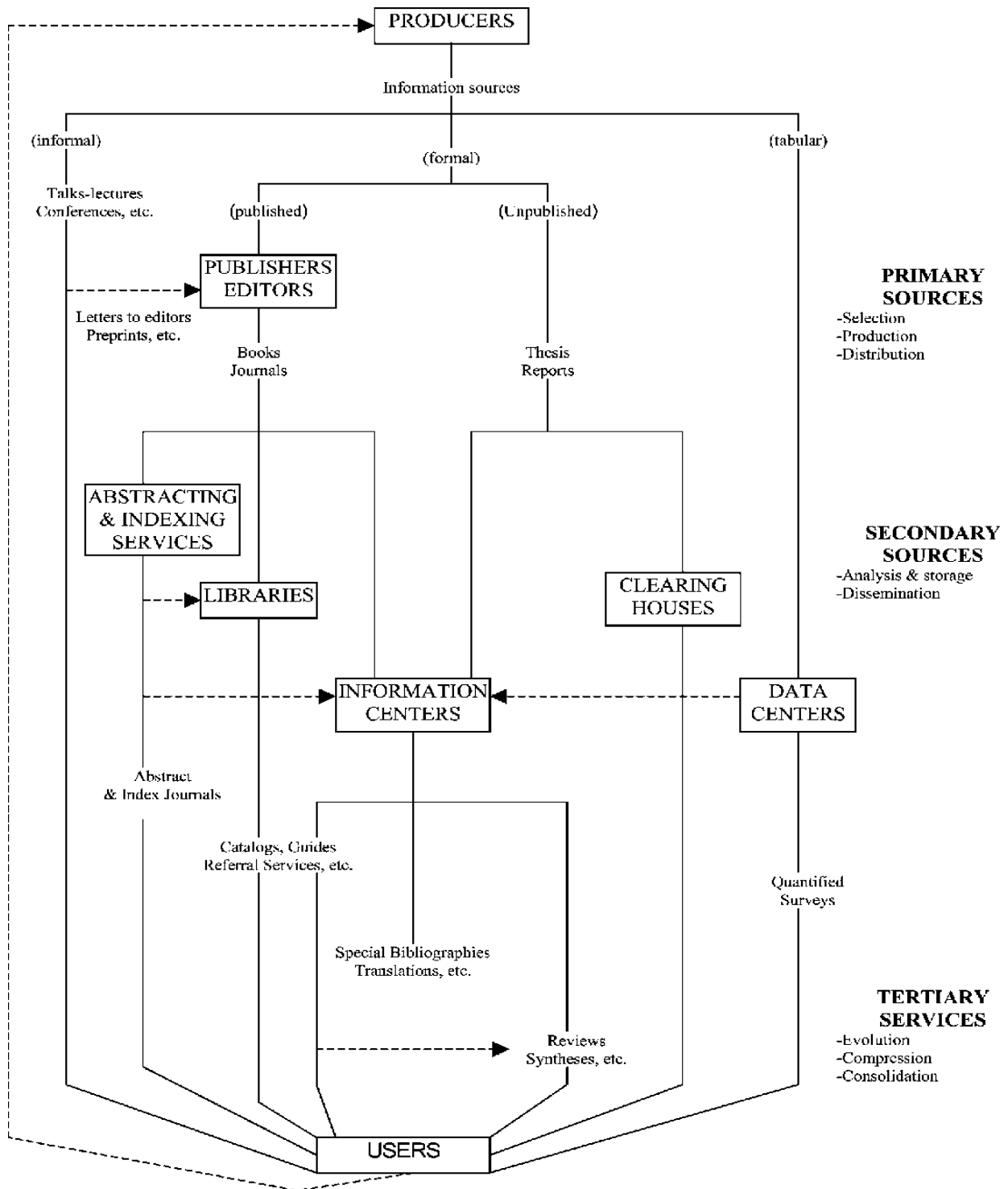


Figure 3. 2 UNISIST model (UNISIST, 1971)

UNISIST was a programme developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to improve scientific and technological communication. The UNISIST programme was terminated, but the model was modified and is an important analytical tool in information science. According to Søndergaard et al. (2003), there was need to align the model to LIS approaches and the developments in information technology. For LIS, the model offers an important sociologically oriented perspective on the activities of scholarly publishing (Søndergaard et al., 2003). The model is used to define relations between various kinds of scientific and scholarly documents. It makes most of the elements being explored in this study which are products of scholarly work, producers of knowledge, intermediaries and publishing institutions. One particular limitation of the UNISIST model is that it operates only for a basic concept of information centre by simply providing dissemination of knowledge. The model uses the concept of information centre as an umbrella term for libraries, documentation centres, and other similar activities concerning the collection, dissemination, storage, retrieval, and organization of documents (Hjørland et al., 2005). However, the concept of an information centre in the model is ambiguous. In fact, the model's relation to libraries or documentation centres is not clarified (Hjørland et al., 2005). According to the model, the information centre combines some of the functions of secondary journals and specialized libraries, to which are added specific duties. This model was not found fit for the study as it only treats the organisation and dissemination of research output.

3.4 The Scientific Communication Lifecycle Model

The Scientific Communication Lifecycle Model was developed by Bjork in 2007 by improving an earlier model advanced by Björk and Hudlund in 2005 (White, 2019; White & King, 2020). Björk and Hedlund (2005), and later Björk (2007) incorporated new models of publishing available because of institutional repositories and the open access movement. Björk's (2007) model was depicted in a forty-eight-page document with thirty-three diagrams in hierarchies up to seven levels deep (Björk, 2007; Ketchum, 2017). The fourth version is adopted in this study (see Figure 3.3). The scope of the model is the whole scientific communication value chain, from initial research to the assimilation of research results to improve every-day life for the benefit of the society (Bjork, 2007; Lugovic et al., 2015; Vlasenko et al., 2021). It is for this reason that the model was fit for the study as it treats the whole research process including the variables of publishing scientific and scholarly works. The model treats both informal and formal communication, as well as the publishing of data and scholarly output (Bjork, 2007; Vlasenko et al., 2021), which was addressed under objective number one of this study.

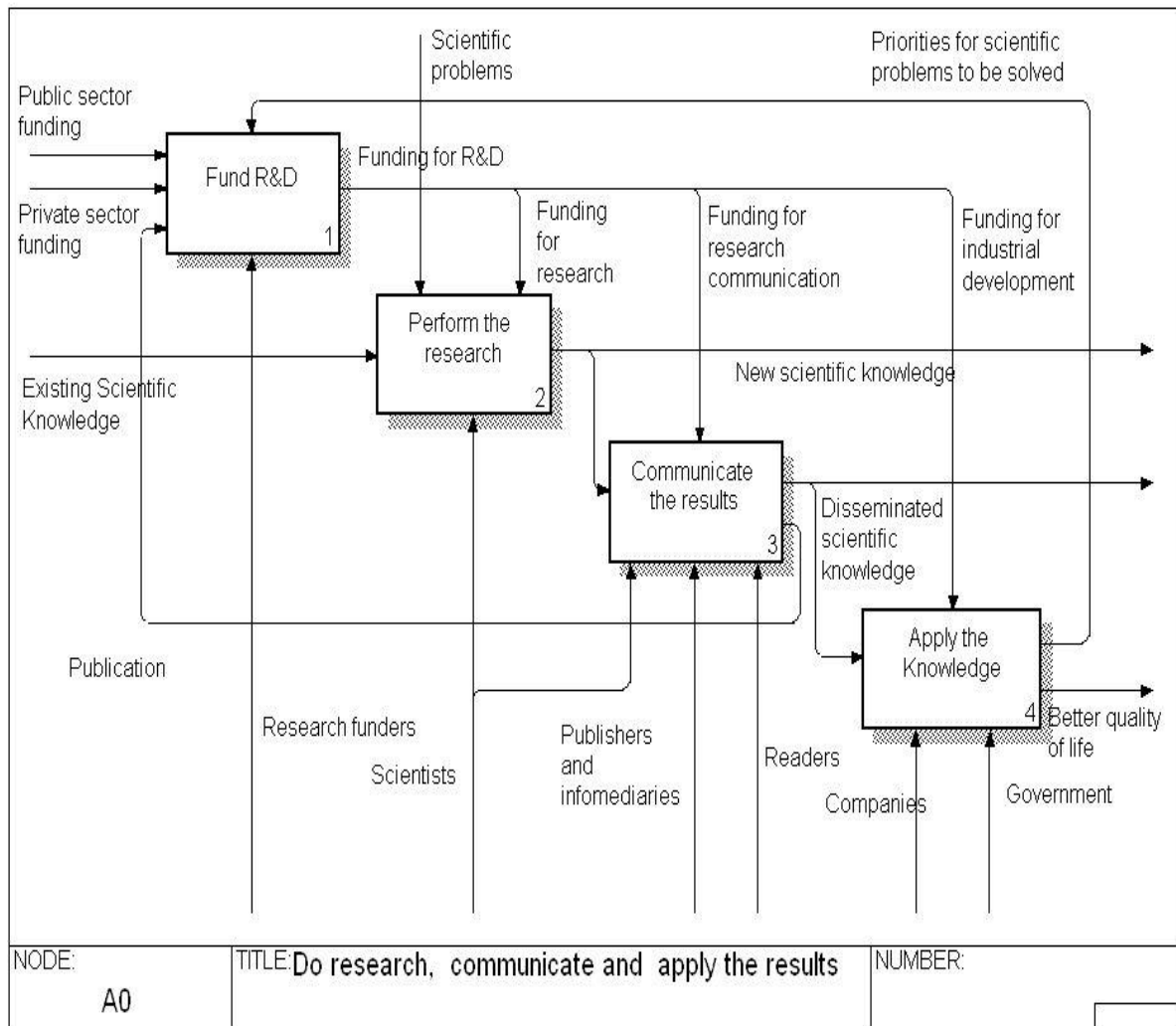


Figure 3. 3 The Scientific Communication Lifecycle Model (Björk, 2007)

3.4.1 Stages of the model

This model depicts the whole scholarly communication life-cycle consisting of four separate stages. The stages include fund research and development; perform the research; communicate the results; and apply the knowledge (Björk, 2007). These core activities have also shaped the themes of this study. The proceeding paragraphs present the main constructs of the model.

3.4.1.1 Fund research and development

As well alluded to in the previous paragraphs, this model consists of four separate stages. One important aspect of the process is the funding of the activities in scholarly publishing which was the focus of objective number four of the study on factors affecting scholarly publishing in academic libraries. Bjork (2007, p. 8) indicated that, although parts of the overall process are carried out by commercially operating parties, almost all stages are predominantly funded by public finance via university budgets, research grant organisations.

However, these funding activities are not void of challenges taking note of the persistent budgetary challenges in public universities which results in failure of universities to acquire the necessary technological infrastructure. Björk (2007) states that publishing demand resources, which cause overhead costs for an institution. For instance, setting up and maintaining the technological and technical infrastructure for a portfolio of publications is such an overhead causing item.

3.4.1.2 Perform the research

Perform the research is the second stage of the model. Perform the research includes the activities of several stakeholders which was addressed under objective number three of this study which looked at library staff competences in scholarly publishing. In relation to this, the model according explicitly includes the activities and skills of all the stakeholders in the overall publishing process (Bjork, 2007; Lugovic et al., 2015) including the activities of:

- *Researchers* who perform the research write the publications and act as reviewers;
- *Publishers* who manage and carry out the actual publication process; and
- *Librarians* who help archiving and in providing access to the publications.

3.4.1.3 Communicate the results

Communicate the results, a theme in this study addressed in objectives one and two, is the third stage of the model, with an end result called disseminated scientific knowledge, reflecting the viewpoint that scientific results which have been published, but which are not read by the intended readers are rather useless (Björk, 2007). Using this model, Lugovic et al. (2015) and Ketchum (2017) extends the communication of results to include publishing of scientific and scholarly works invested among commercial publishers, libraries and intermediaries. In relation, this study looks at the types of scholarly works published by university libraries and the issues of access among the university community on these published materials. Björk (2007) states that the model takes into account the fact that scientists not only publish traditional-looking textual papers but also data and models. In agreement, Ketchum (2017) added that communicating the generated knowledge involves publishing new data and other analytical objects through publications, sharing of data, models, contributions to conferences and presentations, and the deposit of new data in databases and repositories. The model also takes note of scientific publications which are usually published by universities (Björk, 2007). Typical examples include working papers, research reports and theses and dissertations which universities are increasingly putting them into their institutional repositories.

3.4.1.4 Apply the knowledge

Apply the knowledge is the last stage which in the model shows the relevance of research in order to achieve the improved quality of life which research funders look for (Björk, 2007). This stage was addressed under objective number one. Scholarly publishing is best described by a set of core functions that were identified when the longest-standing scholarly journal, the *Philosophical Transactions of the Royal Society of London*, was being established in 1665 and listed four functions of scholarly publishing namely: registration, archiving, certification and awareness (Directorate General for Research and Innovation, 2019). These functionalities make the services that are offered by university libraries in scholarly publishing which was the focus of objective number one of this study. Registration is meant to establish that work had been undertaken by individuals or groups of researchers at a particular time; certification is meant to establish the validity of the findings; dissemination is meant to make scholarly works and their findings accessible and visible; and preservation, ensures that the ‘records of science’ are preserved, and remain accessible, for the long term.

In support, Park and Shim (2011) explain that the registration function is reflected in publishing, intellectual property, and licensing services; the archiving function is reflected in digitisation and repository services; the certification function, is reflected in expert review and research support services and; the awareness function is reflected in knowledge-sharing-platform and search aid services. Furthermore, the model can also work as a roadmap for positioning various new initiatives, such as repositories (Björk, 2007), a notable scholarly publishing service in university libraries.

3.4.2 Studies that have used the adopted model

The Scientific Communication Lifecycle Model advanced by Björk has been adopted by various authors in literature to discuss these issues raised by Park and Shim (2011), and inform scholarly publishing in university libraries. This model has been found to be useful for assessing scholarly publishing and has successfully been used by authors and researchers to support academic scholars’ information dissemination processes (White, 2019). For example, Ketchum (2017) discussed the model and its use for the health sciences librarian in responding to change in scholarly communication. Vlasenko et al. (2021) used the model in developing and supporting a comprehensive program of activities to develop sustainable core skills in novice scientists. White (2019) used the model to investigate the scholarly communication guidance as a core service offered to doctoral students by the Kwame Nkrumah University of Science and Technology academic library in Kumasi, Ghana.

Waller and Bazeley (2014, p. 488) applied the model at Miami University, Oxford Ohio. It was generated from the background that Miami University has a large and active body of faculty members who perform research and publish regularly, yet, the university community has been slow to recognize the changes occurring in the scholarly communication landscape including the publishing of research results in local university platforms such as the library's institutional repository.

3.4.3 Strengths of the model

The major strength of the model is that it treats the whole research process including the variables of publishing scientific and scholarly works. It therefore addresses many aspects of the research lifecycle from the moment research is generated to the point it is shared and disseminated as findings. The model also treats both informal and formal communication, as well as the publishing of data and scholarly output (Bjork, 2007).

3.4.4 Limitations of the model

The current version of the model has some limitations, which should be kept in mind. Its main emphasis is on the publication and dissemination of research results in the form of publications that in the end can be printed out and studied on paper. Thus, forms of communication such as oral communication, unstructured use of email and multimedia, which all are essential parts of the scientific knowledge management process, as well as publishing of data and models, are only shown on a high level of abstraction in the model (Björk, 2007).

The variables of Bjork's (2007) Scientific Communication Lifecycle Model are mapped with the research questions of the study (see Table 3.1) in order to conceptualise such variables and provide a basis for understanding dynamics of the themes of the study.

