

**AN INVESTIGATION INTO THE EMERGENCE OF OPEN ACCESS
JOURNALS IN PUBLIC UNIVERSITIES IN ZAMBIA**

BY

ELIZABETH MVULA

**A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN PARTIAL
FULFILMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF
LIBRARY AND INFORMATION SCIENCE**

THE UNIVERSITY OF ZAMBIA

LUSAKA

2025

COPYRIGHT

All rights reserved. No part of this research report may be reproduced or stored in any form or by any means without permission in writing from the author or University of Zambia.

©2025 Elizabeth Mvula.

DECLARATION

I, Elizabeth Mvula, do hereby declare that this dissertation is my work and that the works of others have been duly and appropriately acknowledged. I further declare that this work has never been submitted to any institution for the award of any academic qualification.

Signature

Date.....

CERTIFICATE OF APPROVAL

This dissertation by Elizabeth Mvula has been approved as partial fulfilment of the requirements for the award of the degree of Master of Library and Information Science by the University of Zambia.

EXAMINERS' NAME, SIGNATURE AND DATE SIGNED

Examiner 1 :

Signature :

Date :

Examiner 2 :

Signature :

Date :

Examiner 3 :

Signature :

Date :

DEDICATION

I sincerely dedicate this dissertation to my father, Mr. Fremont Mvula, who shaped me into the person I am today. Without him, I wouldn't have reached this far. I further dedicate this dissertation to my husband, Christopher Nyirenda, and my children, Martha and Lusubilo, who continually inquired about my progress, motivating me to persevere even when I felt like giving up. I'm thrilled that this accomplishment brings you pride. May God bless you abundantly for your unconditional love and faith in me.

ACKNOWLEDGEMENT

Foremost, I would like to express my deepest gratitude to the Almighty God, who has been my guide, strength, and inspiration throughout this research study. I would like to extend my sincere gratitude to my Supervisor, Dr. Tuesday Bwalya for his exceptional guidance, support, and expertise throughout this research study. I am deeply grateful for the opportunity to have worked under his supervision and appreciate the time and effort he invested in me to bring this research to fruition. I also acknowledge the study participants because my work was dependent on them. I thank all the participants in my study. Lastly, I would also like to express my heartfelt appreciation to my family for their constant source of support, encouragement, and love throughout my research journey.

ABSTRACT

The advent of digital technologies has revolutionized the way research is conducted, disseminated, and accessed. Open Access Journals (OAJs) have emerged as a vital channel for disseminating research findings, promoting knowledge sharing, advancing scholarship, and amplifying the visibility of research findings. In Zambia, public universities play a critical role in driving research and innovation. However, limited access to research outputs has hindered the growth of research and development in the country.

Against this background, this study aimed to investigate the emergence of OAJs in public universities in Zambia, focusing on their support levels, types of systems and publishing licensing models in use, potential benefits/opportunities, and challenges.

The study used an exploratory design and qualitative data collection methods to investigate the emergence of OAJs in public universities in Zambia. It involved a complete census approach, involving all nine registered universities with the Higher Education Authority (HEA). However, only (3) public universities i.e.; Chalimbana University, Kwame Nkrumah University, and the University of Zambia participated in the study.

The study employed a purposive sampling method to select 17 key informants, who included managing editors, chief editors, and editors, from the three public universities which run OAJs. However, data was only collected from 14 key informants. Qualitative data was collected using an observation checklist and interview guide from 14 key informants (representing 14 OAJs) and analysed using Qualitative Data Analysis (QDA) lite software.

The findings revealed that public universities in Zambia increasingly supported OAJs due to advocacy activities, and growing awareness of their benefits. Lecturers and researchers have a positive attitude toward OAJs, leading to greater acceptance in the studied public institutions. The study further revealed that management support was crucial for the introduction and utilization of OAJs, while the lack of policy and financial constraints hindered their full utilisation. The study found that 14 OAJs in Zambian public universities used Open Journal System (OJS) 3.1.0.1 and Creative Commons (CC BY) Licensing Models, despite the absence of explicit licensing model declarations on their websites.

The study findings established that OAJs in public universities in Zambia offered benefits like increased visibility, citations, collaboration, and reduced costs. However, factors such as inadequate funding, infrastructure, and internet connectivity posed significant challenges to the running of OAJs in the studied public universities. Therefore, the study recommended that public universities, find ways to fund OAJs without charging author fees, provide reliable internet connectivity, and build the capacities of editorial teams for AOJs in public universities in Zambia to improve the quality of journals.

Keywords: Open Access Journals, Public Universities, Zambia.

TABLE OF CONTENTS

COPYRIGHT.....	i
DECLARATION	ii
CERTIFICATE OF APPROVAL	iii
DEDICATION	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
LIST OF ACRONYMS.....	xii
CHAPTER ONE: INTRODUCTION.....	1
1.0 Overview	1
1.1 Background to the Study.....	1
1.2 Statement of the Problem	8
1.3 Purpose of the Study.....	8
1.4 Research Objectives.....	9
1.5 Research Questions	9
1.6 Significance of the Study.....	9
1.7 Delimitation of the Study.....	11
1.8 Theoretical Framework.....	11
1.9 Operational Definitions of Concepts.....	18
1.10 Summary	19
CHAPTER TWO: LITERATURE REVIEW	20
2.0 Overview	20
2.1 Concept of Open Access Journals	20
2.2 Types of Open Access Journals	20
2.3 Open Access Journals and Subscription Based Journals	22
2.4 Awareness and Usage of Open Access Journals	24
2.5 Support Levels of Open Access Journals Publishing	29
2.6 Open Source Journal Publishing Systems	32
2.6.1 Types of Open Source Journal Publishing Systems	32

2.7 Publishing Licencing Models	34
2.7.1 <i>Types of Creative Commons Licences</i>	35
2.8 Benefits of Open Access Journals	39
2.9 Challenges Open Access Journals Face	41
2.10 Summary	44
CHAPTER THREE: RESEARCH METHODOLOGY	47
3.0 Overview	47
3.1 Research Philosophy	47
3.2 Research Approach	47
3.3 Research Design	48
3.4 Study Population	48
3.5 Sample Size and Sampling Procedure	48
3.6 Data Collection Instruments and Procedure	49
3.7 Pilot Study	50
3.8 Data Analysis	50
3.9 Trustworthiness and Credibility	51
3.10 Ethical Consideration	52
3.11 Summary	52
CHAPTER FOUR: PRESENTATION OF THE RESEARCH FINDINGS	54
4.0 Overview	54
4.1 Characteristics of Key Informants	54
4.2 Current Support Levels of Open Access Journals in Public Universities in Zambia	56
4.3 Types of System and Publishing Licencing Models used by Open Access Journals in Public Universities in Zambia	57
4.4 Benefits of Using Open Access Journals in Public Universities.	59
4.4.1 <i>Increased Visibility and Impact</i>	59
4.4.2 <i>Increased Citations</i>	60
4.4.3 <i>Greater Opportunities for Collaboration</i>	61
4.4.4 <i>Easy Access</i>	61
4.4.5 <i>Reduction in Cost of Processing and Production of Articles</i>	62
4.5 Challenges of Open Access Journal Publishing in Public Universities in Zambia.	62
4.5.1 <i>Lack of Funds</i>	63

4.5.2 Infrastructure	64
4.5.3 Intermittent or Erratic Internet Availability	64
4.5.4 Inadequate Advocacy	64
4.5.5 Predatory Journals	65
4.5.6 Impact Factor.....	66
4.5.7 Other Challenges	66
4.6 Summary	67
CHAPTER FIVE: DISCUSSION OF RESEARCH FINDINGS.....	69
5.0 Overview	69
5.1 Demographic Characteristics of Key Informants	69
5.2 Current Support Levels of Open Access Journals in Public Universities in Zambia.	70
5.3. Types of System and Publishing Licensing Models Used by Open Access Journals in Public Universities in Zambia.....	71
5.4 Benefits of Using Open Access Journals in Public Universities	73
5.5 Challenges of Open Access Journal Publishing in Public Universities in Zambia.	76
5.6 Challenges Affecting OAJ Publishing in Public Universities in Zambia: A TOE Framework Perspective	83
5.7 Summary	84
CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS.....	86
6.0 Overview	86
6.1 Current Support Levels of OAJ Publishing in Public Universities in Zambia	86
6.2 Types of Systems and Publishing Licensing Models Used by OAJs in Public Universities in Zambia....	86
6.3 Establish Possible Benefits/Opportunities that Accrue to Public Universities Using OAJs.....	87
6.4 The Possible Challenges of OAJ Publishing in Public Universities in Zambia.	88
6.5 Conclusion.....	88
6.6 Recommendations	89
6.7 Recommendations for Future Research	89
REFERENCES.....	90
APPENDICES	101
Appendix 1: INTERVIEW GUIDE	101
Appendix 2: OBSERVATION GUIDE	106
Appendix 3: APPROVAL OF STUDY.....	107

LIST OF TABLES

Table 1: Open Access Journals in Public Universities in Zambia.....	54
---	----

LIST OF FIGURES

Figure 1: The TOE Model.....	11
Figure 2: Types of Creative Commons Licences.....	38

LIST OF ACRONYMS

APC	Article Processing Charge
BOAI	Budapest Open Access Initiative
CC	Creative Commons
CHAU	Chalimbana University
ECHO	European Cultural Heritage Online
HEA	Higher Education Authority
ICTs	Information Communication Technologies
IJOL	International Journal of Librarianship
IRs	Institutional Repositories
KNU	Kwame Nkrumah University
LMIC	Lower and Middle Income Countries
OAJ	Open Access Journal
OAJs	Open Access Journals
OAP	Open Access Publishing
OJS	Open Journal System
OSJPS	Open Source Journal Publishing Systems
QDA	Qualitative Data Analysis
TOE	Technology-Organisation-Environment
UNZA	University of Zambia
UWI	University of West Indies

SBJs	Subscription-Based Journals
WIPO	World Intellectual Property Organisation
ZAJLIS	Zambia Journal of Library and Information Sciences

CHAPTER ONE: INTRODUCTION

1.0 Overview

This chapter introduces a study on Open Access Journal (OAJ) publishing in public universities in Zambia, with the purpose of investigating its emergence. The study aimed to examine the current support levels of OAJ publishing, identify the types of systems and licensing models used, uncover the benefits of implementing OAJ, and ascertain the challenges faced by universities that have not implemented OAJ.

The rationale behind choosing public universities in Zambia was that these institutions have pioneered the adoption and establishment of open access journal platforms, thereby providing a solid foundation for investigating the dynamics of OAJ publishing.

The chapter presents the background to the study and explains the statement of the problem that the study addresses, the purpose of the study, study objectives, research questions, and significance/justification of the study. It also presents the delimitation of the study, the theoretical framework, operational definitions of concepts, and the summary of the chapter.

1.1 Background to the Study

The emergence of open access publishing (OAP), resulting from the mutualistic association between scholars and publishers, emerged in the 21st Century. It should be noted that before the emergence of OAP, university scholars in search of retention, tenure, and promotion sent their scholarly writings free of charge to commercial journal publishers (Lewis, 2008). Though scholars still provided free articles to improve their status in their fields of discipline, the fees for journal subscriptions increased dramatically and arguably prices have continued to rise ten percent a year for the last thirty years (Chen, 2001). In that regard, Tenopir and King (2000) assert that the notion of OA publication arose in the wake of scholars' protests in North America and Britain against the ever-increasing costs of journals and against what they perceived as exploitative subscription models of digital journal databases. OAP is a pool of technological outlets that provide a platform for disseminating research findings.

Progress of every profession, academic discipline, and society at large rides on the back of research and development. Research generates new information and knowledge (Tenopir & King, 2000). It is a standardised process of identifying problems, collecting data or evidence, tabulating data and its analysis, drawing inferences, and establishing new facts in the form of information. Information has its life cycle: conception, generation, communication, evaluation and validation, use, impact, and lastly fuel for new ideas. Research results are published in journals, conference proceedings, monographs, dissertations, and reports, and now the web provides many a new forum for communication. Further, since their origin in the 17th Century, journals have remained very popular and important channels for the dissemination of new ideas and research (UNESCO, 2015).

Furthermore, at the beginning of the 21st Century, emerged the OA movement with the Budapest Open Access Initiative (BOAI) (BOAI, 2001). The philosophy of open access is to provide free of charge and unhindered access to research and its publications without copyright restrictions. The movement got support from great scientists, educationists, publishers, research institutions, professional associations, and library organisations.

Another landmark meeting was held in 2003 at the Hughes Medical Institute in Chevy Chase, Maryland, which resulted in the Bethesda Statement on Open Access publishing. The Bethesda Statement on open access publishing advocates for open access as a property of individual works, not necessarily journals or publishers. The Bethesda statement emphasizes community standards of attribution rather than control through copyright. The Bethesda Statement builds upon the BOAI but differs from it in that; the BOAI does not indicate how copyright owners will operationalize the open access concept. The Bethesda Statement specifies that copyright owners will grant users certain rights under licenses and these rights shall be free, irrevocable, worldwide, and perpetual. One such right under the Bethesda Statement, which the BOAI doesn't specify, is the right to make derivative works. For example, work could be translated into another language without requiring permission. The Bethesda Statement also introduces the requirement that open access documents be deposited in digital repositories in "well-established" organizations, as opposed to author home pages or digital archives whose long-term prospects are in doubt (Crawford, 2011).

The other OA declaration is the Berlin Declaration which was a third and influential event in the establishment of the open access movement that referred to the three events combined as the "BBB definition" of open access as the three overlap with and informs one another. The declaration was drafted at an October 2003 conference held by the Max Planck Society and the European Cultural Heritage Online (ECHO) project. It was one of the milestones of the Open Access movement and was attended by more than 120 German and international experts and decision-makers from, research organisations, professional societies, museums, archives, libraries, research funding organisations, political institutions, commercial and non-profit providers of scientific information. The discussion focused predominantly on ways of providing access to research findings, otherwise known as the open access paradigm (Suber, 2012).

Alongside the Budapest Open Access Initiative (BOAI) and the Berlin Declaration on Open Access to Knowledge in Sciences and Humanities, the Bethesda Statement established OA as the term to describe initiatives to make information more widely and easily available. The OA declarations at Berlin and Bethesda which put it on strong footing was the declaration stating that research being a public good should be available to all irrespective of their paying capacity.

Open Access refers to free unrestricted online access to information. It allows users access to knowledge by providing a legal platform to open up what the intellectual property system had legally closed up (Ola, 2014). According to Bawack and Nkolo (2018), OA is a broad term used for all knowledge resources that are made available to the public for access and open consumption at a wide scale, without any hindrance subscription fee, or access charges. According to Budapest Open Access Initiative (BOAI), Open access means the free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (Budapest Open Access Initiative, 2001). Due to that, scholars' point of view in this new model is to access required information freely, and open access (OA); has been a familiar word in library literature for years (Yang and Li, 2015).

Open access is quite important for higher learning institutions because, in the 21st century, research findings, teaching materials, and e-journals cannot easily be available on time and to the required standards without e-information (Yared and Ngulube, 2015). Open access has been acclaimed to have a greater impact on research, teaching, and learning in higher education through increased and easier access to scholarly research output. Through open access, the visibility and accessibility to research output from both developing and developed countries is made easy and without restrictions, and in teaching and learning open access provides a wide range of barrier-free information to teachers and learners (Suber, 2015; Kelemwork and Nsala, 2015). There are several open access titles available as well as open access journals.

OA has many forms of access and usage, varying from total freedom to paying charges, full permission to copy, download, print, distribute, archive, translate, and even change the format to its usage with varying restrictions (UNESCO, 2015). OA has certain characteristics that make it qualify as open access. According to (Willinsky, 2003) there are nine characteristics of open access. These are E-print archives; which are authors' self-archive i.e. pre or post-prints.

Unqualified; these are immediate and fully open access publications of a journal. Dual-mode; this demands that both print subscription and open access versions of a journal are offered. Delayed open access entails that open access is only available after a certain period. Author fee; authors pay a fee to support open access. Partial open access; some articles from a journal are available via open access. Per-capita; this entails open access is made available to countries based on per-capita income. Abstract; open access is available to table of contents/abstracts, and Co-op; institutional members support open access journals (Velmurugan, 2011).

The above descriptions establish that any resource published is made available online worldwide. It can be readable, downloadable, copyable, and also be distributed freely for research purposes. According to (Velterop, 2005), “an OAP is defined as one that meets the following two conditions: the author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for

any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.”

Open access publishing is an initiative that aims to provide universal, unrestricted free access to full-text scholarly materials via the internet. There are two primary types of OAP for delivering research articles; namely Open Access Journals (OAJs) and Open Access Archives (OAA). OAJ refers to scholarly, peer-reviewed journals in which all content is available freely on the web from day one, either exclusively online or parallel with a subscription print version, and which can be accessed by anyone with internet access. OAJs can be read or downloaded, at no charge (Laasko et al, 2011).

According to (Velmurugan, 2011) OAJs are free, immediate, permanent, full-text, online access, for any user who has access to the internet, and may link, read, download, store, print out, and use the content of that article. On the other hand, OAA simply provides a persistent digital repository where authors or owners of the content may archive their document either by putting articles on author websites, depositing articles in disciplinary archives, or depositing articles in institutional archives and repositories.

Open access journals began emerging in the early 1990s. The newly launched journals were comparatively low-key, departmentally-based initiatives that were dependent upon voluntary services for editorial developments (Bjork, 2012). These signified the early beginnings of open access journals before a different kind of open access journal which is now becoming more common. This is a commercial profit based concern that nevertheless is committed to making research freely available. This type of group typically relies upon author charges as well as sponsorships from national bodies and philanthropic foundations.

There is a rapid growth of journal publication on one side and the libraries continue crying about their inability to pay for the increasing cost of print journals. Due to the rapid increase in scholarly output and increased journal prices, it is becoming difficult even for libraries in rich countries to subscribe to journals that are required by their clients (Obuh and Bozimo, 2012). As a response to frustrating journal prices and other accompanying restrictions, the scholarly community has sought alternative scholarly publishing and accessing systems, by using Information Communication Technology, aimed at the wider distribution of scholarly content

without price or other copyright restrictions to end-users, which is called as open access model (Moller, 2006; Yiotis, 2005).

OAJ publishing is one of the primary OA publishing formats in practice for delivering research results to the public free of charge. Publishing articles in an OA journal entails a peer-review process and requires original contributions, identical to traditional scholarly journal publishing, providing necessary control over research quality. OAJs have four features they; are scholarly/peer-reviewed journals, use a quality control mechanism just like conventional journals, are published online and made available through the Web, and do not charge the readers as they are freely accessed by the readers (Norris et al, 2014). However, the last two characteristics of OAJs distinguish them from commercial journals.

Open Access approaches, frameworks, and models promise to create opportunities for the participation of African universities in global knowledge production activities at the service of local economies and societies. Open access approaches are premised on the conception of information and knowledge as a public good rather than a commodity that, foretold, will be produced to be sold; is and will be consumed to be valorised in a new production. As a public good, it gives rise to open institutional innovations and practices that lead to socially efficient outcomes. As a commodity over which intellectual property rights are assigned, it conveys a monopoly right that prevents ideas from being used to satisfy the needs of society (David & Foray, 2002).

As mentioned by Mammo and Ngulube (2015), Ethiopian university libraries are already considering open access models as one of their options to increase the accessibility of e-journals and to better serve users. The benefit of open access journals in higher learning institutions is enormous. Therefore, the debate on the importance of open access publication for publicly funded scientific output is now wondering how to get access to open access journals from the North and how to get local and regional research outputs to international users (Chan, et al., 2005). Open access journals provide the potential to foster partnerships and strengthen scientific cooperation among academic staff in higher learning institutions; however, the emergence of free and open access journals in higher learning institutions has not been adequately studied in developing countries such as Zambia.

Many scholars have embraced OAJs in that they use OAJs not only to publish their works but also for research activities. In light of this, there has been a remarkable increase in the number of AOJs listed by the Directory of Open Access Journals DOAJ. The DOAJ currently contains 21,370 peer-reviewed journals, 13,680 of which are searchable without article processing charge level, and these counts are updated regularly (DOAJ, 2024). The directory aims to provide visibility of and exposure to open access journals to promote their usage and impact, a key consideration for their uptake by prospective authors.

According to Makoni (2021), a new continental platform for the AOJs, monographs, and textbooks in Africa has been developed by South Africa's University of Cape Town (UCT) through its library service. The platform allows the African research community to share their scholarly content, which could advance the growth and development of local research aimed at benefiting African society. The increase in OAJs is driven by people in academia who are setting up OAJs to foster access to these journal articles freely. For Example, The University of Zambia Library has put in place measures that allow lecturers and researchers to have access to OAJs by way of putting up a link to DOAJ on its home page to give its users more access to these publications. This allows those in academia, especially lecturers and researchers, to access journal articles freely and also encourages them to publish in AOJs (Bwalya et al, 2019). It is against this background that this study is to be conducted to investigate the emergence of AOJ publishing in public universities in Zambia.

The concept of Open Access Publishing (OAP) emerged in the 21st century as a response to increasing journal costs and restrictive copyright laws. Key declarations such as the Budapest Open Access Initiative (2001), Bethesda Statement (2003), and Berlin Declaration (2003) promoted free access to research findings. These declarations emphasized the importance of making research findings freely available to everyone. The Directory of Open Access Journals (DOAJ) was established to promote and provide visibility to open access journals. OAP increases accessibility to research, promotes research and learning, fosters partnerships, advances local research, and reduces journal costs, ultimately benefiting society, particularly in developing countries.

1.2 Statement of the Problem

The emergence of open access journals (OAJs) has made scholarly literature freely accessible through the Internet, and many research institutions and universities have OAJs. For instance, the University of Cape Town and the University of Pretoria, in South Africa have adopted OAJs and have become an integral part of research and publication in supporting teaching and learning activities (Arunachalam, 2003). The adoption of OAJs has reduced the cost that universities spend on acquiring scholarly output and has improved the worldwide ranking of the university.

Many studies that have been conducted on OAJs focus on the awareness and attitudes of scholars and researchers about this mode of open access publishing. For example, studies by Zheng and Yu (2014) in the United States of America (USA); Ivwighreghweta and Onoriode (2012) in Nigeria; Lubasi, Ndebele and Mayaka (2018); Bwalya, M'kulama, and Mwalimu (2019) and Chewe, et al (2021) in Zambia address awareness, use, and attitude of lectures and researchers towards OAJs.

The above studies conducted in other countries and Zambia only focused on awareness, use, adoption, and barriers to OA publishing at the University of Zambia. The studies fail to analyse among other issues, the benefits, type of system, and publishing license models of OAJs. Further, no study has been conducted in Zambia to establish the current support levels of OAJ publishing in public universities in Zambia. The study sought to establish the current support levels of OAJs and the types of system and publishing licensing models used in public universities. Further, it establishes the possible benefits accrued, as well as challenges faced by public universities that have implemented OAJs in Zambia.