Table 3. 1 Mapping the research questions to the variables of the adopted model

Research questions	Variables being addressed	Source of variables	Selected prior studies that used these models
What are the scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries?	Institutional repositories, scholarly communication, and scholarly publishing services. Types of scholarly works published	The Scientific Communication Lifecycle Model (Björk, 2007) The Scientific Communication Lifecycle Model (Björk, 2007)	<ul style="list-style-type: none"> • White (2019) used the model to investigate the scholarly communication guidance as a core service by the KNUST library staff in Kumasi, Ghana. • A review of literature by Ketchum (2017) discussed the model and its use for the health sciences librarian in responding to change in scholarly publishing. • Vlasenko et al. (2021) used the model in developing and supporting a comprehensive program of activities to develop sustainable core skills in novice scientists in Ukraine. • Waller and Bazeley (2014) applied the scholarly communication lifecycle in their study on empowering faculty in transforming scholarly communication at Miami University, Oxford Ohio.
What are the strategies in promoting scholarly publishing at MZUNI, UNIMA, KUHeS and MUBAS libraries?	Institutional repositories Scholarly publishing policies	The Scientific Communication Lifecycle Model (Björk, 2007)	
What competences do MZUNI, UNIMA, KUHeS and MUBAS library staff have in scholarly publishing?	Institutional repositories Librarians' skills. Knowledge levels in publishing	The Scientific Communication Lifecycle Model (Björk, 2007)	
What are the factors affecting MZUNI, UNIMA, KUHeS and MUBAS libraries in scholarly publishing?	Technological infrastructure, perception of librarians, library staff competencies, funding, technical support, and technological issues	The Scientific Communication Lifecycle Model (Björk, 2007)	

3.5 Summary of the chapter

This chapter has presented and discussed the Scientific Communication Lifecycle Model developed by Björk (2007) and why it has been adopted in this study. It also examined other models, their assumptions, their key strengths and weaknesses and why they were not adopted by this study. Chapter four which follows provides the research methodology.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the methodology that was used to carry out this study. Research methodology is the systematic, theoretical analysis of the methods applied to a field of study (Creswell, 2014). It encompasses concepts such as paradigms, theoretical models, phases, and quantitative or qualitative techniques. The chapter explains how the research problem introduced in chapter one was pursued to come up with results that are presented in chapter five. In a nutshell, this chapter outlines research paradigms, research design, research methods, population of the study, sampling strategies, sample size, data collection procedures, research instruments, reliability of instruments, ethical considerations and the dissemination of results. The current study intended to answer the overarching research question: what are the scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries in Malawi? In particular, the following sub questions were developed for the study:

- What are the scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries?
- What are the strategies for promoting scholarly publishing services at MZUNI, UNIMA, KUHeS and MUBAS libraries?
- What competences do MZUNI, UNIMA, KUHeS and MUBAS library staff have in scholarly publishing?
- What are the factors affecting MZUNI, UNIMA, KUHeS and MUBAS libraries in scholarly publishing?

4.2 Research paradigm

Creswell (2014, p. 6) stipulates that research is supported by “various philosophical beliefs called paradigms”. Abdullah Kamal (2019, p. 1388) opines that the term paradigm is perceived as “a way of seeing the world that frames a research topic and influences the way that researchers think about the topic”. Several paradigms exist that dominate the research discourse in the social sciences, such as pragmatism, interpretivism, positivism and post-positivism (Creswell, 2014, p. 6). This study falls within pragmatism paradigm. However, to form a basis upon which the chosen paradigm was plausible for the study, all paradigms are briefly expounded in order to provide their strengths and weaknesses and justify why they were not adopted in this study.

4.2.1 Interpretivism

Interpretivism paradigm also referred to as constructivism, holds the view that social realism is communally built based on peoples' interpretations of reality (Schutt, 2019). This approach makes an effort to get inside the lives of the subjects being studied, and to understand and interpret their thoughts on particular contexts. Interpretivism uses qualitative methods to understand multiple realities as it views knowledge as socially constructed multiple realities with no single truth to it (Creswell, 2014). Social behaviour from which social reality emanate requires meaning, which is usually not stable due to different experiences of human beings leading to inconsistencies in the pattern of data (Gray, 2013), hence this paradigm uses purely qualitative data collection strategies (Creswell, 2014; Gray, 2013). The current study found this paradigm inappropriate because of its focus on qualitative data only.

4.2.2 Positivism

Positivism states that true knowledge is that which can be arrived at through use of the senses and gathering facts and supplying evidence that provide the basis for laws (Bryman, 2015; Gray, 2013). Moreover, inquiry should be based on scientific observation rather than philosophical speculation (Creswell, 2014; Gray, 2013). Researchers therefore conduct experiments to discern natural laws through direct manipulation and observation. This in itself calls a researcher to be independent in his/her research and demands very little interaction with one's research participants during the research. Creswell and Plano Clark (2011) state that the positivist approaches represent the traditional form of research which is purely quantitative in nature. In this study, the researcher interacted with participants to get in-depth information on scholarly publishing services in university libraries. Therefore, the researcher did not find this paradigm appropriate since it only involves the collection of quantitative data. Neuman (2020) further argues that positivist approaches are not suitable for the study of humans and their behaviour because they fail to take into account context and respondents' experiences.

4.2.3 Post-positivism

This world belief was born in the 1950s and 1960s due to dissatisfaction among researchers about positivism (Teddlie & Tashakkori, 2009). The common characteristic of post-positivists is that they still believe in pure scientific measurement of the research (Creswell, 2014). Thus, developing numeric measures of observations. This means that post-positivism paradigm supports a purely quantitative research method. As such, post-positivist approach was not appropriate for this study since the current study did not only use pure quantitative measurements of valuables but also qualitative measurements.

4.2.4 Pragmatism

Pragmatism is a basis for mixed methods, seeing qualitative and quantitative research methods as complementary strategies which help researchers to holistically answer the research questions through different means (Creswell, 2014). Pragmatists also make use of mixed methods in order to collect both sets of data (Creswell, 2014). For example, administering questionnaires and conducting interviews as was applied in this study with a purpose of integrating the results. By adopting the pragmatic approach, the researcher assumed more flexibility in selecting appropriate methods that helped investigate the problem more holistically. This is in line with what is alluded to by Creswell (2009, 2014) and Saunders et al. (2019), that it is known that pragmatic researchers hold a combination of quantitative and qualitative research hence researchers are at liberty to choose the methods techniques, and procedures of research that best meet their needs and purposes. Similar studies by White (2019) in Ghana and Wengu'a et al. (2017) in Kenya also adopted the pragmatism paradigm.

4.3 Research design

Pandey and Pandey (2015) describe research design as the framework that specify the methods and procedures for collecting, measuring, and analysing data. Creswell (2014, p. 12) describes research designs as “types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research study”. Each of the research approaches have unique research designs. Quantitative designs are categorised into two types namely, experimental and non-experimental designs. Qualitative designs, on the other hand, are categorised into five types and these include narrative, phenomenology, grounded theory, ethnographies and case study (Cohen et al., 2018). Quantitative and qualitative designs were not adopted because the study used mixed method designs as described in subsequent sections. Mixed method designs are categorised into six types including convergent parallel mixed methods, explanatory sequential mixed methods, and exploratory sequential mixed methods; embedded design, transformative design and multiphase mixed methods designs (Creswell & Plano-Clark, 2011; Creswell, 2014).

4.3.1 Convergent mixed methods

Creswell and Creswell (2018) define a convergent design as a form of mixed methods design in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this case, both forms of data are collected roughly at the same time then integrated in the interpretation for the overall results.

4.3.2 Embedded design

The purpose of embedded design, as Creswell and Plano-Clark (2011) state, is to collect quantitative and qualitative data simultaneously or sequentially, but to have one form of data play a supportive role to the other form of data. The reason for collecting the second form of data is that it augments or supports the primary form of data. Within this type of study, the researcher gathers and analyses both quantitative and qualitative data.

4.3.3 Exploratory sequential

In exploratory sequential design, the researcher first of all collects qualitative data and then proceeds to collect quantitative data (Creswell & Plano-Clark, 2011). The purpose of an exploratory sequential mixed methods design, which involves gathering qualitative data first, is to explore a phenomenon in detail and then collecting quantitative data to explain relationships found in the qualitative data.

4.3.4 Explanatory sequential

This study used an explanatory sequential design. It consisted of first collecting quantitative data followed up with qualitative data that explained, expanded or elaborated on the quantitative results (Creswell & Plano-Clark, 2011). The rationale for this design was that the quantitative data results provided a general picture of the research problem, therefore, more analysis, through qualitative data refined and explained the results. Quantitative data was collected from library staff and then after analysis, follow-up interviews were conducted with university librarians and senior assistant librarians. White and King (2020) also employed an explanatory sequential design in a study on scholarly publishing guidance in Ghana.

4.4 Research methods

Creswell (2014, p. 16) defines research methods “as strategies of data collection, analysis and interpretation that researchers propose for their studies”. They include “qualitative, quantitative and mixed methods” (Creswell, 2014). The choice of the pragmatic philosophy determined the mixed methods research approach that was chosen for this study.

4.4.1 Quantitative methods

Quantitative methods seek to quantify data in form of numbers, provide statistics and generate results from a sample of the population of interest (McDonald & Headlam, 2014). The strength of the quantitative method is that it is mainly suitable for studying large groups of people and give an objective perspective of a research problem. Nevertheless, quantitative method was deemed not suitable for this study since it required both quantitative and qualitative data.

4.4.2 Qualitative methods

According to Crossman (2018), qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or a human problem. The strength of qualitative research method is that it enables in-depth study of selected cases and descriptions of complex phenomena in local contexts. However, the inquiry is subjective and biased towards the researcher's interpretation (Creswell, 2014). The research questions posed in this study could not have been adequately addressed through the use of purely qualitative methods since this study also required the collection of quantitative data.

4.4.3 Mixed methods approach

Guided by the pragmatism paradigm, the study adopted mixed methods approach. The mixed methods approach allowed the researcher to gather quantitative and qualitative data, and integrated the data from the two strands and then drew interpretations based on the combined strengths of both sets of data. Creswell and Plano-Clark (2011), Doyle and Byrne (2016), and Ngulube (2013) suggest that the justification for using mixed methods are offsetting weakness and providing stronger inferences, explanation, complementarity and completeness. The disadvantage of mixed methods is that it is expensive to implement and time consuming. This study integrated the case study and survey research designs which is in accordance with pragmatism paradigm. The element of investigation in the case study might be several incidents (a multisite study) or a distinct case (a within-site study) (Creswell, 2009, 2014; Yin, 2014). Specifically, the present study used a multisite study by exploring MZUNI, UNIMA, KUHeS and MUBAS university libraries. Mixed methods was also employed by similar studies on scholarly publishing in university libraries by White and King (2020).

4.5 Study population

A population is the "entire set of objects, events or individuals with clearly defined common traits or attributes that the researcher is interested in studying" (Thomas, 2017, p. 141). The population of this study (see Table 4.1) comprised of library staff; university librarians, senior assistant librarians, assistant librarians, and senior library assistants. These groups of people were targeted because the researcher believes that the library staff are responsible for and assist in the provision of scholarly publishing services within the library. The university librarians are the ones responsible for the management of the library and administration of research policies respectively.

Table 4. 1 Target population (N=28)

Institution	Category of population				Total
	University Librarian	Senior Assistant Librarian	Assistant Librarian	Senior Library Assistant	
MZUNI	1	3	2	3	9
UNIMA	1	2	2	2	7
KUHeS	1	4	2	0	7
MUBAS	1	1	2	1	5
Total	4	10	8	6	28

4.6 Sampling

According to Pickard (2013, p. 59) “sampling is done when it is not practical to include the whole research population in your study”. There are two major types of sampling techniques: probability and non-probability (Crossman, 2018; Kumar, 2014). The major distinction between these two sampling techniques is in the way samples are generated for a study. Probability sampling is based on the concept of randomisation where each element within the population has an equal and independent chance of being selected (Bless et al., 2013). Popular sampling techniques under probability sampling are simple random sampling; systematic sampling, stratified sampling, stratified random sampling; multistage random sampling; and cluster sampling (Kumar, 2014). In non-probability sampling a sample for a study is unknown and samples are acquired from homogeneous populations (Bless et al., 2013). Sampling techniques under non-probability sampling are judgmental sampling or purposive sampling; quota sampling; convenience sampling, extensive sampling, and snowball sampling (Taherdoost, 2016). Probability and non-probability techniques can be used in either quantitative or qualitative studies (Neuman, 2020). It is common place for mixed methods approach to use more than one kind of sampling (random, non-random) and to use samples of different sizes, scope and types (Teddlie & Tashakkori, 2009). Sampling techniques used in mixed methods research approach include parallel, sequential mixed sampling, and multilevel (Cohen et. al., 2018). This study used sequential mixed methods sampling in which two samples, both probability and non-probability, were selected, one after the other. In particular, this study applied a census for the quantitative sample and purposive sampling for qualitative samples. Sequential mixed methods sampling applying purposive sampling technique was also used by White (2019) in a study on scholarly publishing guidance for doctoral students in Ghana. The next section explains how the sample sizes were arrived at.

Based on a purposive sampling technique and census method as discussed in the preceding section, in all, four university librarians, ten senior assistant librarians, eight assistant librarians and six senior library assistants were included in the study (see Table 4.2).

Table 4. 2 Sample size of the study (n= 28)

University	Category of population			
	University librarian	Senior assistant librarian	Assistant librarian	Senior library assistant
MZUNI	1	3	2	3
UNIMA	1	2	2	2
KUHeS	1	4	2	0
MUBAS	1	1	2	1
Subtotal	4	10	8	6
Total sample	28			

4.7 Data collection instruments

Gray (2013) defines data collection instruments as tools used by researchers to collect data about the subject under study in the research process. The adoption of an explanatory sequential research design in this study meant that the study had two phases of data collection. Therefore, the researcher used a questionnaire and an interview guide to gather quantitative and qualitative data respectively.

4.7.1 Questionnaires

Questionnaires were used to collect quantitative data from senior library assistants and assistant librarians. The questionnaire had sections A to E. Section A sought to collect demographic data, section B collected data on scholarly publishing services, section C collected data on strategies in promoting scholarly publishing, section D collected data on competencies of library staff in scholarly publishing, and section E gathered data on factors affecting university libraries in scholarly publishing. This study adopted the questionnaire due to its ability to elicit quantitative data on unobservable behaviour, such as feelings, attitudes, ideas, opinions, and viewpoints. The questionnaire was comparatively convenient and inexpensive since it was easy to use and helped maintain confidentiality of respondents (Kumar, 2019). It also allowed to gather quantitative data from the whole sample to ensure representativeness (Pickard, 2013).

However, the questionnaire is demerited on the premises that it demands limited responses; and allocates little if not none existence of personal contact between the researcher and respondents and therefore eliminates any opportunity to clarify issues and probe for further information (Kumar, 2019). Pandey and Pandey (2015) also state that the questionnaire is prone to wrong feedback. Taking into account such weaknesses, the researcher triangulated the data collected using a questionnaire with qualitative data collected through interviews as articulated in section 4.7.2. In this study, the researcher hand-delivered printed questionnaires to library staff, and later collected them after they were completed by the respondents. The questionnaire items were adopted from the Scientific Communication Lifecycle Model by Bjork (2007) and adopted questionnaire items from other studies who also conducted similar studies on scholarly publishing in university libraries (Sanjeeva, 2017; Wengu'a et al., 2017; White, 2019).

4.7.2 Interview guide

After analysis of quantitative data, qualitative data was collected from the university librarian and senior assistant librarians from the universities using follow up interviews to provide more depth in the study and help explain quantitative findings. Similar to the questionnaire used, the interview had sections A to D. Section A collected data on scholarly publishing services, section B collected data on strategies in promoting scholarly publishing, section C collected data on competencies of library staff in scholarly publishing, and section D gathered data on factors affecting university libraries in scholarly publishing. In support, Creswell (2009, 2014) recommends that researchers should use interviews to get more depth on quantitative data. Therefore, the follow-up on the quantitative investigation with an interview guide was set up to collect more comprehensive, precise information than statistical tests can provide. Among many advantages, an interview presented great flexibility, enabled the researcher to enter new areas and produce richer data from the participants. The interview also helped the researcher to develop a rapport with the informants to elicit people's own views and benefited in uncovering issues that have not been anticipated by the researcher (Pandey & Pandey, 2015).

4.8 Pre-testing of research instruments

Pretesting is a method of checking that questions work as intended and are understood by those who are likely to respond to them (Cohen et. al., 2018). The data instruments were pre-tested on two senior library staff and one assistant librarian at MUST. Pretesting helped to ensure that the instruments were clear, consistent, and correct enough to solicit valid and reliable data (Gray, 2013). Feedback obtained was used to improve the instruments.

4.9 Data collection procedures and management

Data collection procedure is the gathering of specific information to serve or prove some facts and further a researcher's understanding of the topic under study (Kombo & Tromp, 2016). They include the strategies that researchers employ in collecting information or data about objects of study and the settings in which they occur. The researcher self-administered 19 questionnaires at MZUNI, KUHeS and MUBAS while nine questionnaires were administered by a research assistant at UNIMA. All the interviews in this study, were solely conducted by the researcher using face to face interactions.

Questionnaire data library staff took three weeks to collect. Interview data was collected for a period of one week from the university librarians (UL) and senior assistant librarians (SAL). Data collection instruments were in English language, and were not translated in any local language since the study was conducted at institutions of higher learning where the formal mode of communication is English and all participants were conversant and proficient with.

Prior arrangements with participants was made before administering questionnaires for them to fill at their free time. Appointments were also sought for and arranged for the interviews. The researcher booked appointments with the sampled participants because they are busy managers. Consent letters were written and given to participants together with the instruments and allowed some ample time for their consent.

In this study, the researcher used the delivery and collection method whereby the researcher hand-delivered printed questionnaires to library staff, and later collected them after they were completed by the respondents. The interviews took an average of 30 minutes each and were recorded on a Redmi smartphone. Permission to record the interviews was sought from participants. After the study, data was stored in a password protected computer.

Table 4.3 presents mapping of data collection tools against research objectives, data variables and data analysis.

Table 4. 3 Concept mapping

Research question	Variables being addressed	Sources of data	Data tool	Data analysis technique
<p>What are the scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries?</p> <p>What type of scholarly works are published by MZUNI, UNIMA, KUHeS and MUBAS libraries?</p>	<p>Scholarly publishing issues (copyright, open access, plagiarism, metadata services, publishing ISSN assignment, and digitization).</p> <p>Institutional repositories, Types of scholarly communication Completed research including formal and informal publications, journal articles, e-books, book reviews, ETDs, and conference papers and proceedings.</p>	<p>Senior Library staff</p> <p>UL, SAL</p> <p>Senior Library staff</p> <p>UL, SAL</p>	<p>Questionnaire</p> <p>Interview guide</p> <p>Questionnaire</p> <p>Interview guide</p>	<p>SPSS</p> <p>Thematic</p> <p>SPSS</p> <p>Thematic</p>
<p>What are the strategies in promoting scholarly publishing at MZUNI, UNIMA, KUHeS and MUBAS libraries?</p>	<p>Institutional repositories</p> <p>Scholarly publishing policies</p>	<p>Senior Library staff</p> <p>UL, SAL</p>	<p>Questionnaire</p> <p>Interview guide</p>	<p>SPSS</p> <p>Thematic</p>
<p>What competences does MZUNI, UNIMA, KUHeS and MUBAS library staff have in scholarly publishing?</p>	<p>Institutional repositories</p> <p>Librarians' skills: content selection, curation; institutional repository management implementation of technical standards for content discovery; management of hardware and software.</p>	<p>Senior Library staff</p> <p>UL, SAL</p>	<p>Questionnaire</p> <p>Interview guide</p>	<p>SPSS</p> <p>Thematic</p>
<p>What are the factors that affect scholarly publishing at MZUNI, UNIMA, KUHeS and MUBAS libraries?</p>	<p>Technological infrastructure, staffing and organizational structure, perception of librarians, library staff competencies, funding, technical support, technological issues and faculty compliance</p>	<p>Senior Library staff</p> <p>UL, SAL</p>	<p>Questionnaire</p> <p>Interview guide</p>	<p>SPSS</p> <p>Thematic</p>

4.10 Reliability and validity of research instruments

Reliability is concerned with consistency, predictability and stability of instruments used in research (Kumar, 2010, p. 181). It questions whether the same results could be recorded if another researcher were to conduct similar research using same instruments. On the other hand, validity establishes appropriateness and accuracy of the research procedures used to find answers (Kumar, 2010, p. 177). Validity questions if the research is really measuring what it is supposed to measure, thus getting answers to questions it was intended to answer.

To ensure validity of data, the questionnaire and interview guide content were sent to experts for rigorous checking to determine its appropriateness, and whether the research questions were answering the research problem.

In ensuring the reliability of a questionnaire and interview guide, the researcher may use appropriate sampling methods, a standardised questionnaire and interview guide, or the tools based on established theories or findings of previous studies (Middleton, 2020). The researcher therefore designed the questionnaire and interview guide based on findings from prior studies to align the themes in the questionnaire with consistent trends within the topic of study. Further, a theoretical model was considered a key tool for conceptualising variables and hence, the research tools were based on the variables of the Scientific Communication Lifecycle Model (Bjork, 2007). The researcher also involved an expert to cross-check the codes as explained by Creswell (2014) that in qualitative research, reliability often refers to the stability of responses to multiple codes of data sets. The study also employed methodological triangulation which is used to cross-check the accuracy and truthfulness of the findings. This was achieved by counterchecking the truthfulness of both groups of participants' responses to the questions raised. In this study, conclusions were based on findings from the two adopted research approaches in which data from questionnaires and interviews formed the basis for discussing the findings.

4.11 Data analysis strategies

The process of analysing data involves interpreting and summarising data so that the most important features of the data are communicated (Creswell, 2014). The researcher analysed quantitative data using descriptive statistics aided by the Statistical Package for Social Science (SPSS) version 20. For qualitative data, the researcher manually transcribed the data thereafter thematic analysis was employed to generate codes and themes for the study.

4.12 Ethical considerations

Thomas (2017, p. 36) define ethical considerations as principles of conduct about right or wrong in research. The researcher sought ethical clearance from MZUNI Research Ethics Committee (MZUNIREC) and the University registrars in the various universities (UNIMA, KUHeS, and MUBAS) to collect data.

To ensure anonymity, the respondents were not required to indicate their names, addresses and telephone numbers on the questionnaire. Moreover, the researcher attached numerical tags to the interview guides to conceal and protect participants' identities.

To adhere to confidentiality and privacy issues, the researcher protected personal information of respondents by storing the data in a secure computer with password protection.

To adhere to issues of informed consent, the researcher attached an informed consent letter on the questionnaire for the participants before data collection began. Participants were also assured that participation in the research was voluntary and they could withdraw from the study at any time as they wished without any consequences.

4.13 Dissemination of results

The researcher presented the findings of the study at a Viva Voce organised by the Department of Information Sciences. Secondly, the researcher is expected to publish papers from the study in refereed journals. Thirdly, a copy of the research report can be accessed from the Department of Information Sciences at Mzuzu University and in the institutional repository at MZUNI, UNIMA, KUHeS, and MUBAS libraries.

4.14 Summary of the chapter

This chapter has discussed the choice of the research paradigm of pragmatism, the exploratory sequential design, and the mixed methods research approach used in examining the scholarly publishing services of university libraries at MZUNI, UNIMA, KUHeS, and MUBAS. This chapter has also detailed the study population, sampling techniques and sample size, research instruments, and validity and reliability of the research instruments. It has further explained the data collection exercise, and how the data was managed and analysed and how ethical considerations were adhered. Chapter five which follows, provides a detailed presentation and analysis of the study findings.

CHAPTER FIVE

DATA PRESENTATION AND ANALYSIS

5.1 Introduction

The purpose of this study was to examine the scholarly publishing services of university libraries in Malawi. As discussed in Chapter four, the researcher collected quantitative data through questionnaires which were self-administered and some with the help of a research assistant. Qualitative data was collected through follow-up interviews that the researcher conducted with university librarians, and assistant librarians. Creswell (2009) avers that data analysis is a key aspect of any research since it helps in making conclusions and generalisations from the data as it relates to the problem statement. Since the study employed an explanatory sequential mixed method design, qualitative results are presented immediately after the quantitative findings for each objective. Data extracted from the interviews is presented in verbatim and analysed based on related content and themes.

The study addressed the following objectives:

- Ascertain scholarly publishing services offered by MZUNI, UNIMA, KUHeS and MUBAS libraries;
- Determine strategies for promoting scholarly publishing services at MZUNI, UNIMA, KUHeS and MUBAS libraries;
- Establish competences of MZUNI, UNIMA, KUHeS and MUBAS library staff in scholarly publishing; and
- Determine the factors affecting MZUNI, UNIMA, KUHeS and MUBAS libraries in scholarly publishing.

5.2 Response rate

Questionnaires were distributed to 28 senior library staff. From the total 28 questionnaires, 24 (86%) were successfully completed and returned. For interviews, the study targeted 12 participants and of these, interviews were successfully conducted with nine participants. The high response rate might be attributed to the fact that there was willingness of respondents to participate in the study. The participants promptly provided feedback to the questionnaires and were open and free to articulate issues during interviews. Bryman (2015) contends that in research, a 50% response rate is acceptable and a 70% is regarded as very good. This entails that the response rate for this study was very good and ready for analysis.

5.3 Demographic information of the respondents

The first section of the questionnaire sought the demographic details of respondents, namely, gender, library position, qualifications, and years of service.

5.3.1 Gender of respondents

This item required respondents to indicate their gender. The results are presented in Figure 5.1.

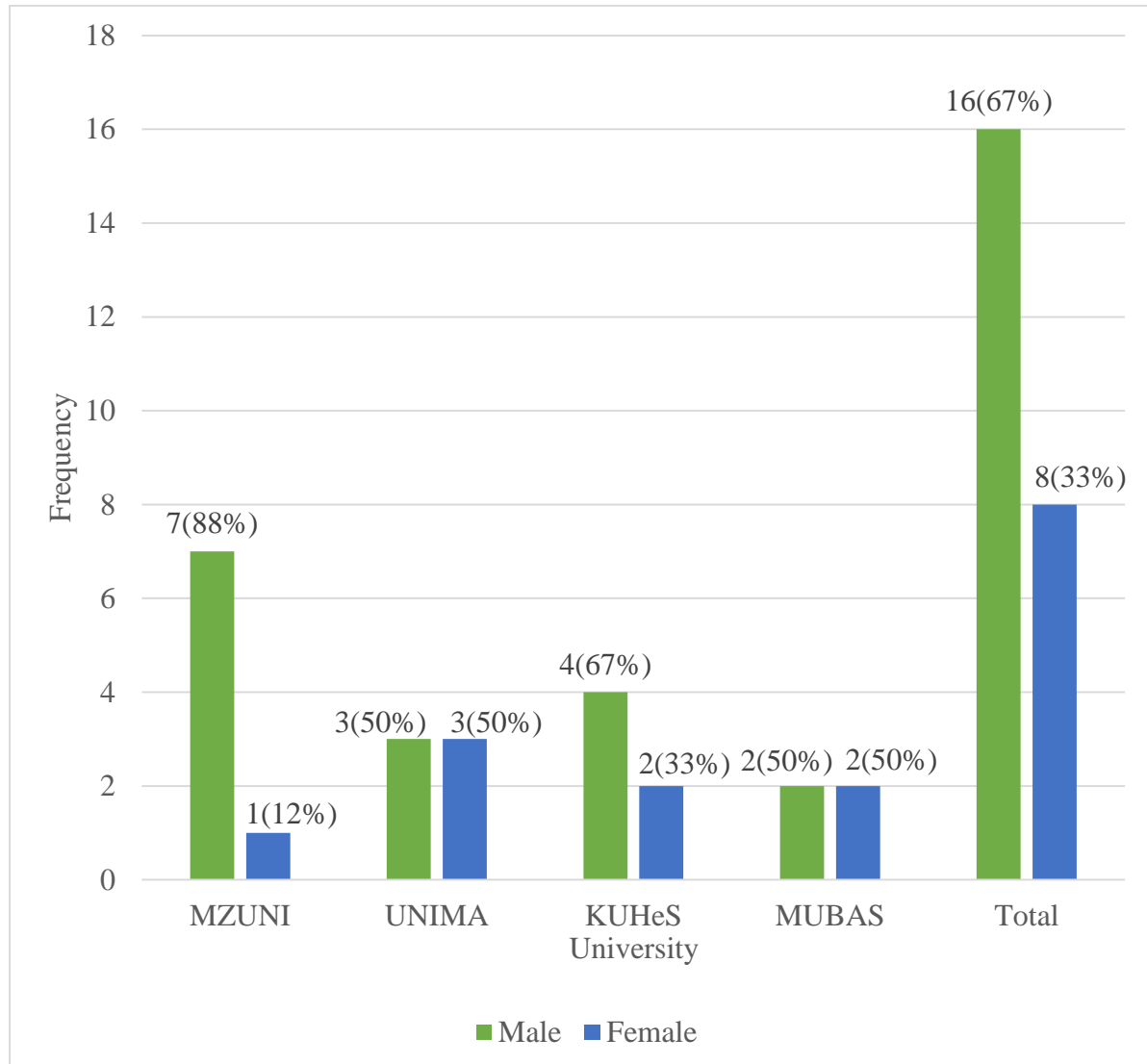


Figure 5. 1 Gender of respondents (n=24)

Results presented in Figure 5.1 show that there were a total of 16 (67%) males and eight (33%) females who participated in the study. Out of the 16 males, seven (88%) were from MZUNI, four (67%) were from KUHeS, three (50%) were from UNIMA, and two (50%) were from MUBAS. Of the eight females, three (50%) were from UNIMA, two (50%) from MUBAS, two (33%) from KUHeS and only one (33%) from MZUNI. The results suggest that there were more male participants than female participants in this study.

5.3.2 Library position of respondents

The study required participants to indicate the positions they held in the library. The results are presented in Table 5.1.

Table 5. 1 Library positions held by respondents (n=24)

Library position	MZUNI	UNIMA	MUBAS	KUHeS	Total
University Librarian	1(12%)	1(17%)	1(25%)	1(17%)	4(17%)
Senior Assistant Librarian	2(25%)	1(17%)	1(25%)	3(50%)	7(29%)
Assistant Librarian	1(12%)	2(33%)	1(25%)	2(33%)	6(25%)
Senior Library Assistant	4(50%)	2(33%)	1(25%)	0(0%)	7(29%)

Results in table 5.1 show that there were four (17%) University Librarians, one from each university; seven (29%) Senior Assistant Librarians out of which two (25%) were from MZUNI, one (17%) from UNIMA, one (25%) from MUBAS, and three (50%) from KUHeS; six (25%) Assistant Librarians out of which one (12%) was from MZUNI, two (33%) from UNIMA, one (25%) from MUBAS, and two (33%) were from KUHeS; seven (29%) Senior Library Assistants out of which four (50%) were from MZUNI, two (33%) were from UNIMA, one (25%) was from MUBAS, and none (0%) from KUHeS. The results show that most library staff held the position of Senior Assistant Librarian and Senior Library Assistant.

5.3.3 Qualifications held by respondents

This item asked respondents to indicate their qualifications. Results are presented in Table 5.2.

Table 5. 2 Qualifications held by respondents

Library position	MZUNI	UNIMA	MUBAS	KUHeS	Total
PhD	1(12%)	0(0%)	0(0%)	0(0%)	1(4%)
Master's degree	4(50%)	4(67%)	1(25%)	5(83%)	14(58%)
Bachelor's degree	3(38%)	2(33%)	3(75%)	1(17%)	9(38%)

Results presented in Table 5.2 show that at MZUNI, four (50%) library staff had a master's degree, three (38%) had a bachelor's degree, and one (12%) had a PhD. At UNIMA four (67%) library staff had a master's degree and two (33%) had a bachelor's degree. Five (83%) library staff at KUHeS had a master's degree, and one (17%) had a bachelor's degree. At MUBAS three (75%) library staff had a master's degree and only one (25%) had a bachelor's degree.

This study shows that the majority of library staff had a master's degree qualification.

5.4 Scholarly publishing services offered in university libraries

The second objective of the study intended to find out the scholarly publishing services offered by university libraries. It investigated the scholarly publishing services offered by university libraries and the types of scholarly works published in library platforms.

5.4.1 Scholarly publishing services in university libraries

The researcher wanted to find out the scholarly publishing services offered by libraries and respondents were asked select any of the following options: *offering*, *not offering but has capacity*, *not offering (has no capacity)* and *not sure*. The results are presented in Table 5.3.