1.3 Purpose of the Study

This study seeks to investigate the advent of OAJ publishing in public universities in Zambia. Open access Journal publishing is becoming very common in many academic institutions and it's an emerging trend that therefore needs to be comprehensively studied. Therefore, there was a need to comprehensively study the current support levels of open access journal publishing and also understand the types of systems and licensing models used by AOJs in public universities in Zambia, considering that there are several publishing licensing models that are available for OAJs to use. Further, the study needed to uncover the possible benefits that accrued to

universities implementing OAJs. Additionally, in any adoption of any technology, there are challenges hence, this study needed to ascertain the possible challenges that are being faced by public universities that have not implemented OAJs in Zambia. The purpose of this study was to investigate the emergence of open access journals in all public universities in Zambia.

1.4 Research Objectives

The study aimed to investigate the emergence of OAJ publishing in public universities in Zambia and uncover the current support levels, types of systems and publishing licensing model in use, opportunities as well as challenges faced with regards to OAJs in public universities in Zambia. In this regard, the specific objectives of the study were to:

- i) establish the current support levels of OAJ publishing in public universities in Zambia,
- ii) explore the types of system and publishing licensing models used by OAJs in public universities in Zambia,
- iii) establish possible benefits/opportunities that accrue to public universities using OAJs,
- iv) determine the possible challenges of establishing OAJ publishing in public universities in Zambia.

1.5 Research Questions

This study was guided by the following research questions: -

- i) What are the current support levels of OAJ publishing in public universities in Zambia?
- ii) What type of systems and licensing models are public universities in Zambia using in publishing their OAJs?
- iii) What benefits have accrued to public universities for adopting AOJs?
- iv) What are the challenges of establishing OAJ publishing in public universities in Zambia?

1.6 Significance of the Study

This study was very significant in that, in Zambia, the opportunities and challenges of OAJ publishing in public universities were not documented as there has never been any research to investigate the extent to which public universities in Zambia establish OAJ publishing. The

possible opportunities and challenges presented to public universities by OAJs were likewise not known. The absence of research henceforth, on whether or not public universities establish OAJ publishing has the potential to render knowledge output from public universities useless.

The study was very significant because it helped uncover the type of system licensing models used as it was very clear for any journal to indicate its licensing model being used. For the licensing models which were not properly linked or indicated, the study can raised awareness in that regard.

Furthermore, universities worldwide are ranked based on their web presence hence the findings would assist public universities in Zambia in devising strategies in line with academic staff needs. Increased academic staff provision of research works would be useful in organisation of the public university's academic databases so that they would be comparable to other world universities through OAJ publishing.

The study equally aimed at identifying the challenges of developing the full potential of OAJ publishing in public universities and if challenges were unveiled, the study would communicate and make aware of the challenges to the stakeholders which are the organisations, institutions running, and sponsoring OAJs to improve or find solutions. The study also acted as an advocacy avenue for individuals and public institutions funding publications via open platforms for all to access. The research findings were useful as a yardstick for public university managers to steer ahead with principles of OA mandates and promote symbiotic relations among stakeholders of scholarly knowledge production in Zambia's public universities.

Finally, it is a real fact that as a developing country, Zambian public university libraries also have a limited budget to buy or subscribe to all required journals for users. The appearance of open access, a new form of scholarly communication based on ICTs, offers the potential for developing countries to alter the style in which scholars throughout the world can access and disseminate scholarly information. Open access publishing provides a potential solution for increasing the visibility of such research output, however, while there have been efforts made to advocate for open access publishing, the uptake has been noticeably very low. Unless a study was conducted, challenges being faced concerning the establishment of OAJ publishing would not be known. The research also provided insight into opportunities that OAJs present to public universities in Zambia.

1.7 Delimitation of the Study

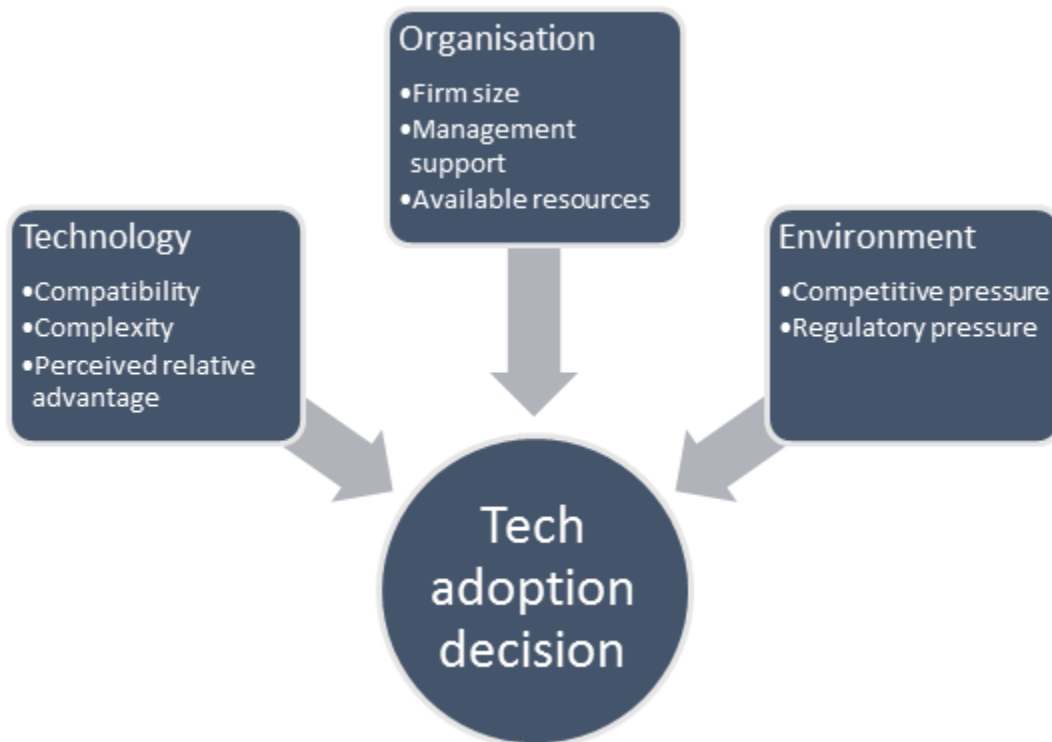
This study was conducted only in public universities that had running OAJs on their websites and were registered with the Higher Education Authority (HEA). The study was not conducted in private universities and colleges. The study did not investigate commercial journal systems or Institutional repositories (IR) but only focused on OAJs in public universities in Zambia.

1.8 Theoretical Framework

This study was anchored on the Technology-Organization-Environment (TOE) Framework. The TOE is a theoretical framework that facilitates the comprehension of the acceptance and deployment of technological innovations within organizational settings, developed by Tornatzky and Fleischer (1990). The framework was developed in the field of information systems to explain how the adoption, use, and management of new technologies are influenced by various factors. According to Al-Fahim et al., 2022, the framework consists of three main factors namely: technology, organization, and environment. These three factors do not only present barriers to the growth of technology but also act as enablers to the adoption of technology. (Idris et al., 2017).

The TOE framework is a valuable tool for understanding the adoption and implementation of technological innovations, such as OAJs within an organization. This framework was particularly relevant to this study as it provided a comprehensive understanding of the complex relationships between the three primary factors that interact and influence one another, ultimately shaping the adoption, implementation, and management of OAJs in public universities in Zambia.

Figure 1: *The TOE Model*



Source: Cruickshank, Peter (2016)

1.8.1 Technological Factors

Technological factors refer to the characteristics of the technology itself, including its functionality, complexity, compatibility with existing systems, ease of use, maturity level, reliability, security features, and innovation potential, all of which influence how an organisation adopts and implements new technologies. This factor considers all of the aspects related to the technologies (equipment/processes) already in use by an organisation and new technologies not yet in use (Zhu and Kraemer 2005).

Technological factors have a bearing on the extent to which OAJs can be adopted, implemented, and used in an organisation. The adoption and implementation of OAJs in public universities in Zambia are influenced by various specific technology factors which include:

- (i) **Compatibility:** This entails how well the new technology integrates with existing systems and infrastructure within the organization. For example, OAJs can be integrated with existing publishing systems, digital repository systems, and library systems, making it easier for institutions to operate them. Integrating OAJs with existing journal management systems, such as Open Journal Systems (OJS), thereby harmonizing manuscript submission, peer review, and publication processes can mitigate resistance to adopting the innovation. Ensuring compatibility will enable the successful adoption and implementation of OAJs. Inadequate digital infrastructure and limited technical support are likely to restrict OAJs' ability to operate effectively.
- (ii) **Perceived Relative Advantage:** This refers to the perceived benefits a new technology offers compared to existing methods. The benefits of the innovation compared to its alternatives act as an important role in fostering firm adoption and implementation. When an organization perceives a specific innovation to be advantageous for its business, the innovation is likely to be adopted. A new technology that is user-friendly and provides a positive experience is more likely to be adopted and used. For example, if technology is effective, performs well, and delivers the desired outcomes, it is more likely to be adopted and used. The greater the perceived benefits by the institutions, the greater the potential for the adoption and use of OAJs.
- (iii) **Observability:** This involves the visibility of the technology's benefits and results, which can influence adoption decisions. For example; this study has indicated that public universities that have adopted OAJs have reported remarkable outcomes, including increased visibility, ease of accessibility, and heightened impact, as evidenced by improved H-Index scores due to higher citation rates, ultimately leading to greater chances of promotions and development. When positive results for OAJs are visible, other institutions are likely to adopt and utilize OAJs.
- (iv) **Complexity:** This involves the degree of complexity of the technology, which can affect its adoption and use. Technological can either facilitate or hinder the adoption and implementation of new technologies within an organization depending on the degree of complexity. For OAJs to flourish the system should be

straightforward and user-friendly and this can only be achieved by integrating clear and simple instructions on how to submit manuscripts and as well as the publishing process. For example, if the technology is found to be easy to use, the technology is likely to be adopted and used. According to this study, if the technology is easy to use will encourage more academic members of staff and researchers to publish in AOJs. On the other hand, if the technology is complex, it will hinder the adoption and implementation of OAJs within public universities.

- (v) **Trialability:** This is the ability to test or pilot the technology before committing to full-scale adoption. Investigating the trialability of OAJs involves evaluating the ability to experiment with OAJs on a small scale before full implementation. This allows institutions to test the feasibility, effectiveness, and potential challenges of OAJs in a controlled environment. This can be done starting with a department of then subsequently spread throughout the whole institution. By embracing trialability and piloting OAJs, institutions ensure a successful transition to open access publishing, minimize risks, and create a more effective and sustainable publishing model.

In terms of the technology factor, the advent of digital technologies and internet connectivity has enabled the creation and dissemination of OAJs. The availability of open-source software and digital platforms has reduced the costs and barriers associated with traditional print-based journals, making it possible for public universities in Zambia to establish and maintain OAJs in public universities in Zambia. The study reviewed that the successful implementation and management of OAJs are contingent upon the availability of robust digital infrastructure and reliable technical support. However, institutions with limited resources often face significant barriers to adoption, as inadequate digital infrastructure and insufficient technical expertise can severely impede the effective operation of OAJs.

1.8.2 Organizational Factors

The organizational factor, on the other hand, pertains to the internal environment of the organization, encompassing its structure, culture, size, and strategy. This factor recognizes that an organization's internal characteristics can significantly influence its ability to adopt and

implement new technologies (Chau and Tam, 2000). For instance, an organization's culture may either support or hinder the adoption of new technologies, while its size and structure may impact its ability to allocate resources and expertise to technological innovation. The organizational factor is critical in understanding how technological innovations are perceived, adopted, and implemented within an organization. The adoption and implementation of OAJs in public universities in Zambia can be influenced by a combination of specific organisational factors which include;

- (i) **Management Support:** Top management support refers to the extent to which an organization's senior leaders and executives actively promote and support the adoption and implementation of new technologies. Strong leadership commitment towards technology adoption is crucial for successful implementation. For example, if there is no management support towards the adoption of OAJs, chances are very high that they are likely not to be successfully adopted and used in these public universities. Therefore their adoption and use entirely depend on top management support. This study was able to establish that the introduction and utilization of OAJs by higher learning institutions were due to management support, while those not fully utilized were due to compromised support. Therefore, it is evident that for OAJs to flourish in public universities there must be top management support.
- (ii) **Organizational Culture:** These comprise the values, norms, and beliefs within public universities that would promote or hinder the adoption of OAJs. A culture that values openness, transparency, and knowledge sharing can promote the adoption of OAJs. A culture that encourages innovation and risk-taking is more likely to embrace new technologies. For OAJs to flourish there is a need for collaboration and innovation. For example, collaboration enables researchers to easily access and build on previous research, resulting in discoveries and innovations. This study indicated that the growing demand for access to research outputs and the increasing recognition of the importance of knowledge sharing and collaboration have also driven the adoption of AOJs in higher learning institutions in Zambia.
- (iii) **Skilled Human Resources:** The availability of skilled personnel to manage and maintain OAJs is essential for successful implementation. There is a need to

improve the capacity building of all editorial teams for the OAJ in HEIs in Zambia to improve the quality of publications. The findings of this study emphasized that adequate human resources are essential for OAJs to flourish. The level of technical expertise within the workforce impacts the ability to adopt and use new technology effectively.

- (iv) **Financial Resources:** The availability and adequate funding are necessary to support the implementation and maintenance of OAJs. The study revealed that OAJs need funds to cover publication costs such as editorial work, peer review, and APCs, including DOI registration. Lack of funding is an important limitation that results in low research output. This therefore calls for public universities to be innovative and resourceful if they are to sustain the OAJ publishing model.

Organizational factors play a crucial role in the advent of OAJs in public universities in Zambia. The universities' strategic goals and objectives, such as increasing research output and visibility, promoting knowledge sharing and collaboration, and enhancing academic reputation, have driven the adoption of OAJs. Additionally, the organizational culture and values of the universities, such as a commitment to social responsibility and community engagement, have also influenced the emergence of OAJs in public universities in Zambia. It is also therefore important to establish institutional policies that support and encourage the use of OAJs by providing necessary resources, such as training sessions and technical support, reinforcing the commitment of the institution to the successful adoption and use of OAJs in public universities.

1.8.3 Environmental Factors

Lastly, the Environmental factors pertain to the external environment in which the organization operates, including market trends, competitors, and regulatory requirements, customer needs and expectations, laws and policies, and demographic, economic, and social factors that influence the organization. This context acknowledges that organizations do not operate in a vacuum, but are instead influenced by a range of external factors that can impact their ability to adopt and leverage new technologies (Zhu and Kraemer 2005). Specific environmental factors include:

- (i) **Government Policies and Regulations:** Government Policies refer to the laws, regulations, and incentives that govern the environment in which an organization operates and influence its technology adoption decisions. Laws, regulations, and policies that support OA can promote the adoption of OAJs. Government policies and regulations can influence the adoption of OAJs by providing funding and support for OA initiatives. For example, the National Research Fund has provided funding and support for research and publication. It should be noted that without government policies and mandates, OAJs will continue to struggle with visibility, discoverability, and marketing.
- (ii) **Industry Pressures:** International publishing trends, academic communities, and research funding agencies can influence the adoption of OAJs. For example, publishers may feel pressure to adopt OAJs to remain competitive with other publishers who have already made the change.
- (iii) **Competitive Pressures:** This refers to the forces that drive organizations to compete with each other in the marketplace. Pressure from others to adopt OAJs can drive adoption. Intense competition from other universities and research institutions is likely to stimulate the adoption and use of OAJs. This for instance can be achieved by researchers projecting their research capabilities and output on the OAJ platforms so that they remain competitive on the market. Authors also may increasingly demand open-access publishing options, forcing publishers to adopt OAJs to remain attractive. In this regard, in an environment where there is too much competition, there is a need to be innovative for institutions to remain competitive.
- (iv) **Social Pressures:** This refers to the influence that society, culture, or social groups exert on an individual's behavior, attitudes, or decisions. Expectations and demands from students, faculty members, and the broader academic community for access to OAJs can promote adoption. For example, colleagues and peers may influence an individual's decision to publish in OAJs, especially if they are already publishing in open-access venues.

The adoption and implementation of OAJs are influenced by the interplay between technological, organizational, and environmental factors. In line with this model, it can be argued

that the adoption of OAJs requires technical infrastructure and support, which is influenced by the availability of human resources and financial resources. Top management support and organizational culture are influenced by industry pressures, competitive pressures, and social pressures. Top management support and organizational culture are critical for the adoption and implementation of OAJs. Higher education institutions should therefore assess their technological readiness for OAJs and develop strategies to address any technical challenges. Government policies and regulations can play a crucial role in promoting the adoption of OAJs. Institutions should be aware of industry pressures, competitive pressures, and social pressures that can influence the adoption of OAJs. By understanding the relationships between technological, organizational, and environmental factors, institutions can develop effective strategies to promote the adoption and implementation of OAJs. Addressing these factors is essential for the successful integration of OAJs in these institutions.

The emergence of open access journals in public universities in Zambia is a complex phenomenon that can be understood through the lens of the Technology Organisation Environment (TOE) framework. The interplay between technological advancements, organizational factors, and environmental influences has created a conducive environment for the adoption and growth of OAJs. As Zambia continues to navigate the challenges of promoting research, innovation, and economic growth, the role of OAJs in providing equitable access to knowledge and research outputs will become increasingly important. Therefore, policymakers, university administrators, and researchers need to continue supporting and promoting OAJs, ensuring that they remain a vital component of Zambia's research landscape.

1.9 Operational Definitions of Concepts

In this study, the following terms were used to mean the following:

(i) Open Access (OA): unrestricted online access to research articles published in scholarly journals or institutional repositories (Crow, 2008).

(ii) Open Access Journals (OAJs): these are also referred to as “Gold Road open access”. They are journals that provide free access to their articles and the authors pay to publish their works but users access articles without any charges (Kravets, 2016).

(iii) University: institution of higher education, usually comprising a college of arts and sciences, graduate and professional schools having the authority to confer degrees in various fields of study (Ministry of Higher Education Act of 2013).

(iii) Public University: an institution of higher education that is owned by the government and financed out of public funds (Ministry of Higher Education Act of 2013).

1.10 Summary

The chapter provided the background of the study and highlighted how the OA movement with the BOAI emerged at the beginning of the 21st Century with the philosophy to provide free of charge and unhindered access to research and its publications without copyright restrictions and as a powerful enabling tool for educational change and reform. The statement of the problem recognised the need for this study as the other studies failed to analyse among other issues, the current support levels of OAJs in a public university in Zambia. The possible opportunities and challenges presented to public universities by OAJs are equally not known. In addition, the types of licensing models those public universities that have adopted and implemented OAJs use are not known, as there has been no study conducted to find out if all public universities in Zambia have fully embraced OAJs publishing. The significance and limitations of the study have been highlighted in line with the study.

The chapter ends by introducing Technology-Organization-Environment (TOE) which has been widely used in research on technology adoption and implementation of technological innovations and has proven to be a valuable tool for understanding the complex interplay between technology, organization, and environment. This framework was particularly relevant to this study as it provided a comprehensive understanding of the factors influencing the emergence of OAJs in public universities in Zambia and helped explain how OAJ publishing has been adopted and implemented in public universities in Zambia. The next chapter presents the literature review of the study.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

This chapter presents a highlight of relevant literature on OA. The study reviewed various works of literature both local and international. The literature review is in relation to the objectives listed in Chapter One. It covers literature accessed by the researcher including articles, journals, and other published materials as well as unpublished reports.

2.1 Concept of Open Access Journals

Open access journals are digital academic journals that are available online for everyone to browse, read, download, copy, use, and share without any financial, legal, or technical barriers excluding those inseparable from gaining access to the internet itself. Some are subsidized, and some require payment on behalf of the author. Subsidized journals are financed by an academic institution or a government information center, while those requiring payments are typically financed by money made available to researchers for the purpose from a public or private funding agency, as part of a research grant (Suber, 2017).

OAJs are premised on the philosophy of ensuring that scholarly communication is freely accessible to allow the creation of new knowledge. The articles from the selected journals are openly accessible immediately. These journals will not charge subscriptions or access fees. Part of the motivation for authors to make their articles accessible through Open Access journals is a research or citation impact. Examples of Open Access journals include the Thompson-Scientific ranked journals, the Journal of the Medical Library Association, and Information Research (Coleman and Roback, 2005).

2.2 Types of Open Access Journals

There are three types of OAJs, namely Traditional, Hybrid, and Delayed OAJs. Traditional OAJs are established by digital commercial or non-profit publishers for the sole purpose of publishing OA content (Vanderbilt University, 2019). These types of journals are sometimes referred to as bronze or platinum/diamond OAJs. Bronze OAJs are free to read online but do not have a license and are not generally available for reuse.

Similarly, in the Platinum or Diamond model, the authors do not pay any fee to the publishers just as the readers do not pay for accessing the articles. However, publishers under this model have parent organizations or institutions which provide financial support to them. This model is used by academic OAJs. An example of this type of journal is the Zambia Journal of Library and Information Science (ZAJLIS), published by the Department of Library and Information Sciences at the University of Zambia. Platinum or diamond has been described as the best example of the OA model (Bwalya and Akakandelwa, 2021).

Hybrid OAJs is a subscription journal where the publisher allows the authors to pay to make individual articles open access. In hybrid OAJs, some journal articles are made freely accessible to the readers after the authors or sponsors have paid processing and publishing fees to the publishers. This however leaves some articles closed to access as access is upon payment. Examples of Journals that fall under this category include Elsevier Open access and SAGE open access. Though sometimes referred to as the Gold OAJs in which the publisher makes an article fully accessible on the journal website, under a Creative Commons or similar license, the article processing charge (APC) is usually paid by the author, institutions, or research funders (Brooks 2019).

Delayed OAJs are typically traditional or commercial journals that make published articles to be later accessible on OA. These journals normally place an embargo on recently published articles but after a stipulated period, the embargo is lifted thus allowing articles to be accessed freely. The Journal of Molecular Biology of Cells uses this model. The delayed model is similar to the green model of OA which generally self-archives the pre or post-articles in repositories and then published articles are made available on OA by the author. In this regard, the author uploads the article initially published by commercial journals in an institutional repository or subject repository (Bwalya and Akakandelwa, 2021).

According to Allahar and Sookram (2020), OAJ has been defined by Laasko et al. (2011) as one that can be read or downloaded, at no charge; however, this is to some extent misleading because of different degrees of openness. The application of the OAJ model resulted in the creation of several variations. For example, the diamond version of open access is fully free to authors and readers because publication is generally subsidized by universities and societies. However, the dominant OAJ is gold open access which is fully accessible, except that, readers may be required

to pay a fee if not previously met by a university or the author. Hybrid OAJ is essentially subscription print journals that offer authors an open access option for a fee. The other main version is the green OAJ which is also a subscription journal but allows an author to deposit an article in a repository after an embargo period thus delaying immediate access (Burchardt, 2014).

Globally, the distribution of journal publishing was recorded as: gold open access (17%) of which half are diamond; hybrid (49%); green open access (2.4%); and subscription only (31.7%). These results revealed an overall picture of 65.8 % of all journals providing an immediate open access option, while 34.2% are pure subscription journals (Universities UK, 2015). A recent update to these statistics by Universities UK (2017) over the period 2012-2016, showed that hybrid journals lead the distribution profile with 45% of articles, with subscription journals at 37%, and fully-OAJ 18% on a global scale (Allahar and Sookram, 2020).