Table 5. 3 Scholarly publishing services offered in university libraries

Scholarly publishing services	University	Offering		Not offering (has capacity)		Not offering (has no capacity)		Not Sure	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Repository services	MZUNI	8	100	0	0	0	0	0	0
	UNIMA	2	33	3	50	1	17	0	0
	KUHeS	6	100	0	0	0	0	0	0
	MUBAS	3	75	1	25	0	0	0	0
	Total	19	79	4	17	1	4	0	0
Citation management	MZUNI	6	75	2	25	0	0	0	0
	UNIMA	4	67	0	0	2	33	0	0
	KUHeS	5	83	1	17	0	0	0	0
	MUBAS	2	50	1	25	0	0	1	25
	Total	17	71	4	17	2	8	1	4
Information organisation	MZUNI	7	88	1	13	0	0	0	0
	UNIMA	3	50	2	33	1	17	0	0
	KUHeS	4	67	2	33	0	0	0	0
	MUBAS	3	75	0	0	0	0	1	25
	Total	17	71	5	21	1	4	1	4
Research clinics and promotion	MZUNI	7	88	1	13	0	0	0	0
	UNIMA	3	50	1	17	1	17	1	17
	KUHeS	5	83	1	17	0	0	0	0
	MUBAS	2	50	0	0	1	25	1	25
	Total	17	71	3	12	2	8	2	8
Training and teaching topics in publishing	MZUNI	3	38	3	36	1	13	1	13
	UNIMA	3	50	2	33	1	17	0	0
	KUHeS	5	83	0	0	1	17	0	0
	MUBAS	4	100	0	0	0	0	0	0
	Total	15	62	5	21	3	12	1	4
Author advisory services	MZUNI	3	36	4	50	1	13	0	0
	UNIMA	5	83	0	0	1	17	0	0

	KUHeS	4	67	2	33	0	0	0	0
	MUBAS	3	75	0	0	1	25	0	0
	Total	15	62	6	25	3	12	0	0
Research seminars	MZUNI	8	100	0	0	0	0	0	0
	UNIMA	2	33	2	33	1	17	1	17
	KUHeS	4	67	2	33	0	0	0	0
	MUBAS	1	25	1	25	1	25	1	25
	Total	15	62	5	21	2	8	2	8
Digitisation	MZUNI	8	100	0	0	0	0	0	0
	UNIMA	3	50	1	17	2	33	0	0
	KUHeS	3	50	3	50	0	0	0	0
	MUBAS	0	0	4	17	0	0	0	0
	Total	14	58	8	33	2	8	0	0
Assistance in publication process	MZUNI	3	36	5	63	0	0	0	0
	UNIMA	3	50	2	33	1	17	0	0
	KUHeS	5	83	0	0	1	17	0	0
	MUBAS	2	50	1	25	1	25	0	0
	Total	13	54	8	33	3	12	0	0
Plagiarism check	MZUNI	0	0	8	100	0	0	0	0
	UNIMA	3	50	2	33	1	17	0	0
	KUHeS	5	83	1	17	0	0	0	0
	MUBAS	4	100	0	0	0	0	0	0
	Total	12	50	11	46	1	4	0	0
Indexing in scholarly databases	MZUNI	4	50	3	36	1	13	0	0
	UNIMA	2	33	3	50	1	17	0	0
	KUHeS	2	33	3	50	0	0	1	17
	MUBAS	3	75	0	0	1	25	0	0
	Total	11	46	9	38	3	12	1	4
Intellectual property and copyright licensing	MZUNI	3	36	3	36	0	0	2	25
	UNIMA	2	33	3	50	1	17	0	0
	KUHeS	3	50	3	50	0	0	0	0
	MUBAS	3	75	0	0	1	25	0	0
	Total	11	46	9	38	2	8	2	8
Publishing new manuscripts and supporting digital scholarship	MZUNI	4	50	4	50	0	0	0	0
	UNIMA	1	17	3	50	1	17	1	17
	KUHeS	3	50	1	17	0	0	0	0
	MUBAS	2	50	0	0	0	0	0	0
	Total	10	42	8	33	1	4	5	21
Hosting of journals and supplemental content	MZUNI	2	25	4	50	0	0	2	25
	UNIMA	1	17	2	33	1	17	2	33
	KUHeS	3	50	1	17	0	0	2	33
	MUBAS	2	50	0	0	1	25	1	25
	Total	8	33	7	29	2	8	7	29

Graphic design	MZUNI	3	36	3	36	2	25	0	0
	UNIMA	2	33	2	33	2	33	0	0
	KUHeS	2	33	0	0	4	67	0	0
	MUBAS	0	0	0	0	2	50	2	50
	Total	7	29	5	21	10	42	2	8
Typesetting	MZUNI	5	63	3	38	0	0	0	0
	UNIMA	2	33	2	33	2	33	0	0
	KUHeS	0	0	2	33	2	33	2	33
	MUBAS	0	0	0	0	2	50	2	50
	Total	7	29	7	29	6	25	4	17
Editing and peer review	MZUNI	1	13	6	75	1	13	0	0
	UNIMA	4	67	0	0	2	33	0	0
	KUHeS	0	0	6	100	0	0	0	0
	MUBAS	1	25	3	75	0	0	0	0
	Total	6	25	15	62	3	12	0	0
Services related to technical infrastructure	MZUNI	3	36	2	25	0	0	3	36
	UNIMA	2	33	1	17	2	33	1	17
	KUHeS	0	0	2	33	3	50	1	17
	MUBAS	0	0	0	0	3	75	1	25
	Total	5	21	5	21	8	33	6	25
Hosting and administering websites of journals	MZUNI	3	36	2	25	2	25	1	13
	UNIMA	1	17	3	50	1	17	1	17
	KUHeS	0	0	2	33	3	50	1	17
	MUBAS	0	0	2	50	0	0	2	50
	Total	4	17	9	38	6	25	5	21
Digital object identifier assignment	MZUNI	0	0	5	63	2	25	1	13
	UNIMA	2	33	2	33	1	17	1	17
	KUHeS	1	17	0	0	4	67	1	17
	MUBAS	0	0	0	0	1	25	3	75
	Total	3	12	7	29	8	33	6	25
Journal publishing platforms such as OJS	MZUNI	1	13	4	50	2	25	1	13
	UNIMA	0	0	4	67	1	17	1	17
	KUHeS	0	0	1	17	4	67	1	17
	MUBAS	0	0	0	0	2	50	2	50
	Total	1	4	9	38	9	38	5	21
ISSN assignment	MZUNI	0	0	5	63	2	25	1	13
	UNIMA	0	0	2	33	2	33	2	33
	KUHeS	1	17	1	17	3	50	1	17
	MUBAS	0	0	1	25	3	75	0	0
	Total	1	4	9	38	10	42	4	17

Findings presented in Table 5.3 show that in terms of repository services, 19 (79%) mentioned were offering, four (17%) said were not offering but had capacity, and one (4%) said were not offering because had no capacity. For citation management, 17 (71%) mentioned were offering, four (17%) said were not offering but had capacity, two (8%) said were not offering because had no capacity and one (4%) was not sure. For information organisation, 17 (71%) mentioned were offering, five (21%) said were not offering but had capacity, one (4%) said were not offering because had no capacity and one (4%) was not sure. For research clinics and promotion, 17 (71%) mentioned were offering, three (12%) said were not offering but had capacity, two (8%) said were not offering because had no capacity and two (8%) said were not sure. For training and teaching topics in publishing, 15 (62%) mentioned were offering, five (21%) said were not offering but had capacity, three (12%) said were not offering because had no capacity and one (4%) was not sure. For author advisory services, 15 (62%) mentioned were offering, six (25%) said were not offering but had capacity, and three (12%) said were not offering because had no capacity. For research seminars, 15 (62%) mentioned were offering, five (21%) said were not offering but had capacity, two (8%) said were not offering because had no capacity and two (8%) said were not sure. For digitisation services, 14 (58%) mentioned were offering, eight (33%) said were not offering but had capacity, and two (8%) said were not offering because had no capacity. For assistance in publication process, 13 (54%) mentioned were offering, eight (33%) said were not offering but had capacity, and three (12%) said were not offering because had no capacity. For plagiarism check, 12 (50%) mentioned were offering, 11 (46%) said were not offering but had capacity, and one (4%) said were not offering because had no capacity. For indexing in scholarly databases, 11 (46%) mentioned were offering, nine (38%) said were not offering but had capacity, three (12%) said were not offering because had no capacity and one (4%) was not sure. For intellectual property and copyright licensing, 11 (46%) mentioned were offering, nine (38%) said were not offering but had capacity, two (8%) said were not offering because had no capacity and two (8%) said were not sure. For publishing new manuscripts and supporting digital scholarship, 10 (42%) mentioned were offering, eight (33%) said were not offering but had capacity, one (4%) said were not offering because had no capacity and five (21%) said were not sure. For hosting of journals and supplemental content, eight (33%) mentioned were offering, seven (29%) said were not offering but had capacity, two (8%) said were not offering because had no capacity and seven (29%) said were not sure. For graphic design, seven (29%) mentioned were offering, five (21%) said were not offering but had capacity, 10 (42%) said were not offering because had no capacity and two (8%) said were not sure. For typesetting services, seven (29%) mentioned were offering, seven (29%)

said were not offering but had capacity, six (25%) said were not offering because had no capacity and four (17%) said were not sure. For editing and peer review, six (25%) mentioned were offering, 15 (62%) said were not offering but had capacity, and three (12%) said were not offering because had no capacity. For services related to technical infrastructure, five (21%) mentioned were offering, five (21%) said were not offering but had capacity, eight (33%) said were not offering because had no capacity and six (25%) said were not sure. For hosting and administering websites of journals, four (17%) mentioned were offering, nine (38%) said were not offering but had capacity, six (25%) said were not offering because had no capacity and five (21%) said were not sure. For indexing in scholarly databases, 11 (46%) mentioned were offering, nine (38%) said were not offering but had capacity, three (12%) said were not offering because had no capacity and one (4%) was not sure. For DOI assignment, three (12%) mentioned were offering, seven (29%) said were not offering but had capacity, eight (33%) said were not offering because had no capacity and six (25%) said were not sure. For Journal publishing platforms, one (4%) mentioned were offering, nine (25%) said were not offering but had capacity, nine (38%) said were not offering because had no capacity and five (21%) said were not sure. For ISSN assignment, one (4%) mentioned were offering, nine (38%) said were not offering but had capacity, 10 (42%) said were not offering because had no capacity and four (17%) said were not sure.

Results from individual universities show that at MZUNI, the services that the library was already offering included repository services, digitisation, and research seminars with scores of eight (100%) each; information organisation, and research clinics and promotion with a score of seven (88%) each; citation management with a score of six (75%); and typesetting with a score of five (63%).

At KUHeS, library staff indicate that the library was already offering eight scholarly publishing services namely, repository services with a score of six (100%); citation management, research clinics and promotion, assistance in publication process, plagiarism check, and training and teaching topics in publishing with a score of five (83%) each; and information organisation, research seminars, and author advisory services with a score of four (67%) each.

At MUBAS, library staff indicated that the library was already offering training and teaching topics in publishing and plagiarism check with a score of four (100%) each; repository services, information organisation, author advisory, intellectual property and copyright licensing, and indexing in scholarly databases with a score of three (75%) each.

At UNIMA the library was already offering three scholarly publishing services namely, author advisory services with a score of five (83%), and citation management, editing, and peer review, with a score of four (67%) each.

The results suggest that the main services offered by all university libraries include repository services, citation management, information organisation, research clinics and promotion, training and teaching topics in publishing, author advisory services, digitisation, assistance in publication process, and plagiarism check. Further analysis of the results in Table 5.3 show that at MZUNI, the main services offered include repository services, digitisation, research seminars which register scores of eight (100%) each. At UNIMA, the main service offered is author advisory service with a score of five (83%). At KUHeS, the main service offered is repository service with a score of six (100%). At MUBAS, the main services offered include plagiarism check, and training and teaching topics in publishing with a score of four (100%) each. The results further reveal that MUBAS, KUHeS and MZUNI offer more scholarly publishing services than UNIMA.

The findings in Table 5.3 further show that some of the libraries were not offering some services. For instance, MZUNI was not offering plagiarism check, DOI assignment, and ISSN assignment. UNIMA was not offering journal publishing platforms such as OJS, and ISSN assignment. KUHeS was not offering typesetting, editing and peer review, services related to technical infrastructure, hosting and administering websites of journals, and journal publishing platforms such as OJS. MUBAS was not offering digitisation services, graphic design, typesetting, services related to technical infrastructure, hosting and administering websites of journals, DOI assignment, ISSN assignment, and Journal publishing platforms such as OJS.

In relation to these findings, the researcher conducted interviews to establish why the libraries were not offering some services despite having the capacity. Results are presented below

At MZUNI, these services were not offered because of a lack of financial and technical support from the university management and that some of the services are being handled by other departments. This is proven by the following comments:

- *One thing critical is the lack of political and organisational will from the top authorities who have failed to support and formalise MZUNI press and provide a platform for scholarly publishing within the university and particularly the university library (MZUNI Participant 1).*

- *As a library, we do not have the necessary machinery and systems to venture into the scholarly publishing business because we were already struggling with the lack of financial and institutional support (MZUNI Participant 2).*
- *Some of these services are now being handled by some other departments, for example, plagiarism check which the library was providing is now planned to be under the responsibility of the Directorate of Research (MZUNI Participant 1).*

At UNIMA, these services were not offered because of a lack of demand from researchers. This is proven by the following comments:

- *We provide our services based on user needs, and for these publishing services, we have not received any demand from the researchers (UNIMA Participant 1).*
- *No one has asked for any of these services in our library. Hence, we have not provided them ourselves (UNIMA Participant 2).*
- *We have not catered our library for some of these services, that is why they are not being offered (UNIMA Participant 3).*

At KUHeS, these services were not offered because of challenges due to technological infrastructure. This is proven by the following comments:

- *Some of these services such as hosting and administering websites of journals, and journal publishing platforms such as OJS require very robust and advanced infrastructures which we do not have ourselves (KUHeS Participant 1).*
- *We were challenged technologically and we do not have the required infrastructure to support all these services (KUHeS Participant 2).*

At MUBAS, these services were not offered because the library has inadequate staff expertise to provide all the required services. This is proven by the following comments:

- *We do not have sufficient staff with the required expertise to provide some of the services (MUBAS Participant 1).*
- *I don't think we were ready since we exist as an institution established to provide access to knowledge and not necessarily publishing it ourselves (MUBAS Participant 2).*

5.4.2 Types of scholarly works published in library platforms

This questionnaire item was aimed at establishing the types of scholarly works that the university libraries publish using their platforms. The results are presented in Table 5.4.

Table 5. 4 Types of scholarly works published in library platforms

Types of scholarly works published in library platforms	Institution								Total	
	MZUNI n=8		UNIMA n=6		KUHeS n=6		MUBAS n=4		n=24	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Electronic theses and dissertations	7	88	5	83	6	100	4	100	22	91
Conference papers and proceedings	7	88	4	67	4	67	4	100	19	79
Special collections materials	4	50	4	67	4	67	2	50	14	58
Technical and research reports	4	50	2	33	3	50	3	75	12	50
Newsletters	1	13	4	67	4	67	3	75	12	50
Peer-reviewed monographs and periodicals	3	38	4	68	3	50	1	25	11	46
Research posters	3	38	1	17	4	67	3	75	11	46
Course modules	1	13	2	33	5	83	3	75	11	46
Campus journals	1	13	1	17	6	100	3	75	11	46
Scholarly and scientific data collections	1	13	2	33	4	67	1	25	8	33
Databases and datasets	1	13	3	50	2	33	1	25	7	29
Digital representations of archives of papers	2	25	3	50	1	14	0	4	6	25
Textbooks	0	0	3	50	3	50	0	0	6	25
Monographs	0	0	3	50	3	50	0	0	6	25
Digital humanities projects	0	0	0	0	2	33	1	25	3	13
Niche journals	1	13	2	33	0	0	0	0	3	13
Personal memoirs carried out by staff	0	0	2	33	0	0	0	0	2	8
3-D models and computer codes	0	0	0	0	0	0	1	17	1	4

The results in Table 5.4 indicate that 22 (91%) indicated electronic theses and dissertations, 19 (79%) indicated conference papers and proceedings, 14 (58%) indicated special collections materials, 12 (50%) indicated technical and research reports, and 12 (50%) said newsletters.

Findings in Table 5.4 show further that between one (4%) and 11 (46%) participants indicated peer-reviewed monographs and periodicals, research posters, course modules, campus journals, scholarly and scientific data collections, databases and datasets, digital representations of archives of papers, textbooks, monographs, digital humanities projects, niche journals, personal memoirs carried out by staff and 3-D models and computer codes.

Further analysis of the results presented in Table 5.4 show that at MZUNI, the main types of scholarly works published by the library include electronic theses and dissertations, conference papers and proceedings, special collections materials and technical and research reports which register scores between four (50%) and seven (88%).

At UNIMA, the main types of scholarly works published by the library include electronic theses and dissertations, conference papers and proceedings and special collections materials which registered scores of between four (67%) and five (83%).

At KUHeS, the main types of scholarly works published by the library include electronic theses and dissertations, conference papers and proceedings, special collections materials, technical and research reports, newsletters, research posters, course modules and campus journals, scholarly and scientific data collections, databases and datasets, digital representations of archives of papers, textbooks and monographs which registered scores between four (67%) and six (100%).

At MUBAS, the main types of scholarly works published by the library include electronic theses and dissertations, conference papers and proceedings, special collections materials, technical and research reports, newsletters, research posters, course modules and campus journals which registered scores between three (75%) and six (100%).