However, in the dynamic journal publishing arena, the picture is changing significantly. More recent data, derived from an analysis of the publishing models of 40 major publishers for the years 2015 and 2017, revealed that hybrid journals represented 73%, full-OAJ 18%, and subscription journals 9% (Universities UK, 2017). Based on an extensive study of OAJ listed in the Directory of Open Access Journals (DOAJ) database, found that little attention was paid to small open access publishers which left a gap in the research on journal output.

2.3 Open Access Journals and Subscription Based Journals

The discussion between open access journals and subscription-based journals has been ongoing, with proponents on both sides arguing for their preferred model. Open Access Journals (OAJs) and Subscription-Based Journals (SBJs) vary significantly in terms of accessibility, cost, prestige, and impact.

(i) Accessibility

Open access journals make articles freely available online, allowing anyone with internet access to read and download them. In contrast, subscription-based journals require readers to purchase a subscription or pay a fee to access individual articles. This limited accessibility can hinder the dissemination of knowledge, particularly in areas with few resources. OAJs have been shown to increase accessibility to research, particularly for researchers in resource-constrained regions

(Tennant et al., 2016). A study by the Directory of Open Access Journals (DOAJ) found that OAJs have increased the visibility and accessibility of research, with over 13,000 OAJs currently indexed (DOAJ, 2024). In contrast, SBJs restrict access behind paywalls, limiting the dissemination of knowledge (Suber, 2012).

(ii) Cost

Another significant difference is the cost associated with publishing in OA and subscription-based journals. According to Solomon and Björk (2012) OAJs often charge authors an article processing charge (APC) whereas SBJs, on the other hand, do not charge authors a fee, but instead generate revenue through subscriptions and individual article purchases.

(iii) Prestige and Reputation

SBJs have traditionally been considered more prestigious than OAJs, with many top-tier journals still operating under this model (Ware, 2009). However, this perception is changing, with many OAJs now indexed in reputable databases and receiving high impact factors. A study by Suber (2012) found that OAJs are increasingly being recognized as a viable alternative to SBJs, with 67% of respondents considering OAJs to be of equal or higher quality than SBJs. Ultimately, the prestige and reputation of a journal depend on various factors, including its editorial board, peer-review process, and publication quality.

(iv) Impact

OA journals have gained significant traction, with many researchers opting for this model to increase the visibility and accessibility of their work. Research has shown that OAJs can increase citation rates and improve the visibility of research (Eysenbach, 2006). A systematic review of 134 studies found that 64 studies confirmed the existence of an open access citation advantage (OACA), while 37 studies found no significant difference (Langham-Putrow et al., 2021). In contrast, SBJs may limit the dissemination of knowledge, potentially reducing their impact (Suber, 2012).

Ultimately, the choice between OAJs and SBJs depends on the researcher's goals, target audience, and financial constraints.

2.4 Awareness and Usage of Open Access Journals

Many studies have been carried out on the use and awareness of open access journals. Recently, open access journals are the most frequently used sources of valued information for research and teaching purposes (Alshboul, 2016; Okoye and Ejikeme, 2010).

A study undertaken by Kubra (2020), to evaluate the awareness and utilization of open access journals amongst Indian students showed that awareness was high and a large number of students access OAJs to do their research assignments. A study was conducted amongst 44 participants belonging to the Bangalore and Chennai region. Most importantly a large majority of students expressed that it would be beneficial if their teachers helped them with information on how to use open access journals.

Another study conducted by Thenmozhi & Gomathi (2019) was an attempt to observe the awareness and use of open access journals by the Master of Education students in Salem Zone (Salem, Dharmapuri, Krishnagiri, Namakkal). A structured questionnaire was distributed among the Master of Education (M.Ed) Students of various disciplines. The study reveals that the postgraduate (PG) students were aware of open access resources and various types of open access journals that are freely accessible through the Internet. Most of the respondents agreed that open access journals were very much useful and of high quality. Open access resources promote the global knowledge flow for the benefit of the research scholars.

Furthermore, another related study was conducted in South Asia by Sheikh (2019), who analysed the awareness, use, and attitudes of Pakistani faculty members toward scholarly open access. A structured questionnaire was designed to collect respondents' data using an online survey tool, Google Forms. The population of the study was the faculty members of 21 universities and higher education institutions in Islamabad. A sample of 3000 faculty members were invited, through email, to participate in the study; of which 616 completed the survey, with a response ratio of 20.53%. Descriptive statistics and (SPSS) version 21.0 were used for data analysis. The findings of the study reveal that, although the majority of the Pakistani faculty members (71.5%) were aware of scholarly open access before this survey, their awareness level about open access-related resources and initiatives was very low. The Pakistani faculty members used open access venues more frequently to access scholarly content rather than to publish their research works.

However, lack of awareness to publish in open access venues, and publication fees of open access journals were the key challenges faced by the Pakistani faculty members.

A similar study by Shuva and Taisir (2016) attempted to understand Bangladeshi faculty members' awareness, perceptions, and use of open access journals. It also explored the motivational factors that influence the faculty members to choose open access journals for publication. The study reviewed that the faculty members used open access journals more regularly to access scholarly content as well as to publish research works. Further recommended that libraries work as centers for open access publications and help faculty members and researchers choose the right journals for their research.

The study by Wemegah, et al. (2019), which sought to determine the degree of knowledge and use of Open Access Journals (OAJs) by the academic staff of Bolgatanga Polytechnic, employed a descriptive survey design and revealed that all the respondents (100%) are aware of OAJs. The study conclusively showed that the respondents had downloaded and used published materials from OAJs, and had also published their manuscripts in the same. Generally, they believed OAJs could speedily publish their manuscripts, thereby fastening their promotion. A good number of the respondents were of the view that OAJs are reliable platforms that make it possible for them to freely access subject-specific materials that were used in the preparation of their manuscripts and teaching materials. A substantial number of the respondents were also aware of the predatory activities of some OAJs.

Another study conducted by Renwick (2005) on the knowledge and use of open access resources by academics in the medical sciences of the University of the West Indies found that there is a high level of usage of open access resources by faculty in their research and professional growth.

A similar study by Borteye and Dadzie (2015) examined the use of open access journals by graduate students of the University of Ghana. Using the survey method, a questionnaire was distributed to 200 graduate students 5% of the target population of 3,974. The findings of the study showed that the majority of students were aware of open access journals resulting in their high usage. Students indicated that open access journals increase developing countries' access to scholarly literature and promote the advancement of scientific knowledge. Nevertheless, the

attitude of respondents towards open access was not very positive as many challenges were cited as obstacles to their use.

The study conducted by Shirko (2021) aimed to develop a framework for the usage of open access journals and investigated the usage of open access journals by academicians in Ethiopian-selected public higher learning institutions. Wolaita Sodo University and Haramaya University were the selected universities. The questionnaire was used to collect data from academic staff that were randomly selected using stratified simple random sampling from a population of academicians having academic rank above assistant lecturers in the two universities. Also, a semi-structured interview involving respondents among librarians was conducted. Descriptive statistics (frequencies, percentages, mean, and standard deviation) and inferential statistics (t-test, one-way ANOVA, and Ordinary least square model) were used for data analysis. Data were interpreted and discussed with the support of appropriate statistics and the information in the literature review. The findings of this study revealed that the majority of the respondents have an awareness of open access journals and most of them used open access journals to access scholarly information rather than disseminate their research output. The majority of the respondents were informed about open access journals informally through colleagues rather than institutionalized organs such as libraries, especially WSU respondents.

Utulu and Bolarinwa (2009) in their study revealed that the respondents were more aware of the pre-print and open access journal initiatives than the post-print initiative. Irrespective of their level of awareness, the actual use of open access outlets as a medium of publishing and dissemination of research is still not encouraging. In other words, awareness was not matched with actual use either as authors or as readers of scholarly works. Open access journals recorded a higher percentage of use irrespective of the fact that they recorded a lower percentage of awareness among the respondents. A cumulative percentage of the respondents who have used open access journals to publish their papers and those intending to do so were put at 75%.

The use of journals especially open access journals is important in every academic environment for research as it affects the publication output of academics including librarians. The study conducted by Hungwa, Nwachukwu, and Ode (2020) examined the use of open access journals for improved research output by academic librarians in universities in North-Central Nigeria. The paper adopted an ex-post facto research design and a self-constructed questionnaire was

used to collect data. The population of the study was made up of 209 academic librarians in 13 (7 Federal and 6 State-owned) universities in North-Central Nigeria. The data were analysed using mean and standard deviation to answer research questions while Pearson's product-moment correlation coefficient was used to test the hypothesis at a 0.05 level of significance. It was found that the number of open access journals that were in high use by the librarians was slightly lower than those in low use. It was also discovered that academic librarians derived a lot of benefits from the use of open access journals and that, the research output of the academic librarians was higher in conference papers followed by chapters in books and co-authored textbooks, and lastly articles in learned journals.

Another study by (Bwalya, M'kulama, and Mwalimu 2019) on the perception of lecturers and researchers at the University of Zambia (UNZA) towards OAJs aimed at measuring their perceptions. The findings showed that the majority (97%) of the lecturers and researchers at UNZA were aware of the existence of OAJs. Further, the research revealed that many (87%) lecturers have a positive attitude towards OAJs, and 72% use OAJs in their research activities. However, it was discovered that few lecturers and researchers (21%) publish their works in OAJs. The low percentage of lecturers publishing in OAJs was partly due to UNZA management's negative attitude towards OAJs. Until recently, UNZA management never used to recognize articles published in OAJs during the promotion of lecturers and researchers. The fact that few lecturers and researchers published in OAJs affected the overall perception.

A study by Chewe, et al (2021) on open access scholarly communication practices at the University of Zambia, showed that though all (67) of the respondents were aware of open access and were upbeat about this new form of scholarly communication, 79.1% had used OA platforms more to access scholarly content than to disseminate their research output while 21.9% used open access publishing models to disseminate their research output.

However, there are some studies showing reluctance in the use of OAJs and these studies include among others those conducted by (Christian, 2009; Kim, 2007 and Nwagwu, 2013) found a very low level of usage prevailing in higher educational institutions and research institutes, organizations and governments agencies. According to (Dinev, Hu, & Goo 2005), awareness is a prerequisite to subsequent usage of open access publications unless an individual uses them unknowingly.

Furthermore, in another related study conducted in Nigeria (Christian, 2009) the findings reveal that while only 3% of 66 respondents at the University of Lagos were aware of the concept of open access journals, 22.7% knew very little about it and the majority 74% of the respondents were completely unaware of it.

Similarly, a study by (Dulle, et al. 2010) found that even though respondents claimed to have used open access publication media to access scholarly works, but actually, fewer Tanzanian researchers disseminated their findings through open access channels than those who accessed it. Further, the institutions of higher learning were not equally enthusiastic about establishing and use of AOJs. Though publicity was being given to OA resources, still many pockets lacked total awareness regarding exploiting maximum benefit from them.

In highlighting the usage of open access resources (Ogbomo & Ivwighreghweta, 2013) reported that several studies indicated that open access is an unknown concept to many researchers. In a study conducted by (Gbaje, 2010) at Ahmadu Bello University, the findings revealed that sixteen representing 76% of the respondents who were editors in chief of the journals published in the university indicated that they were not aware of Open access journals.

In Nigeria, studies such as those of Ureighe, Oroke & Ekruyota, (2006) found that access to and use of open access resources is still low, the factors that may be accountable for the low use may be the awareness and attitude of researchers. Most researchers are still reluctant to use OAJs; one of the major reasons for this is that they are not aware of what is available to them and what the services are capable of doing.

Lubasi, et al (2018), further stressed that there was currently a significant amount of locally relevant research conducted at the University of Zambia, which has a total of seven official journals and three associated with postgraduate students however, most of the research output was published in print-based media, making it difficult for the output to be easily available to a much wider audience.

According to Obuh and Bozimo (2012), “Awareness raises consciousness and knowledge about a certain technology and its personal and social benefits.” This view was supported by the study conducted by (Dinev, et al., 2005), which established awareness as the central determinant of user attitude and behavior towards technology. In the open access environment, awareness has

also been acknowledged as an important factor in determining the usage of this mode of scholarly communication.

2.5 Support Levels of Open Access Journals Publishing

The growth of OAJs relies heavily on support from various stakeholders, including institutions, governments, and international organizations. Despite the increasing popularity, there has been a lack of understanding of open access publishing which is becoming a hindrance to the effective advancement of open access journals.

A study by Vogel (2011), the European Union-sponsored Study of Open Access Publishing, surveyed 50,000 researchers for their opinions on open-access journals, which make all their papers freely available online and usually charge authors a fee for each published paper. The study found overwhelming support for the concept, with 89% saying that open access is beneficial to their field.

Nazim and Zia (2019) examined the level of OAJs acceptance by researchers in the Indian Institutes of Technology (IITs). From the findings of the study, it may be concluded that the trend of OA availability in scientific research in India was increasing. Researchers in India eagerly publish their work in OA journals. Despite the lack of resources, the percentage of OA articles in India has relatively increased. Around 6 percent of the total research outcome of IITs was published in OA journals. Despite this development, the study findings indicated that there was a lack of awareness of OA policies of publishers among researchers in India.

A similar study by Park (2007) identified one demographic factor out of the eleven that significantly influenced the intention of open access journal publishing. The social influence and perceived topical compatibility factors appeared to be insignificant for the support. Prior experience with and knowledge of open access publishing was a significant factor in motivating scientists to support open access publishing in general.

An empirical study by Gladys and Ibrahim (2015) examined the support for the OA initiative for teaching and research at Ahmadu Bello University Zaria. The study revealed that lecturers are familiar with the OA initiative which comprises the OA institutional repositories and OA journals.

A study conducted by Utulu, and Bolarinwa, (2009) on open access initiatives by Nigerian academics shows that academics in sciences showed more promise of supporting open access initiatives as authors and readers of scholarly resources than their counterparts in the humanities. Considering the revelation in this study, open access support either as authors or readers still suffers major setbacks among Nigerian academics. The use of open access journals more than pre-/post-prints may be connected with their acceptance and value as formal scholarly dissemination outlets. Institutions in Nigeria are beginning to accept publications in open access journals for rewards and as scholarly contributions to the formal web of knowledge. This strongly points to the fact that with time open access journals use may become popular among Nigerian academics.

According to Tandi and Questier (2014), while investigating faculty support and usage behaviour of open access scholarly communication in Tanzanian health science universities, the study indicates that the health sciences faculties are positive about supporting and using open access. Tanzanian faculty members who publish in OA journals are primarily motivated by perceived extrinsic OA benefits from a user perspective i.e. professional recognition, behavioural intention to use OA, and facilitating conditions such as availability of reliable infrastructure and technical assistance. In the support of open access, the faculty's attitude toward open access was the best predictor. Other factors that motivated faculty to support OAJs include extrinsic benefits such as academic reward, accessibility and preservation, and contextual factors i.e. attitude, and open access culture. The study findings also further demonstrated that open access culture was common across all faculty members' disciplines; however, there were differences among the surveyed institutions, which may greatly influence the adoption of open access in the future.

A study by Chilimo et al (2017) points out that while researchers in Kenyan public universities have embraced OAJs, challenges such as a lack of mechanisms to guide academic researchers on where to publish, a dearth of funding mechanisms to cover article processing charges, and a lack of accreditation mechanisms for regional and national journals are exposing Kenyan academic researchers to unscrupulous journal publishers and predatory publishing outlets. OA advocates in Kenyan universities need to devise innovative ways of raising awareness about OA, and these universities should provide the environment, infrastructure, and capacity building needed to support OAJs.

The study by Lubasi, et al (2018) pointed out that, the majority of the University of Zambia teaching staff are familiar with OAJ publishing and are advocates, despite these facts there is still little locally generated research visible online. This is a result of many factors which are: a lack of proper legal framework on issues of copyright, and a lack of information and communication technology infrastructure at the University of Zambia. A percentage of the respondents don't consider publishing research outputs online to be easy, this may be because of a lack of "how-to" knowledge and another percentage of the respondents don't consider that the visibility of the research output being online is an easy way of accessing them.

Chewe, et al (2021) revealed that though all 67 respondents at the University of Zambia were aware of open access and were positive towards this new form of scholarly communication, misapprehension about open access and lack of digital skills were the major barriers to open access.

However, despite some studies showing a positive attitude and support toward open-access avenues, some studies still show reluctance towards this noble cause. An article by Allahar, Haven, Sookram, and Ron, (2020) assessed the characteristics of the OAJs system through a review of the literature; and assessed the extent of support of open access by researchers in the management discipline through a review of the management publications by the University of the West Indies (UWI) researchers. A sequential exploratory strategy of two phases was used. The first phase focused on the collection of secondary data on journal publishing and the second involved reviewing the publishing record of the UWI with particular reference to management research. The main finding is that OAJs were not fully embraced as a publishing outlet because of academic resistance derived from questions of acceptability, and the existence of a system that assigns greater recognition to the established subscription journals.

While researchers generally support the concept of open access, several surveys conducted among faculty members in Europe and around the world have revealed that relatively few articles are being published in open access journals and that there is a lack of understanding regarding the process. A study conducted by Narayan and Luca (2017) investigated issues and challenges faced by a university library in encouraging academics and researchers to adopt open access. The study revealed that whilst librarians have been advocates of open access publishing, researchers' understanding of it is still limited as they have other pressures regarding their

publishing outputs, which also limits their support levels for open access practices. The results further informed the library's strategies to promote scholarly communication literacy in OA practices.

According to a study conducted in Tanzania by Dulle, Minish-Majanja, and Cloete, (2010) observed that scholarly communication, through open access journals and self-archiving, are the two main approaches of open access publishing, however, this mode of scholarly communication was not widely utilised in developing countries such as Tanzania. It was evident from the findings that the researchers' Internet usage skills and self-efficacy, social influence, performance expectancy, effort expectancy, and the respondents' general perceptions about open access were identified as the positive factors likely to facilitate open access support in Tanzanian public universities. The support levels of OAJs are crucial for their growth and sustainability. Institutional, government and international support are essential for promoting OA publishing and addressing challenges.

2.6 Open Source Journal Publishing Systems

The growth of Open Access publishing since the 1990s has been matched by an increase in Open source journal publishing systems (OSJPS). These systems are free, customizable, and transparent software platforms that enable scholarly journal publication. Developed and maintained by communities they offer cost-effective solutions, flexibility, and support, making them an attractive alternative to proprietary options. (Willinsky, 2005).

2.6.1 Types of Open Source Journal Publishing Systems

The types of open source journal publishing systems include options like Open Journal Systems (OJS), Janeway, EJournalPress, and Lodel among others. In contrast, commercial systems like ScholarOne, Editorial Manager, and Aries Systems offer proprietary solutions, catering to major publishers such as Wiley, Taylor & Francis, Elsevier, and Springer Nature, with features including manuscript submission and peer review management.

2.6.1.1 Open Journal Systems

Open Journal Systems (OJS) was originally developed as part of the research program of the Public Knowledge Project (PKP). PKP had its origins during the mid-1990s in research efforts to design and create knowledge management systems that would increase the contribution that

educational research made to the lives and work of teachers, administrators, policymakers, and the public. In a series of projects, PKP represented an early effort to take advantage of the initial, heady days of the internet, when this brave new world wide web promised to open the doors to all of the knowledge that had been previously available only in research libraries. OJS is an open source solution to managing and publishing scholarly journals online, which can reduce publishing costs compared to print and other traditional publishing processes. It is a highly flexible editor-operated journal management and publishing system that can be downloaded for free and installed on a local web server. OJS has been designed to reduce the time and energy devoted to the clerical and managerial tasks associated with editing a journal while improving the record keeping and efficiency of editorial processes. It seeks to improve the scholarly and public quality of journal publishing through several innovations, from making journal policies more transparent to improving indexing. OJS is more than just a publishing system, as it also manages the entire editorial and production workflow, from manuscript submission to publishing. This includes supporting editorial decisions, managing peer review, and integrating production tasks, making it a comprehensive platform for journal management (Willinsky, 2018).

2.6.1.2 Janeway

Janeway is an open-source, scholarly journal publishing platform developed by the Open Library of Humanities (OLH), designed for academic journals, university presses, and scholarly societies, particularly in the humanities and social sciences. According to Barker (2020), The system was primarily created to host OLH journals, but was also created with open design principles in mind, so that developers, publishers, and the OA community would be encouraged to comment on, make feature suggestions for, or contribute to the codebase. It offers key features such as journal management, content hosting, online publishing, customization, and multilingual support, enabling journals to manage workflows, host content, publish online, and customize their website. Janeway's benefits include being community-driven, open-source, flexible, scalable, and sustainable, ensuring it meets the needs of academic journals and reducing reliance on commercial vendors. Overall, Janeway offers a robust, customizable, and community-driven journal publishing platform that meets the needs of academic journals and scholarly societies. (Eve and Byers 2018).

2.6.1.3 Journal Press

According to Samuels and Griffy (2012), EJournal Press is an open-source journal publishing system that offers a range of features, including manuscript submission and peer review management. It is a comprehensive online manuscript submission and peer review system designed for scholarly journals, particularly in the scientific, technical, medical, and engineering fields. EJP offers key features such as manuscript submission, peer review management, editorial workflow, production tracking, and customization options. By automating tasks and providing a clear audit trail, EJP increases efficiency, transparency, and collaboration, while also scaling to handle large volumes of manuscripts and users. Additionally, EJP integrates with other publishing systems, making it suitable for academic journals, university presses, and scholarly societies to manage manuscript submissions and peer review.

2.6.1.4 Lodel

Lodel is a French OA journal publishing system used primarily by OpenEdition, a Francophone site that hosts several books, journals, and other documents (OpenEdition 2016). Although the most recent major version of Lodel (1.0) was released in March of 2014, minor versions have been released since, with regular commits and closed pull requests on the project's GitHub page. The software can be installed in English, French, and several other languages (Riviere 2014).

2.7 Publishing Licencing Models

In every country that has signed the Berne Convention (World Intellectual Property Organization (WIPO), 1995) author copyright is automatic, extends 50 years after the life of the author, and involves a bundle of rights, including both moral and economic rights. Under Berne, moral rights are not transferred even when authors transfer all economic rights. It is therefore important for open access publishers to clarify user rights. Although copyright is vested in the author, an author can grant all the rights that a publisher requires through licencing (World Intellectual Property Organisation, 1995).

According to Creative Commons (2013), copyright transfer is not necessary. A license to publish can be implicit or explicit. An implicit licence means even without a contract, when an author has submitted an article for publication and subsequently sent revised drafts after peer review,

approved copyedited drafts, the author has implicitly granted a right to publish. However, a simple explicit clarifying how rights are shared between the author and the publisher is good practice to avoid potential confusion.

The concept of OAP is based on legally open licenses, a form of copyright permission in which the author(s) retains copyright and specifies permitted uses; in this way, a publisher can still publish the work without owning the copyright. In this vein, the most widely used licenses are Creative Commons Licences, all of which require author attribution (Arinto, et al, 2017). Open licenses are, in fact, more aligned with academic freedom and agency than traditional copyright agreements because authors keep their copyright and determine licenses for use on their terms; under conventional agreements, researchers invariably sign away their copyright to publishers.

In OAJs, a Creative Common Licence is used. A Creative Commons licence is a license issued by the copyright owner to allow anyone in the world to use his or her copyright work in any manner consistent with that licence. Creative Commons Licences are essentially standard form licence agreements that can be attached to a work to enable its use under certain circumstances without the need to contact the author or negotiate terms of use. Creative Commons licence provides an easy way to manage the copyright terms that attach automatically to all creative material under copyright. CC licence allows the material to be shared and reused under terms that are flexible and legally sound (Creative Commons, 2013).

Margoni and Peters, 2016), assert that CC licences play an important role in facilitating open access publishing. They provide a legal framework for giving users the ability to freely view, download, and distribute content. CC offers a core suite of six copyright licenses, since there is no single “Creative Commons licence,” it is important to identify which of the six licenses has been applied to material that one intends to use, and in both cases the specific version.

2.7.1 Types of Creative Commons Licences

Creative Commons (2013), describes the six different types of Creative Commons licences as follows;

(i) Creative Commons Attribution Licence

The Creative Commons Attribution Licence which is abbreviated as CC-BY is type of licence that allows others to copy and redistribute the material in any medium or format and remix, transform, and build upon the material for any purpose, even commercially as long as credit must be provided to the original owner. This is often the preferred choice for journal articles, particularly in science, technology, and medicine, as it allows other researchers to make full use of the findings in their work. A good example is the Zambia Journal of Library and Information Science (ZAJLIS), published by the Department of Library and Information Sciences which uses CC BY and guarantees people (readers) and organisations unlimited rights to share, use, and build upon works published in journals and all they need to do is to acknowledge the source (author). Also, Oxford Journals, the American Institute of Physics Journal, the International Journal of Librarianship (IJOL), and the Pan African Medical Journal published by The Pan African Medical Journal in Kenya use this type of license. It is also the license that is required for journal articles by some funders, including coalitions. This is the most accommodating of licenses offered and is also recommended for maximum dissemination and use of licensed materials.

(ii) Creative Commons Attribution Share-Alike Licence

This type of licence allows others to copy and redistribute the material in any medium or format and remix, transform, and build upon the material for any purpose, even commercially, as long the author is acknowledged and provided it is distributed under the same license as the original. This license is often compared to “copyleft” free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia, the African Journal of Library, Archives and Information Sciences, and the South Africa Journal of Libraries and Information Science. This license is also used by some of the University of Zambia journals such as the Journal of Law and Social Sciences, Zambian Journal of Education, and Zambia Law Journal. This licence is permitted by some funders as an alternative to CC-BY.

(iii) Creative Commons No-Derivatives License

The Creative Commons No-Derivatives Licence is known as the CCBY-ND. This type of licence allows others to copy and redistribute the material in any medium or format. This licence also lets others reuse the work for any purpose, including commercially; however, it cannot be shared with others in adapted form. If remixed, transformed, or built upon, the material with these modifications cannot be distributed, and credit must be provided for the owner. This licence is also permitted by some funders as an alternative to CC-BY.

(iv) Creative Commons Non-Commercial License

Creative Commons Non-Commercial (CC-BY-NC) licence allows others to copy and redistribute the material in any medium or format. However, the material may not be used for commercial purposes, though new works must also acknowledge the owner, and they don't have to licence their derivative works on the same terms. This can be an appropriate licence for monographs because it protects print copy sales while still providing scope for users to create derivative works of the online version to the benefit of all academia. A good example of an online journal that uses this licence is the Journal of Technology Management and Innovation.

(v) Creative Commons Non-Commercial Share-alike

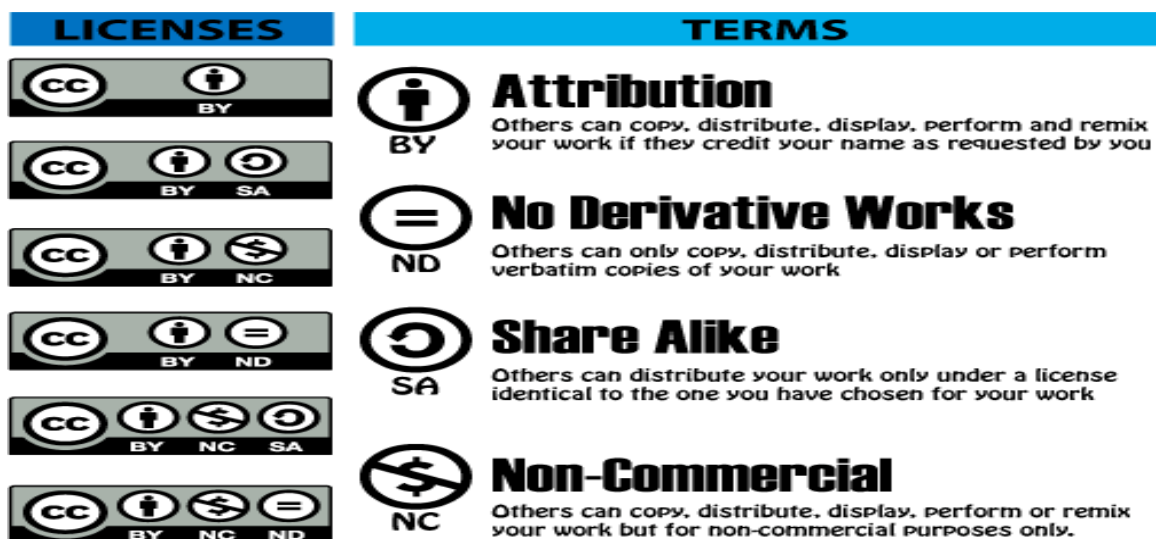
Commons Non-Commercial Share-alike (CC-BY-NC-SA) is the licence that allows others to copy and redistribute the material in any medium or format, remix, transform and build upon the material for any non-commercial purpose, as long as they credit you but the material may not be used for any commercial purpose. If the material is remixed, transformed, or built upon, it must be distributed under the same licence as the original. While the Share-alike license might sometimes encourage further uptake of OA by authors wanting to re-use the content, it can also create an unnecessary barrier to the re-use of the OA content.

(vi) Creative Commons Non-Commercial No-Derivatives

This type of licence allows others to copy and redistribute the material in any medium or format. However, the material may not be used for commercial purposes and if you remix, transform, or build upon the material these modifications cannot be distributed. The license is particularly appropriate for books and other products where significant revenue is needed from derivative

rights sales (for example, translation rights), to keep author charges low. This license is the most restrictive of the six main licenses, only allowing others to download the works and share them with others as long as the author is credited, but one can't change anything in any way or use them commercially. A good example of the journals that use this type of licence is the Malawi Medical Journal, published by the University of Malawi, College of Medicine and the African Journal of Food, Agricultural, Nutrition and Development published by African Scholarly Science Communication Trust in Kenya.

Figure 2: Types of Creative Commons licences



Source :<https://www.studiobinder.com/blog/creative-commons-license/>

Carroll (2013) asserts that all Creative Commons licences require that users who republish or reuse a work in a way that would otherwise infringe copyright give attribution as directed by the copyright owner. That's the only condition included in the Creative Commons Attribution licence and the only CC licence meeting the definition of "open access" endorsed by the Budapest, Bethesda, and Berlin declarations. This type of licence is used by leading open-access publishers such as PLOS and BioMed Central, recommended by the Open Access Scholarly Publishers Association, and adopted by the World Bank for its internally published research. Commercial science publishers that have launched publications funded by article-processing charges also use CC licenses, but they either use a more restrictive licence or offer authors choices. The Nature

Publishing Group's Scientific Reports, for example, allows authors to choose from three CC licenses, including the Attribution licence.

Other adopters of CC licences impose additional conditions on users. Two of these conditions, called ShareAlike and NoDerivatives, concern adaptations of the licenced work. The Wikipedia community, for example, has adopted the CC Attribution ShareAlike licence, which requires both attributions and that any adaptations be licensed under the same licence. For Example, MIT OpenCourseWare, from the Massachusetts Institute of Technology, adopted the licence with the Attribution and ShareAlike conditions but added a NonCommercial condition, prohibiting commercial uses. Though options offered by CC licences address the needs of copyright owners in various contexts, in the open-access context, the Attribution licence in my opinion remains the gold standard (Hrynaszkiewicz, et al., 2012).

Copyright law supplies the baseline terms of use for almost all information on the Internet. These terms can be altered if the copyright owner grants a licence or permission to do something that would otherwise infringe copyright. Traditionally, copyright owners granted licences to specific persons or entities. More recently, copyright owners seeking to grant permission to everyone have issued public licences broadening the range of permitted uses, subject to certain conditions. Creative Commons licences are the most widely used of these public licences for all kinds of copyrighted works except software, for which free and open-source licences are most common (Carroll, 2013).

In addition, the CC licences are useful for OAJs, but may not be optimal. For this reason, it is recommendable that authors and journals continue to explore new approaches to licencing. Here is one alternative approach, inspired by the following text: The content of the book may be reproduced without the authors' permission in part or its entirety provided it is distributed and made available to the reader for free, without service charges or any other fee. The authors further stipulate that the editors, individual writers, and visual artists all be credited for their work (Sakolsky and Van der Zon, 2010).

2.8 Benefits of Open Access Journals

Open access plays a significant role in expanding access by enabling scholars more equitable participation in research and development activities globally. As an innovative way to

disseminate scholarly information, open access journals (OAJs) offer many benefits that would have been impossible in traditional scholarly journals. Most students in higher education have some experience with open access journals. They appreciate the free access to scholarly publications available throughout the World Wide Web, found by using a popular search engine like Google. Most journals do not impose access costs on the reader. Thus price barriers are substantially lowered or removed entirely. Authors are thus granted the ability to address a wider audience without the corresponding expenditure. The reach of the articles or materials increases tremendously since readers can retrieve them regardless of their economic status or geographical location (Gargouri, et al 2010).

Open access journals have offered many benefits to all groups of people. Suber (2015) spelled out the benefits presented by open access journals to various stakeholders: Open access journals give a worldwide audience for authors, larger than that of any subscription-based journals, no matter how prestigious or popular, and probably increase the visibility and impact of their work; Open access journals give barrier-free access to users that the literature needed for their research, not constrained by the budgets of the libraries where they may have access privileges; It increases their convenience, reach and retrieval power.

Okoye and Ejikeme (2010) identified the benefits of using open access journals including the following; It provides an increased citation to published scholarly work, Publications are made free for authors, It increases the impact of researchers' work and articles can be accessed online free of charge. Furthermore, asserts that OAJs provide free and easy online access to the literature necessary for one's research, OAJs help in career development, and provide high-quality scholarly work.

According to Ivwighreghweta and Onoriode, (2012), the advantage of open access journals is that the entire content is available to users everywhere regardless of affiliation with a subscribing library; open access articles can be read by anyone, including professionals, researchers in different fields, media practitioners, politicians also civil servants. Open access journals provide free online access to the literature necessary for one's research; articles can be accessed online free of charge, OAJs provide an increased citation to published scholarly work, and it increases the impact of researchers' work and provides high-quality scholarly work.

For Librarians open access journals solve the pricing crisis (serial crisis) and solve the permission crisis for scholarly journals; Open access is not only removing access barriers but also open access should be immediate, rather than delayed and should apply to full texts, not just abstracts or summaries (Okoye and Ejikeme, 2010; Jain, 2012). For Universities open access journals increase the visibility of their faculty and institution, reduce their expenses for journals, and advance their mission to share knowledge; Open access reduces Universities' journal expenses and advances their mission to share knowledge (Jain, 2012; Suber, 2015).

Mammo and Ngulube, (2015) affirm that the benefit of open access journals to academicians in higher learning institutions is enormous. Open access journals provide the potential to foster partnerships and strengthen scientific cooperation among academic staff. OAJ reduces publication delay and provides an increased citation to published scholarly work. The world of literature is ever increasingly accessible via the Internet.

Overall, the benefits of open access as viewed by Herb, (2010) among others include; promoting research discovery and providing an impetus for scholarship; documenting social benefits; improving education and access to the most current research which facilitates wider learning; reducing production costs; reducing entry barriers; and stimulating competition in publishing. Further, concerning the theory of knowledge as a public good, OAJs are seen as supporting democracy-based notions by facilitating greater public participation; and socio-political impacts by levelling the publishing playing field by reducing information poverty (Ibid).

Several studies have been carried out on OAJ, which highlight the benefits of free access to information, increased research impact (measured by citations/downloads) of open access articles versus non-open articles, and also possible solutions to the so-called “serial crisis” or “journal affordability problem”. Open access journals, in particular, offer access to a wide variety of useful information at no cost. In addition, they provide avenues for publishing that are available to all levels of training and practice. Whereas costs are less with the publishing of online open access journals, fewer resources for funding and technical support also exist.

2.9 Challenges Open Access Journals Face

Despite the apparent benefits and opportunities AOJs present and the recent growth in support for the practice, significant barriers to its widespread adoption remain. According to a study by

Kumar and Reddy (2014) on the Use of E-Journals by Research Scholars in University Libraries in Andhra Pradesh found that the major problems faced by respondents were: slow Internet connectivity, lack of familiarity in searching e-journals, inadequate information on interesting subjects, and no facility to get a print copy for a downloaded article.

A study by Dulle and Minishi-Majanja (2009) revealed that most respondents identified a lack of adequate skills for open access publishing as a major contributing factor militating against them. The results of research conducted by Msagati (2014) on Awareness and Use of Scholarly Electronic Journals by Members of Academic Staff found that lack of awareness and limited searching skills were the main factors that were militating against the effective use of scholarly published open access journals.

A study conducted by Dulle (2008) on Open Access Publishing and the emerging opportunity for wider dissemination of scholarly output identified the basic factors that affect the usage of open access journals. The study identified, slow internet connectivity and inadequate Internet search skills as a factor that affects the usage of open access journals by most respondents. A study also identified factors that hinder researchers in disseminating their research output through open access avenues. Results from this investigation revealed that close to three-quarters of respondents answered that they were not familiar with open access publishing and the others raised that lack of skills to publish online, slow internet connectivity, publication charges by some publishers, and lack of appropriate sites to publish in open access.

The result of research conducted by Singson et al. (2015) on Perceptions of Open Access Publishing by Faculty at Pondicherry University found that the majority of the respondents showed a negative perception of open access publishing. As the study indicated, the majority of the authors said open access journals lack quality, lack of reliability, lack of standards, lack of awareness, lack of incentives as the majority of these institutions, which are the major employers of scholars in the region, do not provide incentives to scholars to publish in scholarly journals.

In developing countries, internet and information and communication technologies (ICTs) due to the high cost of the availability of ICTs and connectivity and poor telecommunication infrastructure, inadequate funding to build, upgrade, and maintain ICT infrastructure, lack of

awareness and misconception of the existence and benefits of open access publishing, are identified as a barrier to open access (Jain, 2012; Getaneh, 2009).

Similarly, Attanasio (2018) affirms that although Africa has recorded tremendous growth in the ICT infrastructure in the past two to three decades, particularly concerning the levels of cellphone coverage and wireless availability, many parts of Sub-Saharan Africa still lack ICT infrastructure. Internet access is one of the most recurrent hindrances for scientific research in Africa and remains very low in some regions and Internet penetration remains low across the continent. Where ICT infrastructure has been developed, in most cases this infrastructure is bedevilled with poor connectivity and inadequate bandwidth. In addition, Dulle, (2010); Jain, (2012) assert that developing countries are still struggling to achieve wide access to high-speed broadband services. This creates a digital divide between the developing and developed world.

Also, the result of research conducted by Ivwighreghweta and Oyeniran (2013) on the Usage and Awareness of e-resources by Lecturers in two selected Nigerian Universities was aimed at finding the Purpose of Using e-resources and factors that hinder the use of electronic resources established that the majority of the respondents indicated slow internet services, followed by erratic power supply as a basic factor.

Another challenge cited includes the cost of OAJs publishing although a majority of OAJs do not charge article processing charges (Kozak and Hartley, 2013), a significant and growing number of them do (Laakso and Björk, 2012). Article processing charges (APC) are the most common funding method for professionally published OAJs. Unfortunately, many OAJs charge an article publication charge which can cost up to thousands of dollars, thus creating another financial burden on poorly funded Sub-Saharan African researchers. There has also been a proliferation of 'predatory journals' that do not offer an acceptable level of peer review or publication quality and prey on authors from Lower and Middle Income Countries (LMICs) by charging lower article processing charges (APCs) (Tempest, 2017).

A study conducted in Tanzania by Dulle, Minish-Majanja, and Cloete, (2010) discussed the factors that influence the adoption of open access for scholarly communication in Tanzanian public universities. The study highlighted among others the current poor research conditions and

researchers' low Internet self-efficacy such as inadequate information search skills as the main hindrances for researchers to use open access outlets to access scholarly content.

Various factors have been established as motivating or inhibiting factors concerning the adoption of open access. Attitude, self-efficacy, facilitating conditions, social influence, performance expectancy, and effort expectancy are the most acknowledged factors considered to play a key role in shaping individuals' acceptance and usage of technology Venkatesh et al, 2003

Most critiques on open access publishing (OAP) have been about the sub-standard quality of the manuscripts being published. The question is what pushes the editors to proceed with a low-quality manuscript? There are two major incentives. First, journals need to publish issues at specified intervals to sustain themselves. Thus, if the predominance of the manuscripts is substandard, the editors are likely to publish some of those to maintain their publication (Frank, 2013). However, despite all these challenges and obstacles developing countries are still confronted with, there are positive indications for open access initiatives.

2.10 Summary

In summary, the literature review highlighted the concept of OAJs as digital academic journals available online without financial, legal, or technical barriers. The three types of OAJs: Traditional, Hybrid, and Delayed OAJs were also reviewed. In comparison OAJs offer free online access to articles, faster publication times, and broader reuse rights, while SBJs restrict access behind paywalls, generating revenue through subscriptions and individual article purchases. Although SBJs have traditionally been considered more prestigious, OAJs are gaining recognition, with many now indexed in reputable databases and receiving high impact factors. Ultimately, the choice between OAJs and SBJs depends on the researcher's goals, target audience, and financial constraints, with OAJs offering increased accessibility and SBJs maintaining their prestige and reputation.

Studies on awareness and usage of OAJs showed varying levels among academics and students, with factors such as awareness, attitude, and institutional support influencing usage. Overall, the review suggests that while OAJs have the potential to promote scholarly communication and knowledge sharing, there is still a need to raise awareness and address challenges to their acceptance. The growth of OAJs relies heavily on support from stakeholders, including

institutions, governments, and international organizations. Studies have shown that researchers generally support OAJs, with 89% considering them beneficial to their field. However, challenges such as lack of awareness, funding, and infrastructure hinder OAJs.

Open source journal publishing systems, such as Open Journal System (OJS), Janeway, EJournalPress, and Lodel, offer free, customizable, and transparent platforms for scholarly journal publication. These systems provide features such as manuscript submission, peer review management, and editorial workflow, making them attractive alternatives to proprietary options. Overall, the support levels of OAJs and the adoption of open source journal publishing systems are crucial for promoting OA publishing and addressing challenges.

The concept of publishing licensing models is crucial in OAJs, as it clarifies user rights and ensures that authors retain copyright while specifying permitted uses. Creative Commons (CC) licenses are widely used, with six types of licenses offering varying levels of permission, including attribution, share-alike, non-commercial, and no-derivatives.

The benefits of OAJs are numerous, including increased citation, visibility, and impact of researchers' work, as well as providing free and easy online access to literature necessary for research. OAJs also solve the pricing crisis and permission crisis for scholarly journals, increase the visibility of universities and institutions, and provide high-quality scholarly work. Overall, OAJs promote research discovery, improve education, reduce production costs, and stimulate competition in publishing, while supporting democracy-based notions and socio-political impacts.

Open Access Journals face numerous challenges, including slow internet connectivity, lack of familiarity with searching e-journals, inadequate information on interesting subjects, and limited printing facilities. Additionally, researchers in developing countries face barriers such as high costs of ICTs and connectivity, poor telecommunication infrastructure, inadequate funding, lack of awareness, and misconceptions about open access publishing. Other challenges include the cost of OAJs publishing, article processing charges, and the proliferation of 'predatory journals' that prey on authors from Lower and Middle Income Countries. Furthermore, researchers' low internet self-efficacy, inadequate information search skills, and poor research conditions hinder the adoption of open access for scholarly communication. Despite these challenges, there are

positive indications for open access initiatives, and efforts are being made to address these obstacles and promote open access publishing.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This chapter discussed the methods and techniques that were employed in the study. These include; a description of the research design, the research philosophy, approach, target population, sample size, sampling procedures, and research instruments. The chapter also described the data collection procedures and how the data was analysed to answer the research questions. Further, the chapter cited ethical issues before ending with a summary.

3.1 Research Philosophy

This study was grounded on an interpretive research philosophy, which emphasizes understanding the subjective meanings and experiences of individuals within their social context. Interpretivist philosophy asserts that reality is socially constructed, and knowledge is created through interactions and experiences (Saunders et al., 2012). By employing an interpretivism approach, this study explored the experiences and perceptions of key informants involved in OAJ publishing in public universities in Zambia. The interpretivism philosophy informs a qualitative research approach, which seeks to gather in-depth insights into the benefits, opportunities, and challenges associated with establishing open access journal publishing in public universities in Zambia. Overall, an interpretivism philosophy provided a suitable framework for the study research design, as it aligned with the exploratory and qualitative nature of the study, and focused on understanding and interpreting the perspectives and experiences of the OAJ key informants.

3.2 Research Approach

This study employed a qualitative research approach to explore the emergence of open access journals in public universities in Zambia and uncover the current support levels, types of systems, and publishing licensing models in use. This approach enabled the capturing of views and perspectives on OAJs, allowing for conclusions to be drawn based on respondents' understanding. The qualitative approach was also used to describe variables rather than test predicted relationships between variables. The rationale for this research approach was to gain a deep understanding of the experiences with OAJs, which is not possible with a quantitative approach.

3.3 Research Design

A research design serves as a blueprint for conducting a study, providing a framework for addressing the central research questions. According to Burns & Grove (2003), a research design is a plan for conducting a study with maximum control over factors that may interfere with the validity of the findings. Similarly, Sileyew (2019) defines a research design as a framework of methods and techniques chosen by a researcher to combine various components of research in a reasonably logical manner.

This study employed an exploratory research design, utilizing qualitative approaches to research. According to Tobi (2018), exploratory designs are often used to establish an understanding of how best to proceed in studying an issue or what methodology would effectively apply to gathering information about the issue. This research adopted an exploratory approach due to the limited knowledge and studies available on the topic in Zambia.

Exploratory research design is ideal for investigating new or understudied areas (Zainal, 2007). This approach allows researchers to gain insight into a phenomenon, laying the groundwork for future studies. Given the limited knowledge about open access journals in public universities in Zambia, an exploratory research design was deemed suitable for this study.

3.4 Study Population

A study population is the larger group from which a given sample is selected. Neuman (2014), states that a population is the abstract idea of a large group of various cases from which a researcher draws a sample and to which results from a sample are generalized. According to the Higher Education Authority, there are 9 registered public universities in Zambia (HEA, 2021). However, three (3) public universities were found to run OAJs, and a total of 17 OAJs were being run by these three public universities. Therefore, the study population constituted 17 OAJs from three public universities.