The results suggest that main types of scholarly works published by all university libraries include electronic theses and dissertations, conference papers and proceedings, special collections materials and technical and research reports. The results further show that MUBAS and KUHeS publish more types of scholarly works than MZUNI and UNIMA.

5.5 Strategies for promoting scholarly publishing services in university libraries

The second objective of the study intended to find out the strategies in promoting scholarly publishing services in university libraries. It specifically investigated the strategies for promoting scholarly publishing and the availability of scholarly publishing policies.

5.5.1 Strategies for promoting scholarly publishing

Initially, the researcher wanted to find out the strategies the university libraries use in promoting scholarly publishing. The results are presented in Table 5.5.

Table 5. 5 Strategies for promoting scholarly publishing

Scholarly publishing strategies	University				Total
	MZUNI	UNIMA	KUHeS	MUBAS	
Depositing of theses and dissertations in an institutional repository	8 (100%)	5 (83%)	6 (100%)	2 (50%)	21 (88%)
Directing students to peer reviewed journals	6 (75%)	6 (100%)	6 (100%)	3 (75%)	21 (88%)
Training researchers in research and publishing	6 (75%)	4 (67%)	6 (100%)	4 (100%)	20 (84%)
Organising research seminars	2 (25%)	4 (67%)	4 (67%)	1 (25%)	11 (49%)
Providing publishing guidelines to students and supervisors	0 (0%)	3 (50%)	6 (100%)	0 (0%)	9 (38%)

The results in Table 5.5 indicate that 21 (88%) promote scholarly publishing by depositing theses and dissertations in an institutional repository, 21 (88%) said by directing students to peer reviewed journals, 20 (84%) said training researchers in research and scholarly publishing skills, 11 (49%) said organising research seminars and nine (38%) said providing publishing guidelines to students and supervisors.

With regards to MZUNI, results show that eight (100%) promote scholarly publishing by depositing theses and dissertations in an institutional repository, six (75%) said by directing students to peer reviewed journals, six (75%) said training researchers in research and scholarly publishing, two (25%) said organising research seminars, and none (0%) said providing publishing guidelines to students and supervisors. The results show that the main strategies for promoting scholarly activities at MZUNI include depositing theses and dissertations in an institutional repository, directing students to peer reviewed journals, and training researchers in research and scholarly publishing.

At UNIMA, results show that five (83%) promote scholarly publishing by depositing theses and dissertations in an institutional repository, six (100%) said by directing students to peer reviewed journals, four (67%) said training researchers in research and scholarly publishing, four (67%) said organising research seminars and three (75%) said providing publishing guidelines to students and supervisors. The results suggest that the key strategies for promoting scholarly publishing at UNIMA are directing students to peer reviewed journals, depositing theses and dissertations in an institutional repository, and providing publishing guidelines to students and supervisors.

At KUHeS, results show that six (100%) promote scholarly publishing by depositing theses and dissertations in an institutional repository, six (100%) said by directing students to peer reviewed journals, six (100%) said training researchers in research, six (100%) said providing publishing guidelines to students and supervisors, and four (67%) said organising research seminars. The results suggest that the key strategies for promoting scholarly publishing at KUHeS are depositing theses and dissertations in an institutional repository, directing students to peer reviewed journals, training researchers in research and scholarly publishing skills, and providing publishing guidelines to students and supervisors.

For MUBAS, results show that two (50%) promote scholarly publishing by depositing theses and dissertations in an institutional repository, three (75%) said by directing students to peer reviewed journals, four (100%) said training researchers in research and scholarly publishing skills, one (25%) said organising research seminars and none (0%) said providing publishing guidelines to students and supervisors. The results suggest that the key strategies for promoting scholarly publishing at MUBAS are training researchers in research and scholarly publishing and directing students to peer reviewed journals.

The results suggest that the main strategies employed by universities in promoting scholarly publishing include depositing theses and dissertations in an institutional repository, directing students to peer reviewed journals and training researchers in research and scholarly publishing. The results show further that MZUNI mostly use depositing of thesis and dissertations in an institutional repository, UNIMA mostly use directing students to peer reviewed journals, KUHeS mostly use four strategies which include depositing of thesis in an institutional repository, directing students to peer reviewed journals, training researchers in research and scholarly publishing services, and providing publishing guidelines to students and supervisors, and MUBAS mostly train researchers in scholarly publishing services.

During follow-up interviews, the researcher wanted to find out why libraries mostly used three strategies namely, depositing theses and dissertations in an institutional repository, directing students to peer reviewed journals and training researchers in research and the reasons the other strategies were not commonly or not used at all.

At MZUNI, it was revealed that the library prioritises depositing of thesis and dissertations with the interest of building a local collection of research output whilst the other strategies are left under the responsibility of other university departments who also handle research activities. This is evidenced by the following quotes:

- *I believe that programme documents should specify conditions or stipulations that guide the publication of research articles with supervisors as conditions for a student to graduate (MZUNI Participant 1).*
- *We mostly use depositing of theses and dissertations in an institutional repository. As a library, we are interested in building our digital collection for the research generated by the university and to promote research dissemination (MZUNI Participant 2).*
- *We have not been having presentation at seminars because the university had a public events coordinator who was responsible for organizing research presentations and seminars (MZUNI Participant 1).*

At UNIMA, it was revealed that they have a policy that promotes the depositing of theses and dissertations in an institutional repository. However, the library lacks capacity to provide all the strategies due to inadequate resources and expertise from library staff. This is evidenced by the following quotes:

- *We have the special collections section in which we have a policy that we should get hold of any Malawian publication produced by local authors (UNIMA Participant 1).*
- *Sometimes we provide support to those that are self-publishing by giving them the necessary advice on how they can approach self-publishing and use peer reviewed journals (UNIMA Participant 1).*
- *We do not utilise all the strategies due to lack of expertise and resources to help researchers in all publishing promotion strategies (UNIMA Participant 2).*

At KUHeS, it was revealed that the responsibility for some of the strategies is not invested within the library as the library handles some of the responsibilities through its designated library staff. This is evidenced by the following quotes:

- *We promote scholarly publishing through depositing of theses and dissertations in an institutional repository for preservation of research (KUHeS Participant 1).*
- *Publishing with supervisors should be promoted within departments and faculties rather than being an issue for the library (KUHeS Participant 3).*
- *We have a reference librarian trusted with the responsibility of guiding researchers and teaching them skills in scholarly publishing. He also provides guidance to students and refers them to peer reviewed journals for publishing (KUHeS Participant 2).*

At MUBAS, it was revealed that the lack of a policy makes it hard for them to follow all the strategies in promoting scholarly publishing. This is evidenced by the following quotes:

- *Taking note that we do not have a policy to guide scholarly publishing, we lack the documentation to support these services (MUBAS Participant 1).*
- *Organising seminars for research publication is being done by the Malawi Library Association that provides forums for research dissemination, whilst MUBAS library simply provides support to the association (MUBAS Participant 2).*

5.5.2 Availability of scholarly publishing policies

This item found out if respondents were aware about the existence of any scholarly publishing policies to promote scholarly publishing in their libraries. Results are presented in Table 5.6.

Table 5. 6 Policy on scholarly publishing services

University	<i>f</i>	%
MZUNI (n=8)	3	36
UNIMA (n=6)	3	50
MUBAS (n=6)	0	0
KUHeS (n=4)	0	0

Results presented in Table 5.6 indicate that three (36%) library staff at MZUNI and three (50%) at UNIMA were aware of a scholarly publishing policy while none of the participants at MUBAS and KUHeS knew any scholarly publishing policy at their libraries.

During interviews, the researcher probed more clarification on the nature of policies that were available at MZUNI and UNIMA.

The researcher found that MZUNI has a university publishing policy which was established in 2015, a digital repository policy established in 2018, a research and consultancy policy of 2021 and a postgraduate policy of 2022. However, the policies do not explicitly address scholarly publishing as evidenced in the following quotes:

- *We do not have a library publishing policy within the university, but we have a digital repository policy that guides the submission and deposit of research articles, theses and dissertations for preservation and sharing (MZUNI Participant 1).*
- *The Directorate of Research in collaboration with MZUNI press developed a publishing policy that stipulates and guides the publishing of textbooks, fiction books, and other religious texts currently being done by MZUNI press. However, the publishing policy is yet to be implemented and operationalised (MZUNI Participant 2).*

At UNIMA, the study found that the university had no scholarly publishing policy. Only one respondent said that the university has a publications unit called Chancellor College Publications which has documentation on how publishing works are managed as evidenced through the following quote:

- *We do not have a scholarly publishing unit per say, but we have some documentation that stipulates and guides the publishing services of Chancellor College Publications (UNIMA Participant 1).*

The current study found that KUHeS is in the process of developing documentation to have a publishing policy for the university's research and publishing activities as explained in the following quote:

- *At the moment, we only have standard operating procedures for the administration and management of our institutional repository (KUHeS Participant 1).*
- *We are in the process of restructuring and re-developing our university policies, and within the new structure, scholarly publishing has been included as a separate policy document (KUHeS Participant 2).*
- *The university has begun developing a policy that has provisions on publishing and communication of research findings within the university and there are proposals to have a scholarly communications librarian who will be responsible for scholarly publishing services and activities (KUHeS Participant 1).*

At MUBAS, the respondents explained that the university does not have a scholarly publishing policy as explained in the following quotes:

- *I am not aware of any publishing policy at the university (MUBAS Participant 1).*
- *The university does not have a policy on scholarly publishing neither any documentation to guide publishing activities.*

5.6 Competences of library staff in scholarly publishing

The second objective of the study examined the competences of library staff in scholarly publishing.

5.6.1 Training on scholarly publishing

Initially, the library staff were asked whether they had attended any training or workshops on scholarly publishing. Results are summarised in Table 5.7.

Table 5. 7 Training on scholarly publishing

Training on scholarly publishing	Institution								Total	
	MZUNI n=8		UNIMA n=6		KUHeS n=6		MUBAS n=4		n=24	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Attended training	3	13	4	17	2	8	1	4	10	42
Did not attend training	5	21	2	8	2	8	5	21	14	58

Results presented in Table 5.7 indicate that few respondents with a score of 10 (42%) attended training on scholarly publishing. Out of the 10 (42%) library staff who attended training, four (17%) were from UNIMA, three (13%) from MZUNI, two (8%) from MUBAS and only one (4%) from KUHeS. The results suggest that many library staff did not attend trainings on scholarly publishing.

Therefore, during follow-up interviews, the researcher explored why many library staff did not attend trainings on scholarly publishing.

At MZUNI, it was revealed that scholarly publishing services are not a priority among the services offered as evidenced by a comment from one of the respondents as follows:

- *Our focus is on the basic library services of providing access to knowledge and therefore most of our staff have not been sent to attend scholarly publishing trainings (MZUNI Participant 1).*

At UNIMA, it was revealed that the library has not organised trainings on scholarly publishing services as evidenced by a comment from one of respondents as follows:

- *We have not organised any training workshops on scholarly publishing services within our library (UNIMA Participant 1).*

At KUHeS, it was revealed that trainings are designated to specific library staff responsible for scholarly publishing services as evidenced by a comment from one of the respondents as follows:

- *The training workshops are attended by the responsible library staff who provide the scholarly publishing services as their area of focus (KUHeS Participant 1).*

At MUBAS, it was revealed that training workshops on scholarly publishing are not a particular need for library staff as evidenced by a comment from one of the respondents as follows:

- *Most of the trainings are on basic library services and not scholarly publishing since there is little demand on these services from researchers (MUBAS Participant 1).*

5.6.2 Level of knowledge

In determining the staff competences in scholarly publishing, the researcher wanted to find out the levels of knowledge about scholarly publishing initiatives among library staff. The results are presented in Table 5.8.

Table 5. 8 Levels of knowledge on scholarly publishing services

Scholarly publishing services	Level of knowledge									
	Limited Knowledge					Expert Knowledge				
	MZUNI	UNIMA	KUHeS	MUBAS	TOTAL	MZUNI	UNIMA	KUHeS	MUBAS	TOTAL
<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>	<i>f (%)</i>
Information organisation	1 (13)	2 (33)	2 (33)	1 (25)	6 (25)	7 (87)	4 (67)	4 (67)	3 (75)	18 (75)
Digitisation	2 (50)	2 (33)	0 (0)	4 (100)	8 (33)	6 (75)	4 (67)	6 (100)	0 (0)	16 (67)
Repository services	2 (25)	3 (50)	3 (50)	0 (0)	8 (33)	6 (75)	3 (50)	3 (50)	4 (100)	16 (67)
Citation management	5 (63)	1 (17)	3 (50)	2 (50)	11 (46)	3 (38)	5 (84)	3 (50)	2 (50)	13 (54)
Plagiarism check	6 (75)	1 (17)	2 (33)	3 (75)	12 (50)	2 (25)	5 (84)	4 (67)	1 (25)	12 (50)
Research clinics and promotion	4 (50)	3 (50)	3 (50)	3 (75)	13 (55)	4 (50)	3 (50)	3 (50)	3 (75)	11 (46)
Typesetting	4 (50)	3 (50)	3 (50)	3 (75)	13 (55)	4 (50)	3 (50)	3 (50)	3 (75)	11 (46)
Indexing in databases	6 (75)	2 (33)	4 (67)	2 (50)	14 (58)	2 (25)	4 (67)	2 (33)	2 (50)	10 (42)
Author advisory	6 (75)	0 (0)	4 (67)	4 (100)	14 (58)	2 (25)	6 (100)	2 (33)	0 (0)	10 (42)
Research seminars	2 (25)	6 (100)	5 (84)	2 (50)	15 (63)	6 (75)	0 (0)	1 (17)	2 (50)	9 (38)
IP and copyright licensing	5 (63)	3 (50)	3 (50)	4 (100)	15 (63)	3 (38)	3 (50)	3 (50)	0 (0)	9 (38)
Editing and peer review	4 (50)	4 (68)	5 (83)	3 (75)	16 (67)	4 (50)	2 (33)	1 (17)	1 (25)	8 (33)
Hosting of journals	5 (63)	3 (50)	4 (67)	4 (100)	16 (67)	3 (38)	3 (50)	2 (33)	0 (0)	8 (33)
Assistance in publication	6 (75)	3 (50)	4 (67)	3 (75)	16 (67)	2 (25)	3 (50)	2 (33)	1 (25)	8 (33)
DOI assignment	5 (63)	2 (33)	6 (100)	4 (100)	17 (70)	3 (38)	4 (67)	0 (0)	0 (0)	7 (29)
Hosting content	5 (63)	3 (50)	6 (100)	4 (100)	18 (75)	3 (38)	3 (50)	0 (0)	0 (0)	6 (25)
ISSN assignment	7 (88)	3 (50)	4 (67)	4 (100)	18 (75)	1 (13)	3 (50)	2 (33)	0 (0)	6 (25)
Training in publishing	5 (63)	4 (67)	5 (83)	4 (100)	18 (75)	3 (38)	2 (33)	1 (17)	0 (0)	6 (25)
Journal publishing	6 (75)	3 (50)	6 (100)	4 (100)	19 (79)	2 (25)	3 (50)	0 (0)	0 (0)	5 (21)
Technical infrastructure	7 (88)	4 (67)	5 (84)	3 (75)	19 (79)	1 (13)	2 (33)	1 (17)	1 (25)	5 (21)
Publishing new manuscripts	6 (75)	5 (83)	4 (67)	4 (100)	19 (79)	2 (25)	1 (17)	2 (33)	0 (0)	5 (21)
Graphic design	6 (75)	6 (100)	5 (83)	3 (75)	20 (83)	2 (25)	0 (0)	1 (17)	1 (25)	4 (17)

The results presented in Table 5.8 indicate that library staff with a score of 18 (75%) had expert knowledge in information organisation; 16 (77%) had expert knowledge on digitisation and repository services; 13 (54%) had expert knowledge on citation management; and 12 (50%) had expert knowledge on plagiarism check. Findings show further that library staff with scores of between 4 (17%) and 11 (46%) indicated that they had expert knowledge in research clinics and promotion, typesetting, indexing in scholarly databases, author advisory, research seminars, IP and copyright licensing, editing and peer review, hosting and administering of journals, publication process, DOI assignment, hosting supplemental content, ISSN assignment, training and teaching in publishing, journal publishing platforms such as OJSs, technical infrastructure services, publishing new manuscripts, and graphic design.

The findings suggest that most library staff have expert knowledge in information organisation, digitisation, repository services, citation management, and plagiarism check.