3.5 Sample Size and Sampling Procedure

According to Gay et al, (2009), a sample is a group of subjects selected from a larger population. Sampling is a process by which a researcher gathers people, artifacts, or places for study. It is a process of selecting a small number of individuals for a study in such a way that the individual

chosen will be a good key informant who will contribute to the researcher's understanding of a given phenomenon. The study employed a complete census approach in which all (17) OAJs from 9 public universities in Zambia took part in the study. Purposive sampling method was used in selecting the key informants to be interviewed. For each OAJ, the managing editors and editors were selected to take part in the study. Therefore, a total of 14 managing editors or editors were selected to take part in the study.

Purposive selection denotes the method of selecting several groups of units in such a way that selected groups together yield as nearly as possible the same average or proportion as the totality of those characteristics which are already a matter of statistical knowledge. According to Rai and Thapa (2015), purposive sampling represents a group of different non-probability sampling techniques. Also known as judgmental, selective, or subjective sampling, purposive sampling relies on the judgment of the researcher when it comes to selecting the units (e.g., people, cases/organisations, events, and pieces of data) that are to be studied.

The purposive sampling technique is the deliberate choice of a participant due to the qualities the participant possesses. It is a nonrandom technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by knowledge or experience (Etikan, Musa, and Alkassim, 2016).

3.6 Data Collection Instruments and Procedure

In a qualitative study, data is usefully seen, not simply as 'texts' to be interpreted, or as 'constructions' of participants, but as evidence for the real phenomena and processes that are not available for direct observation (Maxwell, 2012). Therefore, this study used an interview guide and observation checklist for primary data collection. Ngulube (2007) observed that although no single method is perfect if different methods lead to the same answer, then greater confidence can be placed in the validity of the conclusion.

3.6.1 Interview Guide

An interview guide was used to collect data from the respondents because it was easy to clarify any misunderstanding based on the questions and it provided insight information needed for the

study. This type of data collection tool allowed respondents to fully explain whatever they knew about a particular question. Furthermore, personal interviews were an opportunity to demonstrate how OAJs have been managed in their institutions. The interviews created an atmosphere of trust between the researcher and respondents in charge of OAJs. The interview guide collected detailed qualitative data from the key informants.

3.6.2 Observation

In addition to the interview guides, an observation method was also used. According to Kombo (2006), observation is a tool that provides information about actual behaviour. Direct observation allowed the researcher to put behaviour in context and thereby understand it better. In this regard, the website of OAJs was visited and the researcher used an observation checklist to collect data that helped answer the research questions. The online presence of the OAJs, issue intervals, types of systems, and licensing models in use, were observed. This worked as a validity check to confirm some of the information given during interviews.

3.7 Pilot Study

Before data collection, the interview schedule was pre-tested to eliminate any ambiguous questions and errors. Babbie and Mouton (2001) advised that no matter how carefully one designs a data collecting instrument, there is always a possibility of error. Pre-testing gave the researcher a chance to identify items from both the interview guide and observation checklist that may not elicit the information needed, poor instructions, and or missing questions. In this regard, the interview guide was tested on 5 editors of OAJs at the University of Zambia before rolling it out to other OAJs editors.

3.8 Data Analysis

Resnik (2011) refers to data analysis as the process of systematically applying statistical and logical techniques to describe and illustrate, condense and recap, and evaluate data. This study was based on a range of qualitative primary data. Qualitative data was collected through the use of observation and interview guides, which were analysed using Qualitative Data Analysis (QDA) lite software. Qualitative themes were determined after reading through the scripts for the interview guide. QDA lite was used in analysing this to determine relations between the themes

respondents considered in this study. QDA lite software was used because it was the best and cheapest tool that is mostly used to do qualitative data analysis.

3.9 Trustworthiness and Credibility

To develop trustworthiness in qualitative research, Lincoln and Guba (1985) initially presented four criteria: credibility, dependability, confirmability, and transferability. In 1994, Guba and Lincoln added a fifth criterion, authenticity. In order to enhance credibility and trustworthiness, specific strategies were employed by the researcher to address multiple criteria. Strategies performed in each phase of the research process not only attain the criteria but also enrich the credibility and trustworthiness of the study (Polit & Beck, 2012). Strategies to ensure credibility are triangulation, pro-longed engagement, persistent observation, and member checks.

Triangulation is the process of using multiple sources to conclude (Casey & Murphy, 2009). With methods triangulation, the researcher used multiple methods of data collection in an attempt to gain an articulate, comprehensive view of the phenomenon. Methods of data collection included interviews, observation, and secondary information recorded throughout the research process.

Thorough data collection is essential when conducting qualitative research. The researcher strategised to facilitate the process such as prolonged engagement and persistent observation. Prolonged engagement is the process of building trust and rapport with informants to foster rich, detailed responses. The researcher promoted this process by allowing adequate time to collect data and obtain an understanding of the people and phenomenon of the study. Prolonged engagement provides scope; however, persistent observation guarantees the researcher's attention to the feelings or emotions of the informant or situation being studied to provide depth to the study (Lincoln & Guba, 1985).

To enhance the credibility of the study, criticality, and thoroughness were validated by the detailed description of in-depth data analysis and repeated review of the transcripts, providing a process to achieve data saturation and breadth of understanding of the phenomenon. To ensure the credibility of the interview data, a member check was conducted with participants. Confirmability and vividness were addressed through the use of rich quotes that incarnate the emerging themes. To ensure the accuracy of interpretations, an audit trail was maintained with

the managing editors/ persons in charge of OAJs, and an academic supervisor was involved in the data analysis. Triangulation was confirmed through the use of multiple methods of data collection, including data from the interview guides, observation, and secondary literature.

3.10 Ethical Consideration

Ethical consideration entails that the research subjects' rights and the rights of others in the research setting are protected. Research ethics educates and monitors researchers to ensure a high ethical standard. According to (Burns & Grove, 2010), research ethics could provide guidelines for the responsible conduct of respective research. To conduct research under the approved research protocol, this study obtained clearance from the University of Zambia Ethics Committee. A letter of introduction was obtained from the directorate to facilitate the researcher's visits to the universities to conduct interviews.

In addition, informed consent was obtained from participants before they participated in this study. It is worth mentioning here that participants were allowed to discontinue their participation at any time and those who were not interested in participating were informed of their freedom not to do so.

Furthermore, participants had the right to understand what the researcher intended to do. They were informed of the researcher's willingness to share the findings with them for their reactions among others.

The study employed justice by ensuring that all study participants meeting the criteria were fairly selected and included in the study. Finally, participants in the study were treated with due respect, and any personal identifiers encountered were removed to maintain utmost confidentiality. Lastly, information collected from this study was interpreted, presented, and communicated honestly; it was not doctored to suit the opinion of the researcher and the information collected was for academic purposes only.

3.11 Summary

The research design for this study was exploratory and the study used qualitative approaches to research. The study employed a complete census approach in the sense that all the (17) OAJs from 9 public universities in Zambia took part in the study. The study employed purposive

method in selecting the key informants to be interviewed. Data collection was done using observation and an interview guide. Before data collection, the interview schedule was pretested to eliminate any ambiguous questions and errors.

Furthermore, qualitative data was grouped into emerging themes, and a description of each theme was done and analysed using QDA. To enhance credibility and trustworthiness, specific strategies were employed by the researcher to address these multiple criteria. The researcher attempted to carry out the study with strict compliance with ethical issues. In this regard, the researcher made sure that clearance was obtained from the University of Zambia Ethics Committee and permission was acquired from university establishments.

CHAPTER FOUR: PRESENTATION OF THE RESEARCH FINDINGS

4.0 Overview

This chapter presents the findings of the study. The study was guided by four specific research objectives, which were to;

- i) establish the current support levels of OAJ publishing in public universities in Zambia,
- ii) explore the types of system and publishing licensing models used by OAJs in public universities in Zambia,
- iii) establish possible benefits/opportunities that accrue to public universities using OAJs,
- iv) explore the possible challenges of establishing OAJ publishing in public universities in Zambia.

The main question being addressed in this study is an investigation into the Emergence of Open Access Journals in Public Universities in Zambia. Essentially, this chapter was exclusively devoted to the presentation and analysis of data collected through interviews and observation guides. Sub-titles were used to discuss the findings. Not all issues reflected in the interview guide and observation guide were included in the presentation but only those that strongly relate to OAJs in public universities were included.

4.1 Characteristics of Key Informants

In this study, 14 key informants from public universities that run OAJs were selected to take part in the study. The other 3 key informants from 3 OAJs were not available for the study. The key informants interviewed for this study comprised managing editors, chief editors, and editors of open access journals in public universities in Zambia. Beyond their editorial roles, these individuals held various positions within their respective universities, including lecturers, librarians, heads of departments, assistant directors, deans, and systems development officers, among others. The age range of the key informants was between 35 and 71 years, with a considerable range of experience in their respective fields, spanning from 10 to 35 years. The average experience of the key informants was 23 years, indicating a high level of expertise and familiarity with the editorial processes and academic publishing landscape. Notably, most of the key informants managing these journals were male.

Public universities which do not run open access journals did not take part in the study. These included Mulungushi University, Levy Mwanawasa University, Mukuba University, Palabana University, Robert Makasa University, and Copperbelt University (CBU) respectively. The only public universities that participated in the study were Chalimbana University, Kwame Nkrumah University, and the University of Zambia because, at the time of data collection, these were the only public universities that had running OAJs on their institution websites as it can be seen in the table below.

Table 1: Open Access journals in Public Universities in Zambia as of December 2023.

SN	PSEUDO NAMES OF PARTICIPANTS	POSITION IN THE EDITORIAL TEAM	NAME OF THE JOURNAL	JOURNAL URLs	NAME OF UNIVERSITY
1.	RESP1	Editor	Chalimbana University - Multi-Disciplinary Journal of Research, (CUMDJR)	http://journals.chau.ac.zm/journals	Chalimbana University
2.	RESP2	Editor-in-Chief	Kwame Nkrumah University Multi-Disciplinary Journal (KNUMJ)	https://accessjournal.nkrumah.edu.zm/index.php/knuj	Kwame Nkrumah University
3.	RESP3	Editor	Journal of Adult Education (JAE)	https://journals.unza.zm/index.php/JAE	The University of Zambia
4.	RESP4	Chief Editor	Journal of Law and Social Sciences (JLSS)	https://journals.unza.zm/index.php/JLSS	The University of Zambia
5.	RESP5	Administrative Editor	Journal of Lexicography and Terminology	https://journals.unza.zm/index.php/jlt	The University of Zambia.
6.	RESP6	Technical Editor	Multidisciplinary Journal of Language and Social Sciences Education	https://journals.unza.zm/index.php/mjlsse	The University of Zambia
7.	RESP7	Chief Editor	Journal of Natural and Applied Sciences (JONAS)	https://journals.unza.zm/index.php/JONAS	The University of Zambia
8.	RESP8	Technical Editor	Zambia Interdisciplinary Journal of Education (ZIJE)	https://journals.unza.zm/index.php/ZIJE	The University of Zambia
9.	RESP9	Acting Chief Editor	Zambia Journal of Education	https://journals.unza.zm/index.php/ZAJE	The University of Zambia
10.	RESP10	Editorial Board Member	Zambian Journal of Educational Management, Administration and Leadership (ZJEMAL)	https://journals.unza.zm/index.php/ZJEMAL	The University of Zambia

11.	RESP11	Managing Editor	Zambia Journal of Religion and Contemporary Issues (ZJRCI)	https://journals.unza.zm/index.php/ZJRCI	The University of Zambia
12.	RESP12	Editor	Zambia Law Journal (ZLJ)	https://journals.unza.zm/index.php/ZLJ	The University of Zambia
13.	RESP13	Editorial Assistant	Zambian Journal of Contemporary Issues (ZANGO)	https://journals.unza.zm/index.php/ZIOCI	The University of Zambia
14.	RESP14	Managing Editor	Zambian Journal of Library & Information Science (ZAJLIS)	https://zajlis.unza.zm/index.php/journal	The University of Zambia

Source: DOAJs (2024) and the Web.

4.2 Current Support Levels of Open Access Journals in Public Universities in Zambia

The findings showed that all (14) of the Key informants were upbeat about this new form of scholarly communication. When asked to explain to what extent their institutions supported OAJ publishing, RESP 2 said that:

”It was to a greater extent in that all their Journals are online and sitting on an open access platform and that the university allows its staff to actively participate in publishing their works in OA platforms”.

Another respondent RESP1 submitted that:

“All the departments publish some journals online. This is important because if a department can publish journals online it means that other departments are doing the same which in turn benefits the whole institution”.

When asked exactly what type of support their institutions provided in order to support OAJ publishing, RESP 10 submitted that:

“The university management provides IT infrastructure on which these journals are installed. Management also provides the training of reviewers and managing editors of OAJs.”

When asked if OAJ publications were acceptable for consideration of tenure and or promotion in their respective institutions, all key informants indicated that their institutions had positive attitudes towards OAJ. RESP 14 submitted that:

“Many lecturers and researchers publish their works in OAJs and that most journals sitting on the institution platform have articles from lecturers and researchers and these articles are considered greatly during promotion”.

4.3 Types of System and Publishing Licensing Models used by Open Access Journals in Public Universities in Zambia

The findings of the study established that all the journals published by the 14 key informants use Open Journal System (OJS). RESP 5 submitted that:

“Most if not all our journals use Open Journal Systems 3.1.0.1, which is open source journal management and publishing software developed, supported, and freely distributed by the Public Knowledge Project under the GNU General Public License”.

When asked what type of licensing model the universities were using to publish OAJs, all fourteen (14) key informants indicated that they were using the Creative Commons Licensing Model. Creative Commons licenses allow authors to retain copyright over their work while allowing others to use and distribute their work in a variety of ways. This helps to increase the visibility and impact of research and can also provide a framework for sharing and reusing research.

However, it was observed that of the 14 journals from three universities, 12 journals did not clearly indicate or link the licensing models being used for their journals on their websites. Only two (2) journals, namely, Kwame Nkrumah University Multi-Disciplinary Journal (KNUMJ) and Zambia Journal of Library and Information Science (ZAJLIS) were the only journals whose licensing models were clearly indicated on their websites. The CC-BY was being used which offered total freedom to the reader. The findings further revealed that most of the open access

journals had a publication cycle of twice in a year. This scenario is captured in the statements below by key informant RESP 14.

“Zambian Journal of Library & Information Science (ZAJLIS) use Creative Common (CC) Attribution (BY) 4.0 International License. This license allows others to distribute, remix, and build upon your work, even commercially, if they credit you for the original creation. This is the most accommodating of licenses offered. This type of license is recommended for maximum dissemination and use of licensed materials which is clearly indicated on our website of the OAJ. The system is hosted by ZAMREN, and the publishing cycle of the journal is twice in a year”. [RESP 14]

RESP 2 also indicated that:

“The journal uses Creative Common (CC) Attribution (BY) 4.0 International License which guarantees people (readers) and organisations unlimited rights to share, use and build upon works published in the journal, all they need to do is to acknowledge the source (authors)”.

RESP 6 also pointed out that:

“Although the licensing model is not clearly indicated on the site of the OAJ, the journal use Creative Common (CC) Attribution (BY) which enables users to distribute, remix, adapt, and build upon the materials in any medium or format, so long attribution is given to the creator.”

Furthermore, 12 key informants echoed similar views when asked what type of licensing model was being used by their journals.

The study further established similar views on factors which influenced the adoption of the type of licensing model these universities were using in publishing OAJs. The factors established as stated in the responses of the respondents were:

“Knowledge and research are useless if not shared, it is of value if shared and not restricted. There is need to share information if the author is acknowledged” [RESP 14].

Other respondents also echoed on the need to share information as asserted by RESP 5, 6, and 7 whose views were “Need to share information as long as author is acknowledged” because what is important is to ensure that the owner of the intellectual property should always be acknowledged to mitigate the risk of copy right litigation”.

“Creative Commons Licenses increase visibility and collaboration. Your work will be available free of charge and on the Internet and people will be encouraged to share, publish or use it as you allow or specify. At the same time, he gives you credit and attribution for his work” [RESP 2].

“CC licenses provide standardized methods for granting permission to anyone, from individual creators to large institutions, to use creative works under copyright law” [RESP 8].

“Such licenses foster cooperation, innovation and diversity in the digital world. By sharing and reusing digital content, people can learn from each other, improve existing products, create new ones, and reach wider audiences” [RESP 6].

“Because it promotes access and inclusion, especially for people who may not have the resources or the rights to use proprietary or restricted content” [RESP 9].

“Because it is free software, it had an impact on the licensing model that the institutions chose to use when publishing OAJs” [RESP 1].

4.4 Benefits of Using Open Access Journals in Public Universities.

The utilisation of OAJs by the public universities comes with its own benefits and opportunities at the same time. The study was able to establish that universities that were utilising the OAJs had their corporate images improved as the case is with UNZA where the institution is rated as the best in Zambia and among the best in Africa. Some of the key benefits and opportunities as reported by most respondents were:

4.4.1 Increased Visibility and Impact

The publication of open access journals offers instant, unlimited and free global access to your research and enables you to reach a wider audience. Since your research is no longer confined to

an expensive pay wall, your work is probably read not only by your colleagues or those who have easy access to a research library. Researchers can easily access and participate in their research, increase their chances of implementing it and have a greater impact on their work.

Open Access Journals allow articles to be freely available to anyone with an internet connection, which can increase the visibility and impact of the research. This was confirmed by one respondent, RESP 1, who indicated that:

“It enhances visibility of journals; it expands the leadership base and enhances feedback”.

Another respondent, RESP 4, submitted that:

“AOJs enhance visibility, and easy accessibility hence increases the impact in terms of H-Index as they are highly cited, hence high chances of promotions and development. Production cost is also cut down as works are published online making information available”.

4.4.2 Increased Citations

Today, more evidence shows that research published in open access journals attracts more citations and online attention than paid versions. Open access documents usually attract more views and are downloaded over a longer period of time and are more prominent than paid for articles.

Another respondent further added that:

“Research has shown that articles published in open access journals receive more citations than those in subscription-based journals” [RESP 3]

RESP 4 further added that:

“Increased citations increase the impact factor of a journal, which in turn increases the researchers’ h-index, a metric for evaluating the impact of their work. A higher h-index boosts the researchers’ career success by helping them get promotions and tenure positions.”

4.4.3 Greater Opportunities for Collaboration

In addition to significantly increased citation, open access journals also offer tangible benefits to the researchers and their institutions. Articles in open access journals are freely available online to anyone, which maximizes their visibility and encourages a wider public engagement. This puts the research on the forefront and puts a spotlight on the researchers, which can enable other groups to reach out to them and increase their collaborations. The increased global visibility that open access publishing offers to research, may bring with it opportunities to find new connections for collaborative research. Collaborations with different subject fields and institutions could potentially create new opportunities, cut down on the duration of research, and may even help bring down the cost of research. Respondent [RESP 1] observed that:

“Open access journals promote collaboration and innovation, enabling researchers to build on each other’s work more easily. He further added that, with open access to research, researchers can easily access and build on previous research, resulting to new discoveries and innovations”.

“It has actually resulted in more interdisciplinary collaboration as information on diverse topics is available on the click of a mouse” [RESP 6].

Open access allows for free and accelerated exchange of ideas between different disciplines, irrespective of their geographical locations.

4.4.4 Easy Access

Furthermore, open access journals remove barriers to accessing research, particularly for readers who may not have access to subscription-based journals through their institutions. This can be particularly important for researchers in developing countries or for independent researchers who do not have access to library resources. This is reflected in the statement of one of the respondents below:

“ Open access journals allows redistribution of published materials, AOJs can be easily accessible, read by anyone without paying for them as they are provided freely online even without library resources one can access the latest article”.[RESP 8]

Furthermore, easy access to these different research materials and the corresponding body of knowledge serves to stimulate novel conversations and opens the door to new areas of inquiry that may have not been considered before.

4.4.5 Reduction in Cost of Processing and Production of Articles

The findings revealed that it has reduced the cost of processing and production of articles including publication and also dealing with soft copies, which is easy to manage than hard copies. RESP 10 submitted that:

“Most publications for OAJs are affordable as they are free from article processing fees, where you are charged the charge is minimal”.

Overall, open access journals can provide many benefits to researchers and students, including greater access to research, preservation of knowledge, and collaboration and innovation. Other than greater access to research, preservation of knowledge, and collaborations, publishing research output in open access journals also helps the information reach new readers. A wide readership increases the chances of it to be reused, allowing others to build on it. This increases the impact of the research, which employers are encouraging increasingly.

The greater visibility of open access journal articles culminates in greater citation of the research article. AOJs enhance corporate image where today an institution such as UNZA is today the most popular and that this is as result of the opportunity that which OAJs have been able to create. OAJs have today made other universities which may still be considered as in the infancy stage and yet they are today among the institutions that are widely known. With the growth of open access publishing in the field, it is easier than ever for research to make their works widely available and accessible to others.

4.5 Challenges of Open Access Journal Publishing in Public Universities in Zambia.

Despite the study revealing key informants were upbeat about this new form of scholarly communication, the study further revealed several reasons as to why some of the higher learning institutions still have not fully utilised the OAJs. The study revealed the following challenges faced by public universities:

4.5.1 Lack of Funds

Lack of adequate funding has been the major problem experienced by public universities in Zambia in their effort to establish open access journals. Public universities often have limited budgets set aside open access publishing, making it difficult to secure sufficient funding to cover the costs of OAJ publishing, as this model often relies on author fees or institutional subsidies. The study revealed that OAJs need funds to cover editorial work, peer review and Article processing charges. Some open access journals charge APC's to authors or their institutions to cover publication cost, including digital objects identifier (DOI) registration. DOIs are unique identifiers assigned to digital objects, like articles, to provide a persistent link to their location on the internet. Registering a DOI requires a fee, typically paid to a registration agency such as Crossref or Datacite, but due to inadequate funding most of the articles from these journals do not have a link to their location on the internet. Traditional journals are funded through subscription fees, but OAJ often needs an alternative funding model. Some OAJs charge author fees for the (APCs), while others rely on government or institutions to finance it. However, not all researchers and institutions have the financial resources to support these models. This scenario is described by RESP 2 in the following statement.

“The utilisation of OAJs adds value to the image of the higher learning institutions, however financial constraints itself compromise full utilisation of the OAJs. This is because by virtue of them being publicly owned universities means that operations are mostly affected by either delay in funding due to bureaucracy or political interference.

Others have not been able to utilise open access journals because, in some cases, they are underfunded, such that it becomes a problem to meet the set budget, and also to introduce such initiatives as the OAJs, which is not an easy undertaking”.

Public universities in Zambia receive substantial part of their funding from the government's budgetary allocation. This increase in the cost of developing OAJs is even made worse by the fact that the institutions continue to struggle with declining funding from budgetary allocations from the government.

4.5.2 Infrastructure

Infrastructural investments required for efficient OAJ management is quite challenging for public universities in Zambia. This is because of inadequate funds allocated for open access publishing, hence establishing and maintaining the technical infrastructure required for open access journal publishing, such as hosting platforms and peer review systems is a significant challenge for public universities in Zambia.

“Public universities face significant infrastructural and financial constraints, which hinders their ability to establish and maintain open access journals and platforms”
[RESP 11]

4.5.3 Intermittent or Erratic Internet Availability

Limited access to reliable internet connectivity has not only blocked information flows but ultimately stifled social and economic development.

“Internet connection is a key to OAJs. It is often a much overlooked fact that access to articles in OAJs requires a reliable and fast internet connection since many articles are available solely as PDF files. Despite a very rapid rate of the internet growth, our institutions still lag in reliable internet connectivity, lamented (RESP 2)”.

RESP 3 added that:

“Lack of stable internet connectivity is the major barriers to publishing in OA journals. The university has a local area network that provides internet connections, though often it’s plagued with technical issues. This problem is further compounded by the slow speed of internet connectivity. Researchers who are not connected to the Internet are excluded automatically from publishing in, and benefiting from, a growing number of journals, because many new journals are created online while many old ones now often have online counterparts”.

4.5.4 Inadequate Advocacy

One of the best ways to promote the development of open access journals in public universities is through advocacy. For such advocacy to be effective, it must be undertaken by the stakeholders in the institutions. These stakeholders include lecturers, researchers, librarian as well as students. Effective advocacy presupposes that the advocates or stakeholders are very familiar with the

concept. Fortunately, as we have seen during this discussion of knowledge of open access journal publishing is very high among the major stakeholders in public institutions. RESP 6 affirmed that:

“There is still need for increased advocacy of open access journal publishing as a few still have wrong perception for local journals as they think they are of low status and lack a critical eye compared to the subscription based journals which are regarded as high impact journals and raise the H index faster.”

4.5.5 Predatory Journals

The study revealed that with the development of online publishing and the rise of open access journals, there has also been an increase in predatory journals. These illegitimate journals charge authors publication fees to gain a profit, but do not provide the publishing service associated with reputable journals as stated in the response of the participants below:

“There are pseudo-journals or publications that claim to be legitimate scholarly journals but misrepresent their publishing practices. These journals take advantage of authors by asking them to publish for a fee without providing proper publishing practices. These greedy journals exist only to extort money from researchers trying to publish their work. There is a huge potential from revenue in the open access publishing business model, which has spurred the growth of predatory journals hoping to cash in on the practice”.
[RESP 8]

There are obstacles to guaranteeing the legitimacy of accessible literature which include the recent emergence of predatory journals, which want submissions from authors but charge exorbitant fees for each piece published and offer no control. [RESP 12]

It was further established that predatory journals do not provide strict peer review process to ensure high quality, standard journals to meet the demand, instead produce substandard journals. This was confirmed by RESP 14, who observed that “predatory publishers typically guarantee a speedy turnaround on publishing a submission since they do not adhere to the correct academic requirements for publication which ultimately compromise the quality of the research being published”.

Another participant was of the view that predatory journals are as a result of lack of subscription fees. Open access journals may struggle to cover the costs of peer review, editing, and publication, which could ultimately compromise the quality of the research being published. [RESP 10]

4.5.6 Impact Factor

The findings revealed that some stakeholders still perceive traditional subscription-based journals as more prestigious, leading to concerns about the visibility and impact of research published in open access journals from public universities.

“Some researchers are still wary of submitting their work to open access journals as they believe that online publications have less gravitas and are not as professionally impressive as those in print”. [RESP 9]

Another respondent revealed that:

“Some still have a wrong perception about OAJs as they are still being perceived as of low status and inferior, though that is now changing”. [RESP 5]

The study further revealed that high impact journals raise H index faster as compared to local journals which lack a critical eye due to their peer review process.

“Local OAJs lack a critical eye, since the peer review process is not that thorough, as compared to international journals which are high impact journals and raises the H index faster, lamented”. [RESP 6].

4.5.7 Other Challenges

Other challenges identified included lack of consistent training for editorial board members on how to publish in OAJs in public universities. One respondent said “If trained, then lack of practicing on how to publish OAJs as a researcher is a major challenge and this is because it is not their full time jobs” [RESP 13]. There are also challenges with uploading articles online due to lack of adequate ICTs skills, long processing of payment, strict presumptions about the review procedure, and inadequate ICTs literacy among experienced peer reviewers. Others reported lack of institutional support to effective implementation of open access journal publishing, copyright

issues to do with who owns the article if published in the open access journal and intellectual property rights which may complicate efforts to share research outputs freely and openly.

4.6 Summary

In this study, 14 key informants from 3 public universities that run OAJs were selected to take part in the study. The key informants interviewed mainly were managing editors, chief editors, and editors. The findings showed that all (14) of the key informants were upbeat about this new form of scholarly communication. The study has established that at least two (2) out of fourteen (14) journals from three (3) public universities were using Creative Common (CC) Attribution (BY) 4.0 International Licensing Models which were linked on their website. Kwame Nkrumah University Multi-Disciplinary Journal (KNUMJ) and Zambia Journal of Library and Information Science (ZAJLIS) were the only journals whose licensing models were indicated on their websites. The findings of the study have established that all the journals published in these 3 public universities were open access and used open journal system.

The study further establishes that universities that were utilising the OAJs had their corporate images improved as the case is with UNZA where the institution is rated as the best in Zambia and among the best in Africa. Some of the key benefits and opportunities as reported by most respondents among others include Increased visibility and impact, Increased citations, greater opportunities for collaboration, easy access, reduction in cost of processing and production, and adherence to funder requirements.

Despite the study revealing that many were aware of the OAJs and were upbeat about this new form of scholarly communication, the study further revealed several reasons why some of the higher learning institutions still have not fully utilised the OAJs. The following challenges were cited: Lack of funds, infrastructure investments, intermittent or erratic internet availability, and inadequate advocacy. The study further revealed that with the development of online publishing and the rise of open access journals, there has also been an increase in predatory journals. It further revealed that some stakeholders still perceive traditional subscription-based journals as more prestigious, leading to concerns about the visibility and impact of research published in open access journals from public universities.

Other challenges identified included a lack of consistent training for editorial board members on how to publish in OAJs in public universities. Lack of practice on how to publish OAJs as a researcher was also a major challenge since it was not their full time job. Challenges with uploading articles online due to lack of adequate ICT skills, long processing of payment, strict presumptions about the review procedure, and inadequate ICT literacy among experienced peer reviewers were also reported. Others reported copyright issues to do with who owns the article if published in the open access journal and intellectual property rights which complicate efforts to share research outputs freely and openly and also lack of institutional support for effective implementation of open access journal publishing.

CHAPTER FIVE: DISCUSSION OF RESEARCH FINDINGS

5.0 Overview

This chapter discussed the research findings of the study entitled “An investigation of the Emergence of open access journals in Public Universities in Zambia”. The discussion relates the objectives of the study to the findings of the research and is organized according to the research objectives as outlined in Chapter One.

5.1 Demographic Characteristics of Key Informants

The study's results revealed a notable gender disparity in editorial leadership, with male key informants dominating. This imbalance suggests the existence of barriers hindering women's participation and has significant implications for diversity and representation in academic publishing. One speculated potential factor contributing to this disparity could be technology phobia, which may deter women from engaging with digital publishing platforms and online manuscript management systems due to inadequate familiarity or comfort. This speculation was supported by research indicating that women are often underrepresented in fields requiring advanced digital literacy skills, such as computer science and information technology due to techno phobia (Kamberidou & Pascall, 2019).

Further, the average experience of the key informants was 23 years, indicating a high level of expertise and familiarity with editorial processes and the academic publishing landscape. Notably, these individuals held diverse positions within their respective universities, including lecturer, librarian, head of department, assistant director, dean, and systems development officer. However, a significant concern emerged regarding the lack of consistent training for editorial board members on publishing in OAJs in public universities. As editorial roles were not their primary responsibilities, the absence of systematic training may have hindered their ability to effectively navigate the complexities of OAJ publishing.

This finding highlights the need for targeted training initiatives to support editorial board members in developing the necessary skills and expertise to publish in OAJs. By addressing this training gap, public universities can promote greater diversity and representation in editorial leadership roles, ultimately enhancing the quality and inclusivity of academic publishing.

5.2 Current Support Levels of Open Access Journals in Public Universities in Zambia.

Though open access journals have gained substantial momentum in academic communities worldwide, offering a viable alternative to conventional subscription-based journals, their level of support among academics in universities is dependent upon a variety of factors, such as disciplinary norms, institutional policies, awareness of the benefits of OAJ, and the perceived quality of OAJ publications. Researchers in public universities are generally becoming more supportive of OAJ due to institutional mandates, advocacy activities, and growing awareness of the benefits of OAJ. Still, issues including differing discipline standards and quality concerns affect OAJ's acceptance and degree of support. Addressing these issues and improving the reputation and acknowledgment of open access journals will be essential as the academic community stays involved in open access. The empirical evidence suggests a positive effect of knowledge sharing among different stakeholders indicates a positive development for the universities because the aftereffects are enhanced corporate image of the organizations.

The findings presented in section 4.3 of chapter 4 showed that key stakeholders such as editors, lecturers, and researchers had a positive attitude towards OAJ. This means that open access journal publishing has to a great extent been accepted in these institutions. This finding is consistent with the findings of Chewe, et al (2021) on open access scholarly communication practices at the University of Zambia, which showed that the majority of the faculty members were aware of open access and were upbeat about this new form of scholarly communication. Similarly, on perception of lecturers and researchers at the University of Zambia (UNZA) towards OAJ (Bwalya, M'kulama and Mwalimu 2019) discovered that the majority of the lecturers and researchers were aware of the existence of OAJ and that they had a positive attitude towards OAJ. This is evident with the University of Zambia which has led in supporting OAJ by listing all OAJ on its official website. This finding is supported by Lubasi, et al (2018), who pointed out that the majority of UNZA teaching staff are familiar with open access publishing and are advocates of OAJ.

However, a study by Bwalya, M'kulama, and Mwalimu (2019), revealed that despite lecturers' overwhelming awareness of OAJ, few lecturers and researchers (21%) published their works on OAJ. This was attributed to UNZA management's negative attitude towards OAJ then. However, the scenario has now changed as the findings of this study discovered that most journals sitting on the institution platform have articles from lecturers and researchers. The study

revealed that many lecturers and researchers have been publishing in OAJs. Accordingly, the results showed that public universities are recognizing articles published in OAJs during the promotion of lecturers and researchers and universities are now allowing their staff to actively publish their works on OA platforms. Overall, the most common finding among the respondents was that the introduction and utilization of OAJs by some higher learning intuitions was because of the support that management was rendering while those that have not been able to be fully utilised were because of compromised support or lack of policy including financial constraints. The finding in this regard revealed that University management supported OAJs by providing IT infrastructure on which these journals were installed, and also provided the training of reviewers and managing editors of the said OAJs. These findings are consistent with Suber (2012) which observed that many universities worldwide have provided financial and infrastructural support for OAJ publishing. This is in line with the TOE framework, which advocates that for a successful adoption and use of OAJs in these public institutions, is dependent on top management support.

5.3. Types of System and Publishing Licensing Models Used by Open Access Journals in Public Universities in Zambia.

The results presented in section 4.4 of chapter 4 have established that all the journals published by public universities were using the Open Journal System (OJS) as verified on their institutional websites. The study further observed that OJS was cost-effective, enhanced increased visibility, was flexible and customizable, facilitated open access compliance, and was widely adopted hence its preference. These findings are in line with the findings of Duranceau (2013) that OJS reduces publication costs, making open access publishing more sustainable. OJS enhances journal visibility, reach, and citation rates through search engine optimization and indexing. OJS facilitates compliance with open access policies and mandates (DOAJ, 2020). In line with the TOE framework, successful adoption of OAJs in public institutions hinges on the effective integration of these journals with existing publishing infrastructures. This integration should prioritize simplifying the publication process, thereby reducing institutional barriers to adoption and fostering a more conducive environment for OAJ implementation.

Concerning the various types of publishing licensing models used by open access journals in public universities in Zambia, the findings of the study established that OAJs publishing employs

various licensing models to govern the use and reuse of published content. These models ensure that authors retain certain rights while allowing readers to access and utilise the content freely. Although the licensing models were not explicitly stated by other OAJ, the study revealed that they all utilized Creative Commons licenses for publishing their journals. This could allude to the fact that the CC BY license had become the actual standard for OAJs due to its flexibility, compatibility, widespread adoption, interoperability, and maximum reuse (Kim, 2005).

The study further discovered that of the 14 journals from three universities, 12 journals did not indicate or link the licensing models being used for their journals on their journal websites. Kwame Nkrumah University Multi-Disciplinary Journal (KNUMJ) and Zambia Journal of Library and Information Science (ZAJLIS) were the only journals whose licensing models were indicated on their websites. This finding compliments the findings of Margoni and Peters (2016) who asserted that CC licences play an important role in facilitating open access publishing as they provide a legal framework for giving users the ability to freely view, download, and distribute content.

It should be noted that not having the licensing model on open access journals can have several implications. The absence of a license might make it more difficult to remix and reuse content, which goes against the ideas of open access and reduces the opportunity for fresh ideas and research. In the absence of a clear license, readers and authors may be uncertain of how they may use, distribute, and modify the work, which could result in copyright infringement.

Additionally, journals without clear licenses may be less likely to be cited or included in indices, reducing their visibility and potential impact. Gadd et al., (2016) explain that uncertain licensing might hinder the discoverability and impact of open access content by making it harder for others to incorporate it into databases, repositories, or other platforms. Non-compliance with the funder or institutional open access policy might result in non-compliance with licence specifications, which could endanger financing or publication chances. Authors may not know what their rights and obligations are concerning their work, which could cause miscommunications or conflicts (SPARC, 2015). Tracking usage indicators, like downloads or citations, which are crucial for assessing the impact of research, can be difficult in the absence of a clear license. If a license is not obtained, authors may inadvertently provide publishers rights, which would restrict their capacity to share or reuse their work (Authors Alliance, 2019; UNESCO, 2019). Adopting clear

and consistent licensing practices, OAJs can ensure that research is widely disseminated, reused, and built upon, ultimately advancing knowledge and societal impact. In this regard, the use of publishing licensing models used by open access journals in public universities in Zambia cannot be overemphasised. It should be stated that when choosing a suitable license for one's open access publication, care should be taken to ensure that a free right of access to the work and the right to reuse it in the ways are guaranteed.

5.4 Benefits of Using Open Access Journals in Public Universities.

According to the Cambridge University Press (2024), publishing open access helps to advance discovery by allowing anyone, anywhere in the world, with internet access to find, access, and benefit from your research. Open access plays an important part in allowing us to fulfill our mission of furthering the advancement of learning, knowledge, and research worldwide. Regarding the benefits of using open access journals in public universities, the findings presented in section 4.2.3 of chapter 4 have unveiled several benefits that have been accrued by public universities in Zambia. Some of these include increased visibility and impact, increased citations, greater opportunities for collaboration, easy access, and a reduction in the cost of processing and production of articles. This finding collaborates with that of Mammo and Ngulube (2015) who found that the benefit of open access journals to academicians in higher learning institutions is enormous. The implication of this finding is that public universities need to proactively support the adoption and implementation of OA publishing platforms.

5.4.1 Increased Visibility and Impact

Relating to increased visibility and impact, the findings showed that OAJs enhanced greater visibility and influence, hence elevating the H-Index due to greater citation rates of the research article, which subsequently promotes opportunities for promotions and advancement for researchers and academics. This finding corroborated the findings of Suber (2015) who opined that OAJs provide increased visibility and impact for stakeholders than subscription-based journals. The study also revealed that the reputation and impact factor of the journal was seen as very important among the factors that informed them about choosing OAJs. Further, the research established that the heightened visibility of OAJs results in a broader leadership base and improved feedback. The study was able to establish that universities that were utilising the OAJs

had their corporate images improved as the case is with UNZA where the institution is rated as the best in Zambia and among the best in Africa.

5.4.2 Increased Citations

Concerning increased citations, the study showed that research published in OAJs received more citations and online attention than those in subscription-based journals. Open access publications typically receive more views, are downloaded for a longer length of time, and appear more prominently than paid-for articles. Citations boost a journal's impact factor, which raises the researchers' h-index, a statistic used to assess the importance of their work. Researchers with higher h-indexes are more likely to get promoted and have tenured posts. This finding agreed with the findings of Okoye and Ejikeme (2010), which highlighted one of the benefits of open access as increasing citations to published scientific work.

5.4.3 Greater Opportunities for Collaboration and Innovations

Regarding greater opportunities for collaboration and innovations, the findings show that OAJ publishing gives research a greater worldwide audience, which might lead to new research collaboration opportunities. Regardless of their physical locations, OAJs enable the rapid and unrestricted interchange of ideas among many fields. The study found that publications published in OAJs promote broader public participation. This raises awareness of the study and the researchers, which may encourage other organizations to get in touch with them and expand their collaborative efforts. Working together with diverse universities and topic areas may open up new possibilities. This finding was consistent with a study by Mammo and Ngulube (2015), who found that OAJs could increase scientific collaboration and build partnerships among academic personnel.

5.4.4 Easy Access

As regards easy access, the research observed that AOJs are easily accessible and may be read by everyone without paying for them because they are freely available online, even without library resources, and one can access the most current research which facilitates wider learning. For readers who might not have access to subscription-based journals through their universities, open access publications eliminate obstacles to research access. This can be particularly important for

researchers in developing countries or for independent researchers who do not have access to library resources. The finding agrees with the results of a study by Okoye and Ejikeme (2010), who noted that OAJs offer simple and cost-free online access to the literature required for a given study. In addition, the study discovered that OAJs provide easy access to different research materials and the corresponding body of knowledge serves to stimulate fresh discussions and opens the door to new areas of inquiry that may have not been considered before. Furthermore, the ease of access to information on many subjects has also led to increased collaboration throughout disciplines. With the growth of open access journal publishing in any field, it is easier than ever for researchers to make their works widely available and accessible to others.

5.4.5 Reduction in Cost of Processing and Production of Articles

Regarding the reduction in the cost of processing and production of articles, the findings revealed that OAJs have reduced the cost of processing and production of articles including publication as dealing with soft copies was said to be easier to manage than hard copies which tends to be costly. Production costs were extremely cut due to works being published online. Most publications for OAJs are affordable as they are free from article processing fees (APCs) and where one is charged, the charge is minimal. Otherwise, OAJs offer access to a wide variety of useful information at no cost consequently demanding fewer resources for funding and technical support.

Further, the findings of this study provide evidence of the benefits of open access journals which conform to the literature reviewed. OAJs promote research discoveries, provide an incentive for scholarship, improve education, provide career development, stimulate competition in publishing, provide high-quality scholarly work, and level the publishing playing field by reducing information poverty. In addition, OAJs provide avenues for publishing that are available to all levels of training and practice. The finding corroborates with other researcher's findings of (Herb, 2010), which asserts that open access journals help research output reach new readers. This increases the impact of the research, which employers are encouraging increasingly.

5.5 Challenges of Open Access Journal Publishing in Public Universities in Zambia.

About the challenges of open access Journal publishing in public universities in Zambia, the study revealed various challenges affecting public universities. A mixture of factors for this situation includes:

5.5.1 Financial Challenges

The study established that lack of adequate funding was the major challenge experienced by public universities in Zambia in their effort to establish OAJs as publishing required funds. This is due to limited budgets set aside for OAJs as this model often relies on author fees or institutional subsidies. The study revealed that OAJs need funds to cover publication costs such as editorial work, peer review, and APCs, including DOI registration. To cover these costs, some OAJs charge authors fees for the (APCs), which can be too expensive for researchers, while others rely on government or institutions and on external funding to finance it. These findings are like the study by Bosah, et al (2017) who discovered that many of the respondents agreed that author fees are the major barriers to publishing in OA journals. The study further revealed that registering a DOI that provides a persistent link on the internet requires a fee, but due to inadequate funding, most of the articles from these journals do not have a link to their location on the internet. However, not all researchers and institutions have the financial resources to support these models and by virtue of them being publicly owned universities means that operations are mostly affected by either delay in funding due to bureaucracy and in some cases, they are underfunded, such that it becomes a problem to meet the set budget, and also to introduce such initiatives as the OAJs, which is not an easy undertaking. Lack of funding is an important limitation that results in low research output. This therefore calls for public universities to be innovative and resourceful if they are to sustain the OAJ publishing model.

5.5.2 Infrastructure Challenges

Regarding infrastructure challenges, the study discovered that establishing and maintaining the technical infrastructure required for OAJs publishing such as hosting platforms and peer review systems was a significant challenge for public universities in Zambia. This can be deduced to inadequate funds allocated for OAJs publishing from administrators of those that have not fully

utilised OAJs in their institutions. Further, the study revealed that AOJ publishing in public universities faces significant challenges due to outdated technology and limited digital storage. Specifically, inadequate publishing platforms, software, and hardware hinder efficiency, while insufficient storage capacity constrains the archiving of journal data. This technological inadequacy such as running out of space has hampered OAJs ability to operate effectively, underscoring the need for upgrades and investments in modern publishing infrastructure. Inadequate digital infrastructure and limited technical support restrict OAJs ability to operate effectively.

The study indicated that, despite the rapid growth of the internet, other institutions continue to experience deficiencies in reliable internet connectivity. It was discovered that the lack of stable internet connectivity is a significant barrier to publishing in AOJs in public universities in Zambia. The key informants indicated that access to articles in OAJs is often overlooked, as it necessitates a reliable and fast internet connection, given that many articles are exclusively available in PDF format. The study also found that researchers encountered difficulties uploading and submitting manuscripts because of poor internet, which could lead to a delayed publication process and less journal visibility, which could lower citations. Slow or unreliable internet affects journal management, communication, and accessibility. These findings attest to the findings of (Chan & Costa, 2016), who found that open access journals have been greatly impacted by sluggish or unreliable internet, as users may find it difficult to download or view articles because of slow internet speeds.

5.5.3 Lack of Adequate Training

Regarding the lack of adequate training, the study has established that there was a lack of consistent training among editorial board members and that they lacked ICT literacy skills to enable them to establish functional AOJs. The research further revealed that training of some editorial members was done to a lesser extent, which explains why there were very few experienced and seasoned peer reviewers. The study also revealed that uploading articles online proved to be a challenge for some researchers due to a lack of adequate ICTs skills. Additionally, the study revealed that a lack of skilled editorial personnel, inadequate peer reviewers, and restricted training and development contribute to prolonged publishing time frames, reduced

journal quality, heightened mistakes and inconsistencies, and lower author satisfaction. These findings correlate with those of Mulligan (2015) whose findings indicated that the editorial workforce is a major hindrance in OA publishing. It should be noted that inadequate articulation and training on the use of OAJs leads to the software being under-utilised. Training enables users familiarise and understand how the system operates. Therefore, the issue of training should be prioritized if OAJ publishing is to succeed in public universities in Zambia. There is need for technical expertise for OAJs to be adopted and utilized in the public universities.