For individual universities, at MZUNI, most staff indicated to have expert knowledge with scores of between four (50%) and seven (87%) in the following services: information organisation, digitisation, repository services, research clinics and promotion, typesetting, research seminars, editing, and peer review. At UNIMA, most staff indicated to have expert knowledge with scores of between three (50%) and four (67%) in the following services: information organisation, digitisation, repository services, citation management, plagiarism check, research clinics and promotion, typesetting, indexing in scholarly databases, author advisory, IP and copyright licensing, editing, peer review, hosting and administering of journals, assistance in publication process, DOI assignment, hosting supplemental content, ISSN assignment, and Journal publishing platforms such as OJSs. At KUHeS, most staff indicated to have expert knowledge with scores of between three (50%) and four (67%) in the following services: information organisation, digitisation, repository services, citation management, plagiarism check, research clinics and promotion, typesetting, and IP and copyright licensing. At MBUAS, most staff indicated to have expert knowledge with scores of between two (50%) and four (100%) in the following services: information organisation, citation management, repository services, research clinics and promotion, typesetting, indexing in scholarly databases, and research seminars.

The findings show that library staff at UNIMA have more expert knowledge in publishing services followed by MZUNI, KUHeS and MUBAS.

The results presented in Table 5.8 further show that most staff across the universities have limited knowledge in some publishing services. The findings indicate that 20 (83%) library staff have limited knowledge in graphic design, 19 (79%) have limited knowledge in publishing new manuscripts and services related to technical infrastructure, and 18 (75%) have limited knowledge in training and teaching in publishing services.

Follow up interviews dwelled on asking participants to elaborate how knowledge was obtained by library staff in scholarly publishing services and the reasons for the lack of knowledge in some scholarly publishing services.

At MZUNI, it was established that library staff do not have some scholarly publishing skills since library schools they attended did not teach such skills. They learnt most of the skills on their own as can be noted in the following comments:

- *These skills are not covered in any of the library schools and library trainings that I attended. There are some skills such as digitisation and repository services that I have learnt from fellow staff (MZUNI Participant 1).*
- *I have not learnt any of these skills in school, and the few skills I have, I acquired them on my own through job practice (MZUNI Participant 2).*

At UNIMA, it was established that library staff do not receive demands to offer all the services and hence they have no interest to learn all the skills as can be noted in the following comments from some of the respondents:

- *The lack of demand from researchers in some scholarly publishing services removes the interest within me to learn and practice some skills (UNIMA Participant 1).*
- *There is no need of knowing all the skills because some of the services are not required by researchers who seek services from our library (UNIMA Participant 2).*

At KUHeS, it was established that library staff have not learnt these skills in school but through self-learning on the job and peer training as can be noted in the following comments:

- *I reckon that skills are acquired in school, however, throughout my library career, none of these skills were offered and I learnt them from friends in the library (KUHeS Participant 1).*
- *Most of the skills I have, have been learnt on the job. I have acquired the skills through personal reading and practice (KUHeS Participant 2).*

At MUBAS, it was established that the library staff acquired the skills through personal learning and peer training as can be noted in the following comments:

- *I have expertise in hosting of journals, a skill that I learnt through personal interest and learning online using YouTube (MUBAS Participant 1).*
- *I acquired some of these skills through peer-training with my colleagues in the library (MUBAS Participant 2).*

5.7 Factors affecting university libraries in scholarly publishing

The last objective of the study intended to find out the factors affecting university libraries in scholarly publishing. The results are presented in Table 5.9.

Table 5. 9 Factors affecting scholarly publishing in university libraries

Factors	Institution								Total
	MZUNI		UNIMA		KUHeS		MUBAS		
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i> (%)
Lack of funding	7	87	5	83	6	100	3	75	21 (88)
Lack of technological infrastructure	6	75	5	83	6	100	3	75	20 (83)
Lack of faculty compliance	5	62	1	17	5	83	4	100	15 (63)
Lack of technical support	4	50	2	33	5	83	4	100	15 (63)
Technological issues or failures	7	87	3	50	1	17	2	50	13 (54)
Lack of policy frameworks	4	50	5	83	3	50	1	25	13 (54)
Inadequate staffing levels	7	87	3	50	2	33	1	25	13 (54)
Lack of library staff competencies	4	50	4	67	2	33	1	25	11 (46)
Unfriendly political and cultural factors	3	38	1	17	4	67	2	50	10 (41)
Perception of librarians	1	12	0	0	6	100	3	75	10 (41)
Ethical and legal norms	4	50	0	0	1	17	1	25	6 (25)

Results presented in Table 5.9 show that 21 (88%) participants said lack of funding, 20 (83%) said lack of technological infrastructure, 15 (63%) said lack of faculty compliance, 15 (63%) said lack of technical support, 13 (54%) said lack of technological issues or failures, 13 (54%) said lack of policy frameworks and another 13 (54%) said inadequate staffing levels. Results show further that 11 (46%) said lack of library staff competencies, 10 (41%) said unfriendly political and cultural factors, 10 (41%) indicated perception of librarians and six (25%) indicated ethical and legal norms.

For individual universities, results show that at MZUNI, seven (87%) said lack of funding, seven (87%) said technological issues or failures, seven (87%) said inadequate staffing levels, six (75%) said lack of technological infrastructure, five (62%) said lack of faculty compliance, four (50%) said lack of technical support, four (50%) said lack of policy frameworks, four (50%) said lack of library staff competencies, four (50%) said ethical and legal norms, three (38%) said unfriendly political and cultural factors, and one (12%) said perception of librarians. The results show that the main factors that affect scholarly publishing at MZUNI include lack of funding, technological issues or failures, inadequate staffing levels, lack of technological infrastructure, and lack of faculty compliance.

At UNIMA five (83%) said lack of funding, five (83%) said lack of technological infrastructure, five (83%) said lack of policy frameworks, four (67%) said lack of library staff competencies, three (50%) said technological issues or failures, three (50%) said inadequate staffing levels, two (33%) said lack of technical support, one (17%) said lack of faculty compliance, one (17%) said unfriendly political and cultural factors, and none (0%) said perception of librarians, or ethical and legal norms. The results show that the main factors that affect scholarly publishing at UNIMA include lack of funding, lack of technological infrastructure, lack of policy frameworks, and lack of library staff competencies.

At KUHeS, six (100%) said lack of funding, six (100%) said lack of technological infrastructure, six (100%) said perception of librarians, five (83%) said lack of faculty compliance, five (83%) said lack of technical support, four (67%) said unfriendly political and cultural factors, three (50%) said lack of policy frameworks, two (33%) said inadequate staffing levels, two (33%) said lack of library staff competencies, one (17%) said technological issues or failures, and one (17%) said ethical and legal norms. Results show that the main factors that affect scholarly publishing at KUHeS are lack of funding, lack of technological infrastructure, perception of librarians, lack of faculty compliance, and lack of technical support.

At MUBAS, four (100%) said lack of faculty compliance, four (100%) said lack of technical support, three (75%) said lack of funding, three (75%) said lack of technological infrastructure, three (75%) said perception of librarians, two (50%) said technological issues or failures, two (50%) said unfriendly political and cultural factors, one (25%) said lack of policy frameworks, one (25%) said inadequate staffing levels, one (25%) said lack of library staff competencies, and one (25%) said ethical and legal norms. The results show that the main factors that affect scholarly publishing at MUBAS include lack of faculty compliance, lack of technical support, lack of funding, lack of technological infrastructure, and perception of librarians.

Overall, the results suggest that the main factors that affect scholarly publishing in the universities include lack of funding, lack of technological infrastructure, lack of faculty compliance, and lack of technical support. The results show further that MZUNI is mostly affected by lack of funding. UNIMA is mostly affected by lack of funding, and lack of technological infrastructure. KUHeS is mostly affected by lack of funding, and lack of technological infrastructure, whilst MUBAS is mostly affected by lack of faculty compliance, and lack of technical support.

During interviews, the researcher sought more clarification on what contributed to the key factors affecting scholarly publishing services in libraries namely, lack of funding, lack of technological infrastructure, lack of faculty compliance, and lack of technical support. The results are summarised in Table 5.10.

Table 5. 10 Summary of key factors

Factors	Selected responses	Key findings
Lack of funding	<ul style="list-style-type: none"> • <i>Financial resources have been a burden for centuries affecting several library programmes and initiatives (UNIMA Participant 1).</i> • <i>We are facing serious financial implications, and therefore it would be hard to establish publishing services as there is need for people to be working in the publication services which will demand extra wage bill for the university (KUHeS Participant 2).</i> • <i>We are failing to enrol new services or library programmes because we do not have the financial capability. Establishing a library publishing unit would be a toll order (MZUNI Participant 2).</i> • <i>There is limited funding from the university such that academics use their own resources to conduct research which then becomes challenging for them to even publish due to the lack of funds (MUBAS Participant 1).</i> 	<ul style="list-style-type: none"> • Financial challenges • Demand for extra salaries • Lack of financial capacity
Lack of technological infrastructure	<ul style="list-style-type: none"> • <i>We lack the technological infrastructure to support the specifications and requirements for scholarly publishing (KUHeS participant 2).</i> • <i>Were already struggling financially, and therefore it is not easy for our library to acquire the necessary infrastructure (UNIMA participant 1).</i> • <i>We have not procured the technological equipment such as hardware and software to handle publishing services (MZUNI Participant 1).</i> • <i>The challenge is that we do not have the infrastructure to support scholarly publishing (MUBAS Participant 1).</i> 	<ul style="list-style-type: none"> • Lack of finance to purchase infrastructure

Lack of faculty compliance	<ul style="list-style-type: none"> • <i>There is shared negative perception of both librarians and researchers to publish locally within their local universities and local libraries (MZUNI Participant 1).</i> • <i>Many of the respondents felt that library publishing lacks credibility and reputation as compared to foreign prestigious journals in return for promotion (MUBAS Participant 1).</i> • <i>The issue is on the mentality and attitude of researchers who fill that publishing locally reduces their chances to be recognised and promoted in their profession (UNIMA Participant 2).</i> • <i>It will be hard to convince researchers to publish with the library since researchers go for reputable and prestigious journals (UNIMA participant 2).</i> • <i>The reputation among researchers is a very big issue, such that for their research papers, they are always looking for reputable journals and publishing outlets (KUHeS Participant 1).</i> 	<ul style="list-style-type: none"> • Negative attitude by academics in local publications • Questionable credibility of library publishing • Desire for prestigious journals • Need for promotion and recognition
Lack of technical support	<ul style="list-style-type: none"> • <i>The mother institutions in the universities do not see the need to be providing publishing services (MZUNI Participant 2).</i> • <i>We have little support from the university in enrolling scholarly publishing services (KUHeS Participant 1).</i> • <i>There is little interest from the university management to provide assistance to scholarly publishing (MUBAS Participant 2).</i> • <i>The lack of a policy challenges our library to convince management to provide us support since we have no documentation that guides our operations and day to day activities (UNIMA Participant 2).</i> 	<ul style="list-style-type: none"> • Little interest in scholarly publishing services from management

5.8 Chapter summary

This chapter has presented, summarised, and interpreted quantitative and qualitative data on scholarly publishing services in university libraries. Since this study used an explanatory sequential design, quantitative data was followed by qualitative data both in collection in the field and during analysis and presentation in this chapter. Chapter six that follows, discusses the findings realised in chapter five. It will further make conclusions to the study and offer some recommendations and areas for further research.

CHAPTER SIX

DISCUSSION OF FINDINGS, RECOMMENDATION AND CONCLUSION

6.1 Introduction

This chapter discusses results of the findings presented in chapter five. Discussing and interpreting findings involve providing meaning to those results by linking them with the research objectives, theoretical frameworks and the existing literature (Creswell, 2014). In this chapter, the researcher derives meaning to the results by interpreting them through the Scientific Communications Lifecycle Model by Bjork (2007) (presented in chapter three) which underpinned the study. It also contextualises the findings into the fold of the existing related literature on scholarly publishing in university libraries presented in chapter two. This chapter also sums up the research study, provides recommendations and proposes areas of further research. The researcher carried out this study to understand the scholarly publishing services of university libraries in Malawi. The discussion is done in line with the research themes of the study which are: scholarly publishing services offered by libraries; strategies in promoting scholarly publishing services; competences of library staff in scholarly publishing; and factors affecting university libraries in scholarly publishing.

6.2 Scholarly publishing services in university libraries

The study examined various issues relating to scholarly publishing services and types of scholarly works published in the university library platforms.

6.2.1 Scholarly publishing services offered by university libraries

The study found that the main services offered by all university libraries include repository services, citation management, information organisation, research clinics and promotion, training and teaching topics in publishing, author advisory services, digitisation, assistance in publication process, and plagiarism check. Providing research related services is becoming one of the routine roles of academic librarians (Koltay, 2019) such that academic librarians are increasingly called upon to demonstrate their value in research support. Not surprisingly, providing these scholarly services remain a critical function of academic librarians. Scholarly publishing services found in this study involve such functions as registration, certification, dissemination, and preservation (Directorate General for Research and Innovation, 2019). These functions depicted in the Scientific Communication Life-cycle Model by Björk (2007) were being offered by the university libraries in this study. In particular, all libraries provided repository services, information organisation, and research clinics and promotion.

Repository services stood out as a core scholarly publishing service provided by the university libraries examined in this study. As presented in section 5.4.1 and 5.5, the university libraries heavily made use of the institutional repositories to publish theses and dissertations, and therefore repository services were on high demand which may be attributed to the libraries' desire to capacitate their digital collections and promote research dissemination.

Information organising is a basic library service meant to manage and consolidate information resources, no wonder all the university libraries were offering this service. Organising information helps to manage information resources for easy access and retrieval by researchers. In section 5.5 this study found that training researchers was one of the ways of promoting scholarly publishing services. It is therefore not surprising that the libraries were providing research clinics and promotion. This may be attributed to the desire among librarians to orient and train researchers in good research practices and provide them avenues and platforms to publish their research results.

Relating these findings to the Scientific Communication Lifecycle Model by Björk (2007), Park and Shim (2011, p. 76) explain that the certification function, is reflected in research clinics and promotion services and the archiving function is reflected in digitisation and repository services. The third stage of the Scientific Communication Lifecycle Model treats this as communication of results, reflecting the viewpoint that scientific results which have been published, but which are not read by the intended audience are useless (Björk, 2007). Once an article is published, the most important aspect of the communication is its impact on readership and the larger scholarly community (Björk, 2007). It can then be suggested that the libraries have established institutional repository services as one way of promoting dissemination of both scientific results and other forms of publications.

In a mixed methods study in Malawi, Kapasule and Chawinga (2016) found that institutional repository services are established to increase accessibility to research outputs, promote use of the ICT infrastructure, and for document preservation to enhance keeping of files and articles. Mierzecka (2019), Schmidt et al. (2016) and McCormick (2015) add that many library publishing programmes emphasise hosting, providing access to and preserving digital content via institutional repositories. Studies by Sanjeeva (2017) in India and Ry-Kottoh et al. (2022) in Ghana also found that the institutional repository was the main platform for the purpose of collecting, disseminating, curating, and maximizing discovery of institutional research output. Björk's (2007) model equally advocates the publishing of local research in university archives.

Increasingly, universities are putting students' theses into their institutional repositories to promote accessibility to a wider user community (White, 2019). LIS literature relevant to scholarly publishing has also addressed services offered by libraries such as digitisation projects, information organisation (e.g., metadata, indexing, etc.) and evolving repository services that collect, store, publish, and disseminate scholarly works (Calarco et al., 2016; LPC, 2018, 2021; Li et al., 2018; Lippincott, 2017; McCormick, 2015; Schmidt et al., 2016). Likewise, LPC (2021), Sanjeeva (2017), and White (2019) also found that libraries in India and Ghana have added a variety of services supporting scholarly publishing including assistance in publication process and providing training on issues regarding research dissemination, and citation management.

6.2.2 Types of scholarly works published in library platforms

The study established that the main types of scholarly works published by all university libraries include electronic theses and dissertations, conference papers and proceedings, special collection materials and technical and research reports. Electronic theses and dissertations and conference papers and proceedings top the list of scholarly works published by the university libraries. This may be attributed to the libraries' desire to capacitate their digital collections and promote research dissemination. Several researchers also found that these two forms of publications populate many academic libraries around the globe (Borrego, 2016; LPC, 2021; Okerson & Holzman, 2015; Schlosser, 2018).