5.5.4 Predatory Journals

In the ever-growing setting of scholarly publishing, the surfacing of predatory journals poses a considerable test to the reliability and integrity of scholarly research. These misleading publications abuse the academic pursuit of disseminating knowledge by offering a delusion of authenticity while lacking the critical elements of thorough peer review and editorial omission. Predatory journals exploit the open access model, tarnishing the reputation of legitimate open access journals due to adequate quality control challenges. Identifying predatory journals can be tricky since there is no clear-cut distinction between legitimate publications and those that masquerade as scholarly outlets solely to collect fees from unsuspecting authors. The study established that identifying a journal where to publish was a greater challenge due to predatory journals which have significantly impacted open access journals, affecting their credibility, reputation, and overall landscape. The study further established that predatory journals often skip rigorous peer review and publish low-quality or fake research. Authors are deceived into paying article processing charges (APCs) for worthless services. Predatory journals, which encourage authors to pay APCs for publications but do not engage in a rigorous review process, have also become a corrupt variant of the open-access model (Akwu & Aladokun, 2023). The study has further revealed that due to an increase in predatory journals, open access journals have suffered consequences such as loss of trust, decreased visibility, and reduced collaboration among others. These findings are like those of Shamseer, et al. (2017) who assert that OAJs face difficulties in distinguishing legitimate journals from predatory journals, and due to increased uncertainty of legitimate journals AOJs struggle to secure funding.

Increasing awareness, promoting responsible publishing practices, and encouraging a critical assessment of journal credibility are crucial steps toward safeguarding the integrity of scholarly communication. Publishing in predatory journals can have severe consequences for researchers, including damage to their reputation, credibility issues with their work, and potential harm to the scientific community due to the dissemination of unreliable or unverified information. This finding is a wakeup call for all stakeholders in public universities to sensitise researchers on predatory journals.

5.5.5 Collaboration and Networking Challenges

As regards collaboration and networking challenges, the study established that researchers were hesitant to collaborate with open access journals due to a recent rise in predatory journals. These findings are related to Beall (2017) whose findings revealed that researchers, readers, and funders have lost confidence in open-access journal publishing due to the emergence of predatory journals and, hence, also face difficulties in getting listed in prominent databases. Open access journals have continued to face collaboration and networking challenges, including difficulties in forming international partnerships and limited participation in global academic networks and conferences, hindering their ability to establish meaningful connections and exchange knowledge worldwide. Collaboration and networking challenges significantly impact open access journals, hindering research quality, visibility, and sustainability. Limited international partnerships and networking opportunities reduce interdisciplinary collaboration, expertise sharing, and citation rates, ultimately affecting the journal's reputation and credibility. This leads to decreased knowledge dissemination, reduced funding opportunities, and stunted growth.

5.5.6 Slow Adoption of Open Access Journals

Despite the findings showing positive support towards AOJ publishing, the study has revealed slow adoption of OAJs among public universities in Zambia. The study discovered that only (3) out of (9) public universities had OAJs on their website. The study further revealed that researchers' misconceptions about OAJs hinder adoption, with many prioritizing traditional journals for career advancement and prestige. This finding is in line with that of Pinfield et al. (2015) who noted that the total cost of publication in hybrid open access journals can be a

significant barrier. The slow adoption of (OA) among researchers significantly impacts OA journal publishing, presenting challenges such as limited submissions, reduced quality manuscripts, and financial constraints. There is a need therefore to proactively promote OAJ publishing in public universities.

5.5.7 Inadequate Advocacy

One of the best ways to promote the massive development of open access journal publishing in public universities is through advocacy. The study discovered that there is still a need for increased advocacy of open access journal publishing despite research showing that the majority of both the policy makers and researchers were aware and were more familiar with open access journals. The study discovered that increased advocacy for open access (OA) journals promotes the idea that research publications should be freely available online to anyone, anywhere, without financial or legal barriers. This movement aims to make knowledge more accessible, promote collaboration and innovation, and benefit society through openly available research. Advocates seek to raise awareness, influence policies and encourage researchers to publish in OA journals, ensuring equitable access to knowledge globally. However, this can only be achieved by removing paywalls and subscription fees, this implies a lack of deeper understanding of open access and hence the need for more awareness creation so that the concept is well understood. OA journals enable immediate availability of research, permission for reuse and sharing, and alignment with the public's interest in publicly funded research. Ultimately, the goal is to democratize access to information, driving progress and societal impact. The study further established that for such advocacy to be effective, it must be undertaken by all stakeholders in the institutions.

5.5.8 Impact Factor

The Journal impact factor refers to the frequency by which an article in a journal may be cited each year. A higher impact factor is an indication that a journal is more influential in its field of study. Predatory journals often publish fake impact factors or do not list one at all. The study discovered that there is a need for increased support for OAJs as a few still have the wrong perceptions of local journals as they think they are of low status and lack a critical eye compared to the subscription-based journals which are regarded as high impact journals and raised the H index faster. The results showed that, although this is gradually improving, some researchers still

hold the wrong perception about OAJs, believing them to be of low status and inferior. According to the findings, the study revealed that some researchers are still hesitant to submit their work to open access journals because they think overseas publications improve their H index more quickly than local journals, which lack a rigorous peer review procedure and have less gravitas. The study observed an overwhelming number of key informants affirming to journal impact factor as a barrier to AOJs publishing. There is a need to seriously address the issues regarding the visibility and impact of research published in public university open access journals since certain stakeholders still perceive traditional subscription-based journals as more prestigious.

5.5.9 Lack of Institutional Support

Open access journals are significantly hampered by a lack of institutional backing, which results in sustainability problems and worse journal quality. Open access scholarly communication can flourish only if faculty and university administrators are made aware of its benefits (Chan and Costa, 2005). They further noted that OA journals are significantly hampered by a lack of institutional backing, which results in sustainability problems and worse journal quality. The findings of this study show that there is a lack of institutional support for effective implementation of OA journal publishing in public universities in Zambia. According to the findings, only three of the nine public universities have operational OAJs on their website. This is sufficient evidence to conclude that these institutions do not possess the necessary resources and support from their respective institutions to establish OA journals. The findings of this study validate findings by previous researchers like Swan (2017) and Harnard (2015) who emphasized that institutional support, including adequate human resources, is essential for OAJs to flourish. It should be noted that without institutional policies and mandates, OAJs will continue to struggle with visibility, discoverability, and marketing.

5.5.10 Copyright Issues

Copyright is a collection of legal rights that attach to an original work when it is created. Copyright law is an aspect of intellectual property law that seeks to invest authors with monopoly right or control over their creative work including the right of exploitation to their work as well as the right to ensure that their work is properly credited and is not changed in a way that harms the author's reputation. The study has established that intellectual property rights

and copyright concerns about who owns the article if it is published in an open access journal complicate efforts to freely and publicly share research findings. The study also found that confusing reuse and adaptation requirements, unclear author rights, and ambiguous license conditions cause reluctance to embrace open access models, restricted research reuse and dissemination, and possible legal issues. The results are consistent with Armstrong (2016), who pointed out that copyright regulations may limit the sharing of research, which runs counter to the goals of the open access movement. Open access journals are severely impacted by copyright uncertainty, which leaves authors, publishers, and readers perplexed and hesitant (Hirtle, 2018). This finding reinforces the need to employ explicit licensing agreements such as Creative Commons (CC) licenses which provide clarity and simplicity in OAJs publishing.

5.5.11 Strict Peer Review Standards and Procedure

Peer review is the independent assessment of your research paper by experts in your field. The purpose of peer review is to evaluate the paper's quality and suitability for publication. As well as peer review acting as a form of quality control for academic journals, it is a very useful source of feedback for you. The feedback can be used to improve your paper before it is published. So at its best, peer review is a collaborative process, where authors engage in a dialogue with peers in their field, and receive constructive support to advance their work. Regarding strict peer review standards and procedure, the study discovered that researchers encounter various frustrations whilst publishing in OAJs due to stringent manuscript submission criteria leading to many rejections and prolonged review periods delaying publication, which threatens the relevance, impact and timeliness of innovative research. The study further observed that the vigorous peer-reviewing procedures, while essential for maintaining the integrity and quality of academic research, have a discouraging effect on many researchers, leading to reluctance to publish in some of these platforms. However, the findings of this study are contrary to Benjamens et al. (2021) regarding relaxed peer review standards for urgent research. Benjamens et al. (2021) argues that high-quality peer review standards should remain consistent, prioritizing scientific integrity and methodology, even in situations requiring rapid dissemination of new research findings. Conversely, the study has revealed that authors' desire for global visibility and the pressure to publish (due to the 'publish or perish' ethos) has led many to unintentionally publish in predatory journals. These journals exploit this urgency by offering rapid publication,

often bypassing rigorous peer review. These platforms appeal to authors who struggle with the lengthy and rigorous review process of reputable journals, unaware of the risks of publishing in questionable outlets.

5.6 Challenges Affecting OAJ Publishing in Public Universities in Zambia: A TOE Framework Perspective.

The findings of this study highlighted several challenges affecting the adoption and implementation of OAJs in public universities in Zambia. These challenges can be understood through the lens of the Technology-Organization-Environment (TOE) framework, which suggests that the adoption and implementation of new technologies are influenced by technological, organizational, and environmental factors.

5.6.1 Financial Challenges

The study found that financial challenges, including inadequate funding and limited budgets, hinder the establishment and maintenance of OAJs in public universities in Zambia. This finding is consistent with the TOE framework, which emphasizes the importance of adequate resources and funding for the successful adoption and implementation of new technologies.

5.6.2 Infrastructure Challenges

The study revealed that infrastructure challenges, including outdated technology and limited digital storage, pose significant barriers to OAJ publishing in public universities in Zambia. This finding supports the TOE framework's emphasis on the importance of technological infrastructure for the successful adoption and implementation of new technologies.

5.6.3 Lack of Adequate Training

The study found that a lack of adequate training and ICT literacy skills among editorial board members and researchers hinders the effective use of OAJs in public universities in Zambia. This finding is consistent with the TOE framework, which highlights the importance of technical expertise and training for the successful adoption and implementation of new technologies.

5.6.4 *Predatory Journals*

The study revealed that predatory journals pose a significant challenge to the credibility and reputation of OAJs in public universities in Zambia. This finding supports the TOE framework's emphasis on the importance of environmental factors, including the presence of predatory journals, in influencing the adoption and implementation of new technologies.

5.6.5 *Collaboration and Networking Challenges*

The study found that collaboration and networking challenges, including difficulties in forming international partnerships and limited participation in global academic networks, hinder the growth and development of OAJs in public universities in Zambia. This finding is consistent with the TOE framework, which highlights the importance of organizational factors, including collaboration and networking, in influencing the adoption and implementation of new technologies.

In conclusion, the findings of this study highlighted the importance of addressing financial, infrastructure, training, predatory journal, collaboration, and networking challenges to promote the adoption and implementation of OAJs in public universities in Zambia. The TOE framework provides a useful lens for understanding these challenges and identifying strategies for overcoming them.

5.7 Summary

This chapter presented the discussion and interpretation of the results of the research. The chapter also integrated the results in chapter four with the information in chapters one and two. The main trends and patterns in the results as earlier stated in section 5.0 of this chapter were discussed concerning the research objectives outlined in chapter one. The overall findings of the study revealed a significant gender imbalance, with mostly male key informants holding editorial leadership roles. Despite their extensive experience, averaging 23 years, and holding various university positions, including lecturers, librarians, and administrators, the study highlighted a notable training gap. Specifically, editorial board members lacked consistent training on publishing in OAJs, as editorial roles were not their primary responsibilities. The study has further revealed that (OAJs) are more widely supported in Public Universities in Zambia, with

the University of Zambia being the leading example. All journals published in these universities used the Open Journal System (OJS) online, which was cost-effective, increased visibility, flexible, customizable, and facilitated open access compliance.

Although the licensing models were not explicitly stated by other OAJs, the study revealed that they all utilized Creative Commons Attribution (CC BY) licenses for publishing their journals.

The study found that Creative Commons (CC) licenses were preferred and recognised among all the key informants from the public universities for OAJs publishing. The CC BY license is the standard due to its flexibility, compatibility, widespread adoption, interoperability, and maximum reuse. CC licenses facilitate open access publishing by providing a legal framework for content viewing, downloading, and distribution. OAJs offer numerous benefits to researchers and institutions, including increased visibility, impact, citations, collaboration opportunities, easy access, and reduced costs. However, some higher learning institutions still struggle with OAJs due to financial constraints, poor publishing infrastructure, collaboration and networking challenges, slow adoption, inadequate advocacy, lack of institutional support, copyright issues, etc.

Analysing the challenges affecting OAJ publishing through the lens of the TOE framework highlighted several key factors. Firstly, the availability and adequacy of funding emerge as crucial elements for the successful adoption and implementation of OAJs in public institutions. Furthermore, the framework stressed that the level of technical expertise within the workforce significantly impacts the ability to adapt and effectively utilise new technologies. According to the TOE framework, the success of OAJ adoption in public institutions is heavily influenced by organisational culture. Institutions with a culture that encourages innovation, collaboration, and risk-taking are more likely to embrace new technologies, thereby facilitating the adoption and implementation of OAJs.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.0 Overview

This chapter highlights the conclusion and recommendations of the study drawn from the specific objectives. The study aimed to investigate the emergence of OAJ publishing in public universities in Zambia. The study was guided by four specific research objectives, which were to: establish the current support levels of OAJ publishing in public universities in Zambia; determine the types of system and publishing licensing models used by OAJs in public universities in Zambia; establish possible benefits/opportunities that accrue to public universities using OAJs; and explore the possible challenges of establishing OAJ publishing in public universities in Zambia.

6.1 Current Support Levels of OAJ Publishing in Public Universities in Zambia

The study has established that public universities in Zambia are increasingly supporting OAJs to a greater extent due to institutional support towards OAJs, advocacy activities, and growing awareness of their benefits. Key stakeholders, including editors, lecturers, and researchers, have a positive attitude towards OAJs leading to greater acceptance of open access journal publishing in public institutions. The University of Zambia has shown progressively more support by listing all its OAJs on its official website and promoting OAJ publishing. Knowledge sharing among stakeholders has proven to enhance the corporate image of public universities. Furthermore, the study revealed that public universities in Zambia recognise articles published in OAJs during promotion of lecturers and researchers and encourages staff to publish their works on OA platforms. The most common finding among respondents was that the introduction and utilization of OAJs by higher learning institutions are due to management support, while those not fully utilized are due to compromised support or lack of policy, including financial constraints.

6.2 Types of Systems and Publishing Licensing Models Used by OAJs in Public Universities in Zambia.

The findings of the study established that all the journals published by the 14 key informants who are the Journal Editors were using Open Journal System (OJS) 3.1.0.1, an open source

journal management and publishing software developed, supported, and freely distributed by the Public Knowledge Project under the GNU General Public License. The study further established that the type of licensing model the universities were using to publish OAJs was the Creative Commons Licensing Model. Creative Commons Licenses allow authors to retain copyright over their work while allowing others to use and distribute their work in a variety of ways. This helps to increase the visibility and impact of research and can also provide a framework for sharing and reusing research. The study revealed that although several OAJs did not explicitly state their licensing models being used on their websites, the study revealed that they all utilized Creative Commons licenses for publishing their journals. The specific type of Creative Commons License which were being used was the Creative Commons (CC) Attribution (BY) 4.0 International License (CC-BY) which offered total freedom to the readers. This license allows others to distribute, remix, and build upon your work, even commercially, if they credit you for the original creation.

6.3 Establish Possible Benefits/Opportunities that Accrue to Public Universities Using OAJs.

The findings established that there are several benefits accrued to both academicians and universities because of OA publishing. Open access journals offer increased visibility and impact which enhances influence hence elevating the H-Index which subsequently promotes opportunities for promotions, increased citations, greater opportunities for collaboration and innovation, easy access, and reduced costs of processing and production of articles. Open access journals provide a greater global audience for research, enabling the rapid exchange of ideas among various fields. They also provide easy access to different research materials, stimulating fresh discussions and opening doors to new areas of inquiry. The other benefits of OAJs include promoting research discoveries, providing an incentive for scholarship, improving education, promoting career development, stimulating competition in publishing, providing high-quality scholarly work, and leveling the publishing playing field by reducing information poverty. They also provide avenues for publishing that are available to all levels of training and practice, helping research output reach new readers, and increasing the impact of research, which employers are increasingly encouraging. The TOE framework posits that the greater the perceived benefits by the institutions, the greater the potential for the adoption and use of OAJs.

Overall, OAJ offer numerous benefits that contribute to the advancement of research and academic excellence.

6.4 The Possible Challenges of OAJ Publishing in Public Universities in Zambia.

The study on OAJ publishing in public universities in Zambia highlighted several challenges. The main problem being faced is the lack of adequate funding to support OA publishing. Further, infrastructure challenges, such as outdated technology and limited digital storage, also pose a significant challenge. Reliable internet connectivity is another significant barrier, affecting journal management, communication, and accessibility. Lack of adequate training among editorial board members contributes to prolonged publishing time frames, reduced journal quality, and lower author satisfaction. Predatory journals pose a threat to the reliability and integrity of scholarly research, tarnishing the reputation of legitimate open-access journals. Other challenges include collaboration and networking issues, slow adoption of OAJs, inadequate advocacy, impact factors, lack of institutional support, copyright issues, strict peer review standards and procedures, and financial constraints. Institutional support is essential for OAJs to flourish, as without it, they struggle with visibility, discoverability, and marketing. Strict peer review standards and procedures are crucial for OAJs to thrive, but they can lead to frustrations and unintentional publication in predatory journals.

These challenges, categorised using the TOE framework, highlighted the need for improved resources, infrastructure, training, and collaboration to support OAJ publishing in these institutions. The findings emphasize the importance of addressing these challenges to ensure the growth and development of OAJs in Zambian public universities.

6.5 Conclusion

Public universities in Zambia are increasingly supporting OAJs due to institutional mandates, advocacy activities, and growing awareness of their benefits. Key stakeholders, including editors, lecturers, and researchers, have a positive attitude toward OAJs, leading to greater acceptance in public institutions. The University of Zambia has shown more support by listing all its OAJs on its official website and promoting OAJ publishing. The study found that the introduction and utilization of OAJs by higher learning institutions are due to management

support, while those not fully utilized are due to compromised support or lack of policy, including financial constraints. The study found that 14 key informants in public universities in Zambia published OAJs using Open Journal System (OJS) 3.1.0.1 and Creative Commons Licensing Models respectively. OAJs offer numerous benefits including increased visibility, citations, collaboration, easy access, and reduced costs of article processing and production. However, challenges such as lack of adequate funding, infrastructure issues, and reliable internet connectivity pose significant challenges. Additionally, the study highlighted the need for institutional support, copyright issues, strict peer review standards, and financial constraints to ensure the success of OAJs. The TOE framework revealed that OAJ publishing in Zambian public universities requires enhanced resources, infrastructure, training, and partnerships, underscoring the necessity of tackling these issues to foster the expansion and advancement of OAJs in these institutions.

6.6 Recommendations

Based on the results of the study, the following recommendations have been proposed for the management of public universities and the editorial teams of the journals to implement:

- i. Need for more collaborative efforts among public universities, funding agencies, and researchers, to support the growth of open access journals in Public Universities in Zambia.
- ii. Find ways and means of funding OAJs as many of them do not charge any fees to either the authors or readers. This will improve the quality of journal outputs.
- iii. There is a need for all universities to provide reliable internet connectivity to facilitate access to OAJs platforms.
- iv. There is a need to improve the capacity building of all editorial teams for the OAJs in HEIs in Zambia to improve the quality of publications. All Journal Editors should ensure that the licence model being used is put on the website for every reader and author to see.

6.7 Recommendations for Future Research

Future research could be conducted to compare the OAJ publishing in public and private universities in Zambia.

REFERENCES

- Al-Fahim, N. H., Abdulghafor, R., & Turaev, S. (2022). Determination of the TOE Factors Influencing the Adoption of Internet Banking Services on SMEs in Yemen: A Moderated Mediation Approach. *Lecture Notes in Electrical Engineering*, 881, 371–388. https://doi.org/10.1007/978-981-19-1111-8_30
- Allahar, H. & Sookram, R. (2020). “The adoption of open access journals for publishing management research: A review of the literature and the experience of the University of West Indies”. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 2020, Vol. 16, Issue 1, pp. 126-146.
- Arinto, P.B; Hodgkinson-William, C.; King, T; Cartmill, T; & Willmers, M;. (2017, March 8). *Research on Open Education Resources for Development in Global South: Project landscape*. Retrieved from <http://doi.org/10.5281/zenodo.1038980>
- Arunachalam, S. (2003). Information for research in developing countries:IT, A friend or foe? *Internationa lInformation and Library Review*, 133-147.
- Attanasio, Giorgi (2018). Connecting Africa - Internet: Africa Starts to Open Its Window to the World LINK. Retrieved Otober 10, 2021, Retrieved from <https://www.supinfo.com/articles/single/4927-internet-in-africa>
- Babbie, E. & Mouton, J. (2001). *The practice of social research (South African edition)*. Cape Town: Oxford University Press
- Baker, S., (2020). Assessing Open Source Journal Management Software. *Journal of Electronic Publishing*, 23(1). DOI: <https://doi.org/10.3998/3336451.0023.101>
- Bawack, R. & Nkolo, P., (2018). Open access movement: reception and acceptance by academic libraries in developing countries. *Library Philosophy and Practice*, pp.0_1-24.
- Beall, J., (2017). What I learned from predatory publishers. *Biochemia medica*, 27(2), pp.273-278.
- Benjamins, S., Pol, R.A., de Meijer, V.E. & Haring, M.P., 2021. Peer review during demanding times: maintain rigorous standards. *Scientometrics*, 126(7), pp.6115-6117.

- Björk, B., Solomon, D. (2012). Pricing principles used by Scholarly Open Access Publishers. Retrieved December 29, 2019, from <https://pdfs.semanticscholar.org/1c4d/dff605f922fe0384696511d0269521c93346.pdf>
- Björk, B.-C., & Solomon, D. (2012). Open access versus subscription journals: A comparison of scientific impact. *BMC Medicine*, 10(1), 73.
- Borteye, W. & Dadzie, P., (201). Awareness and use of open access journals by graduate students of the University of Ghana. *Innovation: journal of appropriate librarianship and information work in Southern Africa*, 2015(50), pp.44-62.
- Bosah, G., Okeji, C.C. & Baro, E.E., (2017). Perceptions, preferences of scholarly publishing in open access journals: a survey of academic librarians in Africa. *Digital Library Perspectives*, 33(4), pp.378-394.
- Brookes, O.(2019) Retrieved from <http://brookesoa.blog/open-access/the-different-models-of-open-access/>(accessed 20 October 2019).
- Budapest Open Access Initiative (2001), “Budapest open access initiative”. Available at: www.budapestopenaccessinitiative.org/read (accessed 14 June 2020).
- Burchardt, J. (2014). “Researchers outside APC-financed open access: implications for scholars without a paying institution”. *Sage Open*, October-December, pp. 1-11.
- Burns, N. & Grove, S.K., (2010). Understanding nursing research-eBook: Building an evidence-based practice. Elsevier Health Sciences.
- Bwalya, T. & Akakandelwa, A. (2021). Open Access and the Future of Scholarly Communication in Sub-Saharan Africa. *Open Access Implications for Sustainable Social, Political, and Economic Development*, p 16. DOI: 10.4018/978-1-7998-5018-2.ch011
- Bwalya, T., Mkulama, A & Mwalimu, E. C. (2019). ‘Perception of Lecturers and Researchers Towards Open Access Journals: Case Study of the University of Zambia’. *Digital Technologies for Information and Knowledge Management*. The Technical University of Kenya.
- Carroll, M.W. (2013), “Creative commons and the openness of open access”, *The New England Journal of Medicine*, Vol. 368 No. 9, pp. 789-791.