Commenting on Björk's (2007) model, Ketchum (2017) and Lugovic et al. (2015) state that publishing of scientific and scholarly works is an activity responsible not only for commercial publishers, but also libraries. It falls under the element of *communicate the results* of the Scientific Communication Lifecycle Model by Björk (2007) which involves communicating or disseminating the findings of scholarly works. In a Malawian study, Chawinga and Zinn (2021) agreed to findings of a study in America by Schlosser (2018) that research results are disseminated through formal scholarly communication channels such as publications in journals and other local university platforms such as institutional repositories.

The results further show that MUBAS and KUHeS publish more types of scholarly works than MZUNI and UNIMA. Some reasons may be cited behind this disparity. Firstly, KUHeS has a well-established scholarly journal namely the Malawi Medical Journal which provides forum for publishing most of these works. Secondly, MUBAS and KUHeS advocate for the preservation and dissemination of departmental and faculty intellectual output with the library.

Taking note that the academic departments produce a lot of intellectual work, MUBAS and KUHeS have a larger share of scholarly works than MZUNI and UMINA libraries. In most cases, what libraries publish, highly depend on the demands and needs of their constituencies and researchers (Ry-Kottoh et al., 2022). Some scholars have demonstrated that many libraries first become involved in publishing after being approached by faculty for assistance with the production of digital work (Skinner et al., 2015). According to Björk (2007), publishing of research work is an activity demanded upon from those doing research and that the libraries provide the platforms for dissemination and communication.

Special collection materials and technical and research reports also find a better home in university libraries. At MZUNI, UNIMA, MUBAS and KUHeS, library staff mentioned that the libraries published special collection materials including other research works such as technical and research reports, newsletters, and course modules. It is not surprising that the universities were interested in publishing technical and research reports as they are one of the most sought for reference materials among students and researchers. Noting that the universities are mostly engaged in various projects, the results from these projects need to be published for easy access among stakeholders which include project funders. Correspondingly, Bjork (2007) indicated that, most activities in university projects are carried out by commercially operating parties such as research grant organisations, who require project reports as a way of proving the success and viability of the projects.

The universities were also producing newsletters that contain academic activities involving students and staff. All the universities are engaged in teaching and therefore course modules produced by different departments which detail course content are published locally within the universities. For instance, at MZUNI, academic departments produce course modules for Open and Distance Learning students to use when they are away from campus. Li et al. (2018) state that from 2000, there has been a proliferation of articles and publishing of grey literature, ETDs, and other original research reports in academic libraries. Likewise, Björk's (2007) model takes into account the fact that the scientists not only publish traditional-looking textual papers but also scientific publications including working papers, special collection materials and research reports. Similar findings are reported by several researchers that academic libraries publish special collections materials, course modules, scholarly journals, and technical/research reports (Borrego, 2016; LPC, 2021; Okerson & Holzman, 2015; Schlosser, 2018).

6.3 Strategies for promoting scholarly publishing services in university libraries

The study examined strategies for promoting scholarly publishing and the scholarly publishing policies in university libraries.

6.3.1 Strategies for promoting scholarly publishing in the academic library

The study found that all the four libraries employed three common strategies to promote scholarly publishing namely, depositing theses and dissertations in an institutional repository directing students to peer reviewed journals and training researchers in research.

It is not surprising that depositing theses and dissertations in an institutional repository is one of the most popular roles of academic libraries in Malawi. With the proliferation of ICTs in Malawi (Chawinga, 2016, 2017; Zozie & Chawinga, 2018), many libraries have embraced the concept of digital library which among others, include the component of institutional repositories. Apart from acting as a platform for keeping and archiving institutionally produced intellectual outputs, institutional repositories are mostly used by libraries to store theses and dissertations. Depositing theses and dissertations in institutional repositories is an important strategy for promoting scholarly publishing. This is grounded in the element of *communicate the results* of the Scientific Communication Lifecycle Model by Björk (2007), which state that the scholarly publishing process involves communicating or disseminating the findings of scholarly works. In this case, it can be concluded that academic libraries in Malawi are contributing to sharing of research results (Chawinga, 2019; Chawinga & Zinn, 2021). In agreement, several authors also assert that institutional repositories are a platform for academic libraries as they were built to provide a home for an institution's grey literature and digital library collections such as electronic theses and dissertations thereby making research publicly accessible. (Marsh, 2015; Nemati-Anaraki & Tavassoli-Farahi, 2018; Stapleton, 2019).

Pertaining to directing students and researchers to peer reviewed journals, it must be noted that helping researchers locate relevant information resources is one of the traditional roles of librarians. The academic library exists to guide researchers to access, evaluate, and use the right information to produce new knowledge (White, 2019). Most academic libraries in Malawi have subscribed to online scholarly databases (Chima et al., 2023). Therefore, librarians assist researchers to search, access, evaluate, and use information sources from these online databases which mostly contain peer reviewed publications. Bjork's (2007) model stresses that for researchers to be able to produce a good publication, the services of academic librarians are critical as they guide researchers to the relevant scholarly materials for utmost use.

The study also found that all libraries promote scholarly publishing by training researchers in research. In this case, it means that libraries conduct periodic, and demand driven seminars to equip researchers with plagiarism software, use of online databases, and guidance with credible journals to publish their findings. According to Sanjeev (2018), training librarians in research activities is increasingly being embraced by academic libraries. Several studies conducted in Ghana by Adjei et al. (2019), White (2019), and Ry-Kottoh et al. (2022) and one in Botswana by Oladokun (2015) found that most libraries were involved in offering various services to researchers including training them in use of online databases. In relation to the Scientific Communication Lifecycle Model, Bjork (2007) demonstrates that librarians should organise forums and orientation sessions to guide researchers in the research activities.

6.2.2 Scholarly publishing policies

This study revealed that all university libraries had no specific scholarly publishing policy. Remarkably, KUHeS is developing documentation to have a publishing policy for the university's research and scholarly publishing activities. MZUNI has a university publishing, postgraduate and digital repository policies. However, the MZUNI publishing policy is not specifically oriented towards scholarly publishing. Rather, it focusses on publishing textbooks and other education materials such as monographs and faculty handbooks. The MZUNI repository and postgraduate policy only requires students to produce a manuscript and deposit a thesis in the repository before graduating for preservation and sharing. At UNIMA and MUBAS, there were no attempts in developing and establishing any scholarly publishing policy. The lack of a specific scholarly publishing policy in all universities was likely to breed various undesirable implications as the libraries have no clear direction to approach scholarly publishing services. For instance, library staff were free to not take scholarly publishing activities seriously as there was no policy compelling them to do so. Likewise, the university authorities could not appropriately plan and implement scholarly publishing activities considering that there was no policy to compel them. Björk's (2007) model stresses that scholarly publishing activities should be guided by well-formulated policies. Policies did not exist in all universities which meant that scholarly publishing activities were conducted without any proper guidelines. Some scholars (Ry-Kottoh et al., 2022; Stapleton, 2019; White, 2019; White & King, 2020) agree that policies are needed in scholarly publishing activities. University libraries in Malawi can learn from their counterparts in Ghana at KNUST which has a policy for scholarly publishing (White, 2019; White & King, 2020). The policy requests doctoral students to publish at least two referred journal papers before they graduate.

6.3 Competences of library staff in scholarly publishing

6.3.1 Level of knowledge

Scholarly publishing expertise is an enabling human factor to competently understand, handle and develop publishing services. It is not surprising that librarians needed various competencies and knowledge in scholarly publishing services. The study found that most library staff in all universities have expert knowledge in information organisation, digitisation, repository services, citation management, and plagiarism check. Expertise among library staff in these services may be attributed to a number of reasons. First, the libraries are responsible for orienting and training all library staff in these basic services so that they ably assist researchers. Second, in the course of assisting researchers, the library staff tend to become experts through hands on practice. Besides, information organisation, digitisation, citation management and plagiarism check are some of the fundamental curriculum modules taught to librarians in library schools. Library schools teach such modules like cataloguing, classification, information literacy and digital librarianship which therefore provide expertise to library staff.

The Scientific Communication Lifecycle Model (Bjork, 2007) proposed that library staff need knowledge and expertise in various scholarly publishing services such as repository services, information organisation, digitisation and citation management. This shows that librarians have what it takes to support the scholarly publishing activities in the universities. LIS literature highlight the need for competencies and skills in scholarly publishing among librarians. These skills as identified by some associations and regional consortia like CARL, NASIG and SLA include organisation of data, information, and knowledge assets; citation management, and plagiarism check services (NASIG, 2017). Similarly, White (2019) calls for a set of competencies among librarians in scholarly publishing including digitisation, repository services, citation management and plagiarism check. Librarians strengthen the research community and facilitate scholarly publishing by managing digital resources and teach researchers how to use research tools (Ketchum, 2017).

In a qualitative content analysis, Mierzecka (2019) found that librarians require expertise in copyright, supporting the management of authors' rights, and an understanding of funders' and publishers' policies related to open access. In relation to repository services, this competency would include the librarian being able to deposit a permissible copy of a work into an appropriate institutional repository, managing the supporting technical infrastructure; have knowledge of and experience with repository solutions; and afford to collect, store, and preserve faculty, staff, and student intellectual output.

In view of the Scientific Communication Lifecycle Model, Bjork (2007) calls for all scholarly publishing librarians to be capable in the best practices for institutional repository content recruitment and description. Several authors assert that institutional repositories have become another cornerstone of library scholarly publishing programmes which must be mastered by all librarians (Finlay et al., 2015; NASIG, 2017; Swoger et al., 2015), and developing institutional repositories, uploading content, and installing repository software (Calarco et al., 2016; Finlay et al., 2015; NASIG, 2017; Raju, 2017; Schmidt et al., 2016; Sewell & Kingsley, 2017).

The study further established that library staff at UNIMA have more expert knowledge in publishing services followed by MZUNI, KUHeS and MUBAS. The difference in skill sets among the libraries may be attributed to the fact that some staff at UNIMA have learnt skills in scholarly publishing during their postgraduate studies. For instance, one staff at UNIMA specified that he took a module on scholarly publishing during postgraduate studies. The Scientific Communication Lifecycle Model stresses of the varying nature among individuals in expertise in delivering various publishing services due to among others, differences in training and education (Bjork, 2007). Similarly, some authors discuss of the prevailing differences in skill sets among librarians in scholarly publishing (Calarco et al. 2016; Finlay et al., 2015; Myers, 2016; Sewell & Kingsley, 2017).

The study also found that most staff across the universities have limited knowledge in some publishing services that include hosting of journals and supplemental content, graphic design, and journal publishing platforms such as OJSs. Several factors could account for the lack of knowledge in some scholarly publishing skills among librarians. First, despite the emphasis on the need for training in scholarly publishing (Waller & Bazeley, 2014; White, 2019), the current study revealed that there were no training workshops organised to equip library staff with scholarly publishing skills. In fact, more than half of library staff had not attended training on scholarly publishing. Second, although Schlosser (2018) and Skinner et al. (2015) advises that LIS schools are better placed to offer skills in scholarly publishing, the library staff in the visited libraries have not gone through any refresher courses. Therefore, as advocated by some scholars (Ry-Kottoh et al., 2022; Schlosser, 2018; Skinner et al., 2015) librarians should be trained through academic degree programmes, professional development workshops, and online or distance programs. Unfortunately, Finlay et al. (2015) found that scholarly publishing has not been widely integrated as a core component of library school curricula. Taking note that MZUNI offers undergraduate and postgraduate degrees in library science, there is need for scholarly publishing to be included in the LIS curriculum and provide short refresher courses.

6.4 Factors affecting university libraries in scholarly publishing

The study found that the main factors that affect scholarly publishing in the universities include lack of funding, lack of technological infrastructure, lack of faculty compliance, and lack of technical support.

The current study established that lack of funding was the main factor that affected scholarly publishing at MZUNI, UNIMA, and KUHeS. As is with any other forms of library services, publishing demand an investment of financial resources, which cause overhead costs for an institution. Bjork' model (2007) elaborated on financial struggles among institutions to support research publication. Bjork (2007) indicated that, although parts of the overall process are carried out by commercially operating parties such as research grant organisations, almost all stages are predominantly funded by public finance via university budgets, which are usually limited to provide the necessary support. In this study, respondents mentioned that the universities had no funding to buy the required necessities such as technical infrastructures, covering the wage bill, and paying for other operational costs. In fact, being public universities operating with meagre and unsustainable budgets, the little resources are channelled towards critical university needs such as salaries and other daily operations (Chawinga, 2019). Some authors argue that inadequate funding (Adjei et al., 2019; Dadzie & van der Walt, 2015), and lack of adequate and modern equipment (Dzandza, 2020) have been identified as the major challenges of library projects in Ghana, just as is the case in Malawian universities as found in this study. In contrast, Schlosser (2018) discussing results in America report that over the last decade, a mix of financial developments in academic libraries has spurred the rapid growth of library publishing programmes. These contrasts in the findings are not surprising based on the premise that America is a developed country in relation to Ghana and Malawi which are developing nations.

This study found that lack of technological infrastructure affected scholarly publishing at UNIMA and KUHeS more than the other universities. Generally, poor technological infrastructure includes erratic internet connectivity, inadequate bandwidth and slow internet, and lack of computer access. At UNIMA and KUHeS, lack of technological infrastructure was mainly attributed to the unavailability of required technologies, and technological failures in the universities. Probably, this could be attributed with the high cost of purchasing the technological equipment noting that the universities were already struggling with funding. Moreover, this is a predominant challenge in Malawi with the prohibitive cost of purchasing computers, software and other technological equipment (Chawinga, 2017; Gama et al., 2022).

In Malawi, some scholars have also echoed that slow Internet discourages users from using different library services (Chawinga, 2017; Gama et al., 2022; Mambo et al., 2016). This implies that researchers and librarians may be frustrated with the poor technological infrastructures and thereby failing to publish research outputs with the libraries. According to the Scientific Communication Lifecycle Model (Björk, 2007), setting up and maintaining the technological and technical infrastructure for a portfolio of publications is such an overhead causing item. There is further complexity due to the financially constrained environment in which these libraries operate (Björk, 2007). Hawkins (2019) observes that libraries need to showcase a minimal commitment of resources on technological infrastructure yet this is a challenge for the libraries in Malawi. Björk's (2007) model, states that implementation of scholarly publishing is often affected by infrastructural issues including lack of required technologies, and poor network capabilities. Findings of this study on lack of technological infrastructure resonate with the findings of Ry-Kottoh et al. (2022) in Ghana who found that the library's infrastructural capacity to host, disseminate, and curate digital content from outside the university was lacking.

At MUBAS, lack of faculty compliance was the main factor that affected scholarly publishing. The bottom line was that academics and researchers do not see the relevance of publishing with the university library because of the questionable credibility of library publishing, need for promotion, and the desire for prestigious journals elsewhere. In line with the Scientific Communication Lifecycle Model, Björk (2007) states that the peer review process and publishers' reputation motivates researchers before submitting their work to publishing channel. Publishing is motivated by feelings of credibility and promotion. In fact, Sanjeeva (2017) in India found that publishing with prestigious journals is a common research practice among researchers, due to their reputational and career advancement roles. This is a motivation among staff everywhere and universities alike since the reputation and credibility of universities rests on the quality of research output (Mzuzu University, 2018). Spiro (2015) equally asserts of the understandable reluctance of some faculty to stake their careers on digital publications that may not carry weight with tenure and promotion committees. Reservations always exist among researchers in trusting local publications, let alone library publishing (Dzandza, 2020; Sandy & Mattern, 2018). Despite the existence of institutional repositories research shows that they are frequently underutilised (Borrego, 2016, 2017). This is in part orchestrated by the perception of academics that depositing a research article in a repository is not worth it and a lack of motivation thereof from institutional administrators.

There was also lack of technical support at MUBAS from the university management. Lack of technical support was attributed to lack of investments and interest on the part of the university. Basically, the university regard the library as an institution not to be tasked with scholarly publishing. To some extent, MUBAS is struggling with poor technological support and lack of investment from the part of management on publishing services. Lack of technical support is also attributed to challenges regarding finances affecting the university. With increasing budgetary deficits, the Malawi government finds it hard to finance university services beyond operations and technical requirements. In such cases, most of the finance is targeted towards the basic university functions which are teaching and learning and therefore other functionalities suffer (Gama et al., 2022). According to Björk (2007), scholarly publishing requires an enabling environment coupled with technical support and interests from the part of authorities for its successful execution. However, due to such deficiencies in support from institutional management, scholarly publishing implementation remains a challenge (Borrego, 2017; Dzandza 2020; Spiro, 2015).

6.5 Summary of findings

The summary of the key findings has been presented following the themes of the study namely, scholarly publishing services offered by university libraries; strategies in promoting scholarly publishing; competences of library staff in scholarly publishing; and factors affecting university libraries in scholarly publishing.

6.5.1 Scholarly publishing services offered by libraries

This objective focused on the scholarly publishing services offered by the university libraries and the types of scholarly works published in library platforms. The study found that the main services offered by all university libraries include repository services, citation management, information organisation, research clinics and promotion, and digitisation. The study further found that the universities did not offer some important scholarly publishing services. These services include, DOI assignment, and ISSN assignment. journal publishing platforms such as OJS, typesetting, editing, peer review, services related to technical infrastructure, and hosting and administering websites of journals. The main types of scholarly works published by all university libraries include ETDs, conference papers and proceedings, special collection materials and research reports.

6.5.2 Strategies for promoting scholarly publishing services in university libraries

The study found that all the four libraries employed three common strategies to promote scholarly publishing namely, depositing ETDs in an institutional repository, directing students to peer reviewed journals and training researchers in research. The study revealed that all university libraries had no specific scholarly publishing policy. However, KUHeS is in the process of developing documentation to have a publishing policy whilst MZUNI has a university publishing policy although not specifically oriented towards scholarly publishing.

6.5.3 Competences of library staff in scholarly publishing

The study found that most library staff in all universities have expert knowledge in information organisation, digitisation, repository services, citation management and plagiarism check. These skills were acquired mostly through personal interests and self-learning. The study further established that library staff at UNIMA have more expert knowledge in publishing services followed by MZUNI, KUHeS and MUBAS. The study also found that most staff across the universities have limited knowledge in some publishing services namely knowledge in hosting of journals, graphic design, and journal publishing platforms such as OJSs.

6.5.4 Factors affecting university libraries in scholarly publishing

The study found that the main factors that affect scholarly publishing in the universities include lack of funding, lack of technological infrastructure, lack of faculty compliance, and lack of technical support. Among these factors, MZUNI is mostly affected by lack of funding; both UNIMA is mostly affected by lack of funding, and lack of technological infrastructure; KUHeS is mostly affected by lack of funding, and lack of technological infrastructure, whilst MUBAS is mostly affected by lack of faculty compliance, and lack of technical support.

6.6 Conclusion

This section provides conclusions based on the major findings of the study in line with the research objectives as presented in Chapter One. The general conclusion is that universities in Malawi have capacity to establish and run scholarly publishing services in their libraries. What is required is the technical, infrastructural and financial support from their mother institutions.

The study found that the main services offered by all university libraries include repository services, citation management, digitisation, information organisation, and research clinics and promotion. The rest of the services were only offered by less than half of library staff whilst some services were not offered at all.

The study found that all the four libraries employed three common strategies to promote scholarly publishing namely, depositing theses and dissertations in an institutional repository, directing students to peer reviewed journals and training researchers in research.

The study found that most library staff in all universities have expert knowledge in information organisation, digitisation, repository services, citation management and plagiarism check. These skills were acquired mostly through personal interests and self-learning.

The study found that the main factors that affect scholarly publishing in the universities include lack of funding, lack of technological infrastructure, lack of faculty compliance, and lack of technical support. MZUNI is mostly affected by lack of funding, both UNIMA and KUHeS are mostly affected by lack of funding, and lack of technological infrastructure, whilst MUBAS is mostly affected by lack of faculty compliance, and lack of technical support.

6.7 Recommendations

Based on the research findings, the study makes the following recommendations:

- Considering that libraries lack the infrastructure resulting from financial challenges, the study recommends that university administrators should recognise the potential of libraries in scholarly publishing and provide adequate support towards capacitating the infrastructure and other requirements.
- Most staff across the universities have limited knowledge in some publishing services, therefore, library schools such as the Department of Information Science at MZUNI should develop curricular and offer education and training to library staff on specific scholarly publishing services.
- The lack of a scholarly publishing policy in the university result in no clear direction in approaching scholarly publishing services, therefore this study recommends that the university libraries should develop scholarly publishing policies to provide guidelines in scholarly publishing work.
- University libraries should market the scholarly publishing services they offer to faculty and other researchers and involve them as potential partners in publishing endeavours.
- University libraries should liaise with faculties and departments on their campuses in determining the publishing needs of researchers on a regular basis in order to adapt, update and develop tailor-made scholarly publishing services. It is recommended that such an initiative be seen as an outreach to researchers in determining the services they require.

6.8 Areas for further research

The findings of this study are not exhaustive such that they exhibit some grey areas that require further investigations. Therefore,

- Future researchers may consider assessing the capacity of Malawian university libraries in establishing scholarly publishing houses.
- There is also need for further research to examine issues of unmet publishing needs among researchers.

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APPENDICES

Appendix I: Questionnaire for library staff



FACULTY OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF INFORMATION SCIENCES

Section A: Demographic Data

S/N	Question and responses	Tick
1	To which institution do you belong	Tick one
	MZUNI	
	UNIMA	
	KUHeS	
	MUBAS	
2	What is your gender?	Tick one
	Male	
	Female	
3	What is your position in the library?	Tick one
	Librarian	
	Assistant Librarian	
	Senior Assistant Librarian	
	Senior / Chief Library Assistant	
	Other, Specify	
4	What is your highest qualification?	Tick one
	PhD in Library and Information Science	
	Master of Library and Information Science	
	Bachelor of Library and Information Science	
	Other, specify	

Section B: Scholarly publishing services offered by university libraries

S/N	Question and responses	Tick
5	<p>In your opinion, select the best option that represents your library's provision of the following scholarly publishing services.</p> <p>Use the following key</p> <ol style="list-style-type: none"> 1. The library is already offering 2. The library is not offering but it has capability 3. The library does not have the capability to offer 4. Not sure 	Indicate the number that best describes your option
	Typesetting	
	Plagiarism check	
	Digitisation services	
	Citation management	
	Editing and peer review	
	Graphic design (print or web)	
	Research clinics and seminars	
	Indexing in scholarly databases	
	Cataloguing and author advisory	
	Assistance in publication process	
	Research counselling and promotion	
	Digital object identifier (DOI) assignment	
	Services related to technical infrastructure	
	Hosting of journals and supplemental content	
	Copyright or intellectual property and licensing	
	International Standard Serial Number assignment	
	Hosting and administering the websites of journals	
	Training and teaching on topics related to publishing	
	Information organisation (e.g., metadata, indexing, etc.)	
	Journal publishing platforms such as Open Journal Systems	
	Publishing new manuscripts, and supporting digital scholarship	
	Repository services that collect, publish, and disseminate scholarly works	
6	<p>Which of the following types of scholarly works are published in your library platforms such as in your institutional repository?</p>	You may tick more than one
	Textbooks	
	Newsletters	
	Monographs	
	White papers	
	Oral histories	
	Niche journals	
	Digital exhibits	
	Course modules	
	Campus journals	

	Research posters	
	Databases and datasets	
	Technical/research reports	
	Digital humanities projects	
	Special collections materials	
	3-D models and computer codes	
	Electronic theses and dissertations	
	Conference papers and proceedings	
	Scholarly and scientific data collections	
	Peer-reviewed monographs and periodicals	
	Digital representations of archives of papers and documents	
	Personal memoirs carried out by librarians, researchers, scholars and academics	
	Others (please specify)	

Section C: Strategies in promoting scholarly publishing services in university libraries

S/N	Question and responses	Tick
7	Is there any policy in the academic library on scholarly publishing for the university?	Tick one option
	Yes	
	No	
8	How is the academic library promoting scholarly publishing?	You may tick more than one
	Providing guidelines on publishing with supervisors	
	Compulsory deposit of thesis in the institutional repository	
	Presentations by academic librarians at postgraduate seminars	
	Directing students to peer-reviewed journals in their areas of specialisation	
	Academic librarians train researchers to acquire the skills in scholarly publishing	
	Others (please specify)	

Section D: Competences of library staff in supporting scholarly publishing

9	Have you ever attended any training workshop(s) on scholarly publishing	Tick one option
	Yes	
	No	

10	Please indicate your level of knowledge on the following scholarly publishing services that a library offers to researchers in a university (Tick all that apply)	Limited knowledge	Expert knowledge
	Typesetting		
	Plagiarism check		
	Digitisation services		
	Citation management		
	Editing and peer review		
	Graphic design (print or web)		
	Research clinics and seminars		
	Indexing in scholarly databases		
	Cataloguing and author advisory		
	Assistance in publication process		
	Research counselling and promotion		
	Digital object identifier (DOI) assignment		
	Services related to technical infrastructure		
	Hosting of journals and supplemental content		
	Copyright or intellectual property and licensing		
	International Standard Serial Number assignment		
	Hosting and administering the websites of journals		
	Training and teaching on topics related to publishing		
	Information organisation (e.g., metadata, indexing, etc.)		
	Journal publishing platforms such as Open Journal Systems		
	Publishing new manuscripts, and supporting digital scholarship		
	Repository services that publish, and disseminate scholarly works		

SECTION E: Factors affecting university libraries in scholarly publishing

11	Which of the factors below does your library face in establishing and sustaining scholarly publishing services?	You may tick more than one
	Lack of funding	
	Perception of librarians	
	Ethical and legal norms	
	Lack of technical support	
	Inadequate staffing levels	
	Lack of faculty compliance	
	Lack of policy frameworks	
	Technological issues or failures	
	Lack of library staff competencies	
	Lack of technological infrastructure	
	Unfriendly political and cultural factors	
	Others (please specify)	

Appendix II: Interview guide



FACULTY OF HUMANITIES AND SOCIAL SCIENCES DEPARTMENT OF INFORMATION SCIENCES

Section A: Scholarly publishing services offered by university libraries

1. Why were the university libraries not offering some services in scholarly publishing despite having the capacity?

Section B: Strategies in promoting scholarly publishing in university libraries

2. What is the nature of policies available at MZUNI and UNIMA?
3. Why were the university libraries mostly using three strategies in promoting scholarly publishing and why were other strategies not commonly used?

Section C: Competences of library staff in scholarly publishing

4. Why were the majority of library staff not attending training workshops in scholarly publishing services?
5. How did library staff obtain knowledge in scholarly publishing services and the reasons behind the lack of knowledge in some scholarly publishing services?

Section D: Factors affecting university libraries in scholarly publishing

6. What contributed to the key factors affecting scholarly publishing services?

Appendix III: Ethical Approval from Mzuzu University Research Ethics Committee



MZUZU UNIVERSITY

DIRECTORATE OF RESEARCH

Mzuzu University
Private Bag 201
Luwinga
Mzuzu 2
MALAWI
TEL: 01 320 722
FAX: 01 320 648

MZUZU UNIVERSITY RESEARCH ETHICS COMMITTEE (MZUNIREC)

Ref No: MZUNIREC/DOR/21/93

23/11/2022.

Chrispin Limbani,
Mzuzu University,
P/Bag 201,
Luwinga,
Mzuzu 2.

ChrispinLimbani@outlook.com

Dear Mr. Limbani,

**RESEARCH ETHICS AND REGULATORY APPROVAL AND PERMIT FOR
PROTOCOL REF NO: MZUNIREC/DOR/21/93: SCHOLARLY PUBLISHING SERVICES IN
UNIVERSITY LIBRARIES IN MALAWI**

Having satisfied all the relevant ethical and regulatory requirements, I am pleased to inform you that the above referred research protocol has officially been approved. You are now permitted to proceed with its implementation. Should there be any amendments to the approved protocol in the course of implementing it, you shall be required to seek approval of such amendments before implementation of the same.

This approval is valid for one year from the date of issuance of this approval. If the study goes beyond one year, an annual approval for continuation shall be required to be sought from the Mzuzu University Research Ethics Committee (MZUNIREC) in a format that is available at the Secretariat. Once the study is finalised, you are required to furnish the Committee with a final report of the study. The Committee reserves the right to carry out compliance inspection of this approved protocol at any time as may be deemed by it. As such, you are expected to properly maintain all study documents including consent forms.

Wishing you a successful implementation of your study.

Committee Address:

Secretariat, Mzuzu University Research Ethics Committee, P/Bag 201, Luwinga, Mzuzu 2; E-mail address: mzunirec@mzuni.ac.mw

Yours Sincerely,



Gift Mbwele

SENIOR RESEARCH ETHICS ADMINISTRATOR

For: CHAIRMAN OF MZUNIREC



Committee Address:

Secretariat, Mzuzu University Research Ethics Committee, P/Bag 201, Luwinda, Mzuzu 2; E-mail address: mzunirec@mzuni.ac.mw

Appendix IV: Informed consent



Mzuzu University Research Ethics Committee (MZUNIREC)

Informed Consent Form for Research in Masters of Library and Information Science

Introduction

I am **Limbani Chrispin Gama** from **Mzuzu University**. I am doing a research on **Scholarly publishing services in university libraries in Malawi**. If there is something you do not understand, you may ask for more clarity. If you have questions later, you can ask them of me or of another researcher.

Purpose of the research

To examine scholarly publishing services of university libraries in Malawi.

Type of Research Intervention

This research will involve your participation in responding to a questionnaire and/or an interview.

Participant Selection

You are invited to take part in this research courtesy of your capacity as a senior library staff, and that your role in scholarly publishing and helping with research may provide information to the study.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate nothing will change. You may skip any question and move on to the next question.

Duration

The research takes place for a period of one month.

Risks

You do not have to answer any question or take part in the discussion/interview/survey if you feel the question(s) are too personal or if talking about them makes you uncomfortable.

Reimbursements

You will not be provided any incentive to take part in the research.

Sharing the Results

The knowledge that we get from this research will be shared with you and your community before it is made widely available to the public. Following, we will publish the results so other interested people may learn from the research.

Who to Contact

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact: Associate Prof **Winner D. Chawinga**. (Dean, Faculty of Humanities and Social Sciences, Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2. chawinga.w@mzuni.ac.mw)

This proposal has been reviewed and approved by Mzuzu University Research Ethics Committee (MZUNIREC) which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about the Committee, contact Mr. Gift Mbwele, Mzuzu University Research Ethics (MZUNIREC) Administrator, Mzuzu University, P/Bag 201, Luwinga, Mzuzu 2, Phone: 0999404008/0888641486

Do you have any questions?

Part II: Certificate of Consent

*I have been invited to participate in research about **Scholarly publishing services in university libraries in Malawi.***

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Signature of Participant _____ **Date** _____

***If illiterate*¹**

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Thumb print of participant

Signature of witness _____ **Date** _____

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the research project. I confirm the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher _____ **Date** _____

¹ A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

Appendix V: Letter of request and acceptance to conduct the study

Limbani Chrispin Gama
Mzuzu University
Private Bag 201
Lubinga Mzuzu, 2

2 December 2022

Cell phone (+265) 888118772

(+265) 999118772

Email: ChrispinLimbani@outlook.com

The University Registrar
Kamuzu University of Health Sciences
Private Bag 360
Chichiri, Blantyre 3

Dear Registrar,

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT YOUR INSTITUTION

I am Limbani Chrispin Gama, a final year Master of Library and Information Science student in the department of Information Science at Mzuzu University with registration number MLIS0220. I am mandated by the university to conduct research as partial fulfillment for the award of a degree as above.

My research is on *Scholarly publishing services in university libraries in Malawi*.

Having received my research ethics and regulatory approval from The Mzuzu University Research and Ethics Committee and herein attached, I am now permitted to proceed with the implementation of my research.

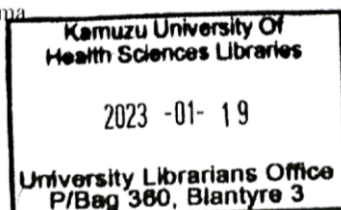
Therefore, this letter seeks to humbly request your permission that I may conduct my study at your institution. To this end, be rest assured that the data collected will be used for academic purposes only.

I hope my letter meets your favourable consideration.

Kind regards,



Limbani Chrispin Gama



Librarian
Please assist
accordingly
J.S.
12/01/23

Lubinga Mzuzu, 2

19 January, 2023
Cell phone (+265) 888118772
(+265) 999118772
Email: ChrispinLimbani@outlook.com

The University Registrar
Malawi University of Business and Applied Sciences
Private Bag 303
Chichiri
Blantyre 3.

Dear Registrar,

Request for Permission to Conduct Research at Your Institution

I am Limbani Chrispin Gama, a final year Master of Library and Information Science student in the department of Information Science at Mzuzu University with registration number MLIS0220. I am mandated by the university to conduct research as partial fulfilment for the award of a degree as above.

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I hope my letter meets your favourable consideration.

Kind regards,


Limbani Chrispin Gama

Libranani
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his matter
MM
12/01/23