- Casey, D., & Murphy, K. (2009). *Issues in using methodological triangulation in research*. *Nurse Researcher*, 16(4), 40–55. doi:10.7748/nr2009.07.16.4.40.c7160
- Chan L, Kirsop B, Costa S, & Arunachalam S (2005) Improving access to research literature in developing countries: challenges and opportunities provided by open access. *Paper presented at the World Library and Information Congress: 71st IFLA General Conference and Council*, Oslo. Retrieved November 12, 2010, from <http://archive.ifla.org/IV/ifla71/papers/150e-Chan.pdf>
- Chan, L. & Costa, S. (2016), "Participation in the global knowledge commons: Challenges and opportunities for research dissemination in developing countries", *New Library World*, Vol. 106 No. 3/4, pp. 141-163
- Chau, P. Y., & Tam, K. Y. (2000). Organizational adoption of open systems: a ‘technology-push, need-pull’ perspective. *Information & Management*, 37(5), 229-239.
- Chen, F. L., Wrynn, P., & Rieke, J. L. (2001). Electronic journal access: how does it affect the print subscription price?. *Bulletin of the Medical Library Association*, 89(4), 363.
- Chewe, Paillet; Zulu, Zachary; Sakala, Gelvazio; Chitumbo, Eness M. M.; Makondo, Francina N. S.; & Musonda, Yolam (2021). Open Access Scholarly Communication Practices at the University of Zambia. In: *Library Philosophy & Practice*, 13/12/2021 Library, Information Science & Technology Abstracts
- Chilimo, W., Adem, A., Otieno, A.N.W. & Maina, M., (2017). Adoption of open access publishing by academic researchers in Kenya. *Journal of Scholarly Publishing*, 49(1), pp.103-122.
- Coleman, A & Roback, J. (2005), Open access federation for library and information science, *D-Lib Magazine*, Vol. 11 No. 12 pp.1-16, available at: www.dlib.org/dlib/december05/colman/12coleman.html (accessed 11 September 2021)
- Creative Commons. (2013). *Considerations for licensor and licensees*. Retrieved from http://wiki.creativecommons.org/wiki/consideration_for_licensors_and_licensees
- Creative Commons. (2015, November 23). *About the license*. Retrieved from <http://creativecommons.org/licenses/>

- Crow, J. (2008). *Open Access and Scholarly Communication*. (Accessed 2008, March 29).
- Cruickshank, P. (2016). Looking for a theory to explain the impact of security on technology adoption decisions. <https://spartakan.wordpress.com/2016/02/26/information-security-technology-adoption-decisions-toe>.
- David, P., & Foray, D. (2002). An introduction to the economy of the knowledge society. *International Social Sciences Journal*, 9.
- Dinev, T., Hu, Q. & Goo, J., (2005) December. User Behavior Toward Preventive Technologies—Examining Cross-Cultural Differences Between The United States And South Korea. In *Proceedings of the 13th Annual Cross-Cultural Research in Information Systems Conference (CCRIS 2005), Las Vegas, USA*.
- Directory of Open Access Journals. (2022). About DOAJ.
- DOAJ. (2020). Directory of Open Access Journals. Accessed June 3rd, 2020. <http://doaj.org>
- DOAJ.(2024) Directory of Open Access Journals. Accessed February 23rd, 2024. <http://doaj.org>
- Dulle, F., Minish-Majanja, T. M., & Cloete, L. (2010). Factors influencing the adoption of open access scholarly communication in Tanzanian public universities. World Library and Information Congress: 76th IFLA General Conference and Assembly, 10-15 August 2010, Gothenburg, Sweden <http://www.ifla.org/en/ifla76>
- Dulle, F.W. & Minishi-Majanja, M.K., (2009). Researchers' perspectives on open access scholarly communication in Tanzanian public universities. *South African Journal of Information Management*, 11(4), pp.1-14.
- Duranceau, E.F. & Kriegsman, S.A., (2013). Implementing open access policies using institutional repositories.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- Eve, M.P. & Byers, A. (2018). "Janeway: a Scholarly Communications Platform." *Insights* 31: 15. <http://doi.org/10.1629/uksg.396>
- Eysenbach, G. (2006). Citation advantage of open-access articles. *PLoS Biology*, 4(5), e157.

- Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research. In N. Denzin & Harnard, S., & Brody, J. (2004, June 10). *Comparing the impact of open Access (OA) vs Non-AO Articles in the same journals*. Retrieved from D-Lib Magazine: <http://www.dlib.org/dlib/june04/harnard/06harnard.html>.
- Herb, U., (2010). Sociological implications of scientific publishing: Open access, science, society, democracy and the digital divide.
- Higher Education Act of 2013. <https://www.parliament.gov.zm> > documents > acts/education acts.
- Higher Education Authority (2021) *Public Higher Education Institutions* Accessed 11th September 2021. <https://hea.org.zm/heis-2/public-heis/>
- Hirtle, P.B., (2019). Copyright term and the public domain in the United States.
- Hrynaszkiewicz, I., & Cockerill, M.J. (2012). Open by default: a proposed copyright license and waiver agreement for open access research and data in peer-reviewed journals. *BMC Research Notes*, 5, 494 - 494.
- Hungwa, S., Nwachukwu Victor N & Ode Alice Ogwo, S. H. P (2020). Use of open access journals for improved research output by academic librarians in universities in North Central Nigeria. *Covenant Journal of Library and Information Science*. Available at: <https://journals.covenantuniversity.edu.ng/index.php/cjlis/article/view/2146> (Accessed: 25 February 2024).
- Idris, A., Edwards, H., & McDonald, S. (2017) E-commerce adoption in Developing Countries SMEs: What Do the Prevailing Theoretical Models Offer Us? International Conference on E-commerce, ICoEC 2017 Putrajaya Malaysia. Available at: <https://core.ac.uk/download/pdf/110690991.pdf>
- Ivwithreghweta, O., & Onoriode, O. K. (2012). Use of open access journals by lecturers at Western Delta University, Oghara, Nigeria. *Library Philosophy and Practice*. <https://link.gale.com/apps/doc/A292873179/AONE?u=anon~9bc8de3d&sid=googleScholar&xid=820c0900>

- Jain, P. (2012). Promoting open access to research in academic libraries. *Library Philosophy and Practice (e-journal)*. 737. Retrieved January 2, 2022, from <https://digitalcommons.unl.edu/libphilprac/737>
- Kamberidou, I., & Pascall, N. (2019). The digital skills crisis: Engendering technology—empowering women in cyberspace. *European Journal of Social Sciences Studies*.
- Kassahun, Kelemwork & Nsala, Chatiwa (2015). The awareness of academic librarians towards Open Access resources to support reference services: A case of private institutions of higher learning in Gaborone, Botswana. *Paper presented at: IFLA WLIC 2015 - Cape Town, South Africa in Session S12 - Satellite Meeting: Reference and Information Services*.
- Kim, M. (2005). An Analysis of the Creative Commons as a Solution for Copyright Protection in the Digital Era. *Unpublished doctoral dissertation*, University of North Carolina at Chapel Hill.
- Kombo, D.K. & Tromp, D.L.A., (2006). Project and thesis writing: An introduction. *Pauline's Publications Africa*.
- Kozak, M., & Hartley, J. (2018). Publication fees for open access journals: Different disciplines—different methods. Retrieved January 20, 2020 from <https://onlinelibrary.wiley.com/doi/abs/10.1002/asi.22972>
- Kubra, S. (2020). Indian student's awareness and need for help to use open access journals. *International Journal of Advance Research, Ideas and Innovations in Technology*, 6, 165-167.
- Kumar, M.A. & Reddy, V.P., (2014). Use of e-journals by research scholars in university libraries in Andhra Pradesh. *Library Philosophy and Practice (e-journal)*, 1086.
- Laakso, M., & Björk, B. (2012). Anatomy of open access publishing: a study of longitudinal development and internal structure. Retrieved January 29, 2020 from <https://bmcmmedicine.biomedcentral.com/articles/10.1186/1741-7015-10-124>

- Langham-Putrow, A., Bakker, C., & Riegelman, A. (2021). Is the open access citation advantage real? A systematic review of the citation of open access and subscription-based articles. *PLoS ONE*, 16(6), e0253129.
- Lewis, D. W. (2008). Library budgets, open access, and the future scholarly communication: Transformations in academic publishing. *Journal of the first year experience and students in transition*.
- Lincoln, Y.S. & Guba, E.G., 1985. *Naturalistic inquiry*. Sage.
- Lubasi, F., Ndebele, N.N. & Mayaka, E.D., 2018. *Barriers to Open Access Publishing at the University of Zambia*. The University of Zambia.
- Makoni, M. (2021) New continental platform for open access publishing.
- Mammo, Y., & Ngulube, P. (2015). Academics' use and attitude towards open access in selected higher learning institutions of Ethiopia. *Information Development*, 31(1), 13-26. <https://doi.org/10.1177/0266666913500977>.
- Margoni, T & Peters, D. (2016). Creative Commons Licenses: Empowering Open Access, Editorial Office News EON. *Electronic Journal* 9(2) DOI:10.2139/ssrn.2746044
- Maxwell, J. (2012). *A realistic approach for qualitative research*. Los Angeles: Sage Publications.
- Ministry of Higher Education. (2023). *Higher Education Amendment Act No. 23*. Government Printers.
- Msagati, N., (2014). Awareness and use of scholarly electronic journals by members of academic staff: A case study of Dar es Salaam University College of Education (DUCE). *Library philosophy and practice*, p.0_1.
- Mulligan, Robert F. (2015). "Publication Activity in Austrian Journals 2001– 2010." *Quarterly Journal of Austrian Economics* 18, no. 3 (Fall): 339–67.
- Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball Sampling: A Purposeful Method of Sampling in Qualitative Research.

- Nazim, M. & Zia, S., (2019). Acceptance and adoption of open access publishing by researchers in India. *Global Knowledge, Memory and Communication*, 68(1/2), pp.148-158.
- Neuman, D., (2014). Qualitative research in educational communications and technology: A brief introduction to principles and procedures. *Journal of Computing in Higher Education*, 26, pp.69- 86.
- Ngulube, P. (2007). The nature and accessibility of e-government in sub-Saharan Africa. *International Review of Information Ethics*, 7(9), 1–13.
- Norris, M., Oppenheim, C., & Rowland, F. (2014, April 10). *Onlinelibrary.wiley.com*. Retrieved June 18, 2020, from *Onlinelibrary.wiley.com*: <http://onlinelibrary.wiley.com/doi/10.1002/asi.2089/pdf>.
- Obuh, A.O. & Bozimo, D.O., (2012). Awareness and use of open access scholarly publications by LIS lecturers in Southern Nigeria. *International Journal of Library Science*, 1(4), pp.54-60.
- of Open Access Journal Publishing from 1993 to 2009*. PLoS ONE 6(6): e20961. <https://doi.org/10.1371/journal.pone.0020961>
- Ogbomo, M.O. & Ivwighreghweta, O., (2013). Awareness, Attitudes, and Use of Open Access Journals by Master's Degree Students of the Department of Library, Archival, and Information Studies, University of Ibadan, Nigeria. *PNLA Quarterly*, 77(2).
- Okoye, & Ejikeme, (2010). Open access, institutional repositories and scholarly publishing: The role of librarians in South East Nigeria. *Journal of Nigeria Library Association: 48th National Conferences*.
- Open Access publishing (2024). Cambridge University Press <https://www.cambridge.org/core/open-research/open-access/benefits-of-open-access#>
- OpenEdition. (2019). OpenEdition. Accessed March 1st, 2019. <http://www.openedition.org/>
- Polit, D.F., & Beck, C.T. (2012). *Nursing research: Generating and assessing evidence*.

- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*, 5.
- Riviere, J. (2014). "Publication de Lodel 1.0 et OTX 1.0!" Lodel. March 27, 2014. <http://lodel.hypotheses.org/377>
- Samuels, R. G., & Griffy, H. (2012). Evaluating Open Source Software for Use in Library Initiatives: a case study involving electronic publishing. *portal: Libraries and the Academy*, 12(1), 41-62.
- Shamseer, L., Moher, D., Maduekwe, O., Turner, L., Barbour, V., Burch, R., Clark, J., Galipeau, J., Roberts, J., & Shea, B. J. (2017). Potential predatory and legitimate biomedical journals: can you tell the difference? *A cross-sectional comparison. BMC Medicine*, 15(1), 28.
- Shirko, S. D. (2021) A Framework for the Usage of Open Access Journals *.Department of Information Systems , Wolaita Sodo University, Ethiopia* Vol. 11 Issue No. 02.
- Sileyew, K. J. (2010) Research Design and Methodology. Cyberspace. IntechOpen. <https://doi.org/10.5772/incheopen.85731>
- Solomon, D., & Björk, B.-C. (2012). A study of open access journals using article processing charges. *Journal of the American Society for Information Science and Technology*, 63(8), 1485–1495.
- SPARC. (2015). "Journal management systems." SPARC. Last Updated November, 2015. <https://web.archive.org/web/20150225180647/http://www.sparc.arl.org/resources/publishers/journal-management>.
- Suber, P. (2005, April 19). Removing the barriers to research: An Introduction to open access for Librarians. *College and Research Libraries News*, pp. 92-94.
- Suber, P. (2006). An introduction to open access. Available: <http://www.blurtit.com/q72848.html>.
- Suber, P. (2012), "Open Access", Cambridge, USA, 255.
- Suber, P. (2015), "Open Access Overview", Retrieved January 06, 2017, earlham.edu/n/peters/overview.htm.

- Suber, P. (2017). Open Access Overview: Focusing on Open Access to Peer-Reviewed Research Articles and their Preprints. Retrieved from <http://www.earlham.edu/~peters/fos/overview.htm>
- Tandi Lwoga, E., & Questier, F. (2014). Faculty adoption and usage behaviour of open access scholarly communication in health science universities. *New Library World*, 115(3/4), 116-139.
- Tempest, D. (2013). Open access in Africa — changes and challenges. Retrieved December 12, 2021 from <https://www.elsevier.com/connect/open-access-in-africachanges-and-challenges>.
- Tennant, J. P., Waldner, F., Jacques, D. C., Masuzzo, P., Collister, L. B., & Hartgerink, C. H. (2016). The academic, economic and societal impacts of Open Access: An evidence-based review. *F1000Research*, 5, 632.
- Tenopir, C., & King, D. (2000). *Towards electronic journals: realities for scientists, Librarians and publishers*. Washington D.C.: Special Libraries Association.
- Tobi, H. (2018). Research Design: the methodology for interdisciplinary research framework. *Quality and quantity*, 52(3), 1209-1225. <http://doi.org/10.1007/s11135-017-0513-8>
- Tornatzky, L. & Fleischer, M. (1990) *The process of technology innovation*, Lexington, MA, Lexington Books.
- UNESCO. (2015). Paris: United Nations Educational, Scientific and Cultural organisation.
- Utulu, S.C.A. & Bolarinwa, O., (2009). Open access initiatives adoption by Nigerian academics. *Library review*, 58(9), pp.660-669.
- Velmurugan, C. (2011). Open access resources and its significance: An introduction. *Proceeding of National Conference on Networking of Libraries, Resources, technologies* (pp. 418-420). Kovilpatti: SALIS.
- Velterop, J. J. (2005). *Open Society Institute*. New York: WIPO.

- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D., 2003. User acceptance of information technology: Toward a unified view. *MIS quarterly*, pp.425-478.
- Vogel, G. (2011). Open access gains support; fees and journal quality deter submissions. *Science* Science, New Series, Vol. 331, No. 6015, 331(6015), 273.
- Ware, M. (2009). The STM report: An overview of scientific and scholarly journal publishing. *International Association of Scientific, Technical and Medical Publishers*.
- Wellcome Trust. (2008, May 13). *Author's guide and FAQ*. Retrieved from [http://www.welcome.ac.uk/About-us/Policy/Spotlight-issues/Openaccess/Guide and FAQ/WTD018855](http://www.welcome.ac.uk/About-us/Policy/Spotlight-issues/Openaccess/Guide%20and%20FAQ/WTD018855)
- Willinsky, J. (2003). *The access principle: the case for open access to research and scholarship*. Massachusetts: MIT Press.
- Willinsky, J. (2005), "Open Journal Systems: An example of open source software for journal management and publishing", *Library Hi Tech*, Vol. 23 No. 4, pp. 504-519.
- Willinsky, J., (2018). Scholarly associations and the economic viability of open access publishing. *Health Sciences: An OJS 3.4 Theme Demo*, 1(2).
- World Intellectual Property Organisation. (1995). *Berne Convention for the protection of Literary and artistic works: paris act of July 24 1971, as amended on September 28 1979*. *World Intellectual Property Organisation*. Geneva: WIPO.
- Yang, Z. Y., & Li, Y. (2015). University faculty awareness and attitudes towards open access publishing and the institutional repository: *A case study*. *Journal of Librarianship and Scholarly Communication* 3(1), eP1210. <http://dx.doi.org/10.7710/2162-3309.1210>
- Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. *Information systems research*, 16(1), 61-84.

APPENDICES

Appendix 1: INTERVIEW GUIDE

INTERVIEW GUIDE ON THE EMERGENCE OF OPEN ACCESS JOURNALS IN PUBLIC UNIVERSITIES IN ZAMBIA



**THE UNIVERSITY OF ZAMBIA
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

Dear Respondent,

I am a post graduate student at the University of Zambia (UNZA) pursuing a Master’s Degree in Library and Information Science. I am currently conducting a research study on “*The Emergence of Open Access Journals in Public Universities in Zambia*”.

You have been purposively selected to participate in this study. Please note that this is a purely academic study and the information that will be collected will not be used against you in anyway, therefore feel free to answer the questions.

Be assured that the responses you give will be treated with utmost confidentiality and will be used only for the purposes of this research.

Thank you very much for your cooperation

Elizabeth Mvula

Contact No. 0977489220

Date.....

SECTION A

Background Information

1. Institution Name:.....

2. Gender:

Male

Female

3. Age Group:

Below 30 years

30-40 years

41-50 years

51-60 years

61- 70 years

71-Above years

4. Highest level of education attained.....

5. Job Title.....

6. How long have you been working with your current institution?
.....

SECTION B:

Support Levels of Open Access Journal Publishing and Models used in Public Universities in Zambia

7. Are you aware of the existence of open access journals (OAJs)?
.....

8. If YES, does your institution allow staff to publish works in an open access publication?
.....

9. If YES, please explain to what extent does your institution support OAJ publishing?
.....
.....

10. Are OAJ publications acceptable for consideration of tenure and/or promotion in your institution?
.....

11. Is your institution running any open access journal publishing system?
.....

If NO skip to question 20

12. If YES, what is the name of the journal?
.....

13. Further, explain the name of the system in use and when it was installed?
.....

14. Kindly, explain the details regarding who is hosting the system for you?
.....

15. Explain the publishing cycle of your open access journal?

.....
16. Does your institution use any licensing model to publish OAJs?
.....

17. If YES, what type of licensing model does your institution use to publish OAJs?
.....
.....

18. Is the licensing model clearly indicated/linked on the site of your OAJs?
.....

19. What factors influenced the adoption of the type of licensing model used in publishing OAJs by your institution?
.....
.....

(Questions 20,21and 22 are not applicable for those having OAJs)

20. Since you do not have OAJ, do you have any intentions of launching an OAJ?
.....

21. If YES, when do you intend to launch an OAJ?
.....
.....

22. If NO, what challenges does your institution face which hinders the establishment of OAJ publishing system in your institution?
.....
.....
.....
.....

SECTION C.

Benefits and challenges of using open access journal publishing in public universities in Zambia.

23. What would you describe as the benefits/opportunities derived from using OAJ for your institution?

.....
.....
.....
.....

24. Does your institution face any challenges with OAJ Publishing?

.....

25. If Yes, What factors inhibit your institution to disseminate publications in OAJs?

.....
.....
.....
.....
.....

26. As an individual, what sort of challenges do you encounter while facilitating OAJ publishing?

.....
.....
.....
.....
.....
.....
.....

27. In your opinion, how can these challenges (if any) be overcome?

.....
.....
.....
.....
.....

End of Interview

THANK YOU FOR YOUR TIME AND PARTICIPATION IN THIS STUDY

Appendix 2: OBSERVATION GUIDE

**OBSERVATION GUIDE ON THE EMERGENCE OF OPEN ACCESS
JOURNALS IN PUBLIC UNIVERSITIES IN ZAMBIA.**

1. Institution Name

.....

2. Name of OAJ/s

.....

3. URL of the Journal

.....

4. Name of the Host of the Journal

.....

5. Frequency of publication of OAJ

.....
6. Presence of any licensing model
.....

7. Type of system and license in use
.....

8. License if properly linked on the site of OAJ
.....

9. Presence of other publishing avenues
.....

10. Online visibility of the journal
.....

End

Appendix 3: APPROVAL OF STUDY



THE UNIVERSITY OF ZAMBIA
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES

Great East Road Campus | P.O. Box 32379 | Lusaka10101 | Tel: +260-211-290 258/291 777 Fax: (+260)-211-290 258/253 952 | E-mail: director.drgrs@unza.zm | Website: www.unza.zm

APPROVAL OF STUDY

IORG No. 0005376

HSSREC IRB No. 00006464

REF NO. HSSREC:2022-MAY-001

6th July, 2022

Ms Elizabeth Mvula
The University of Zambia
School of Education
P.O. Box 32379
LUSAKA

Dear Ms Mvula

RE: “AN INVESTIGATION INTO THE EMERGENCE OF OPEN ACCESS JOURNALS IN PUBLIC UNIVERSITIES IN ZAMBIA”

Reference is made to your submission of the protocol captioned above.

The HSSREC resolved to approve this study and your participation as Principal Investigator for a period of one year.

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

REVIEW TYPE	ORDINARY REVIEW	APPROVAL NO. HSSREC:2022-MAY-001
Approval and Expiry Date	Approval Date: 6 th July, 2022	Expiry Date: 5 th July, 2023
Protocol Version and Date	Version - Nil.	6 th July, 2022
Information Sheet, Consent Forms and Dates	☐ English.	To be provided
Consent form ID and Date	Version - Nil	To be provided
Recruitment Materials	Nil	Nil
Other Study Documents	- Questionnaire - Interview Guide	
Number of Participants Approved for Study		

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to HSSREC within 5 days.
- All protocol modifications must be approved by HSSREC prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to HSSREC within 5 working days.
- All recruitment materials must be approved by HSSREC prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. HSSREC will only approve a study for a period of 12 months.
- It is the responsibility of the PI to renew his/her ethics approval through a renewal application to HSSREC.
- Where the PI desires to extend the study after expiry of the study period, documents for study extension must be received by HSSREC at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Documents received within 30 days after expiry will be labelled "late

submissions” and will incur a penalty fee of K500.00. No study shall be renewed whose documents are submitted for renewal 30 days after expiry of the certificate.

- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee as an IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- When closing a project, the PI is responsible for notifying, in writing or using the Research Ethics and Management Online (REMO), both HSSREC and the National Health Research Authority (NHRA) when ethics certification is no longer required for a project.
- In order to close an approved study, a Closing Report must be submitted in writing or through the REMO system. A Closing Report should be filed when data collection has ended and the study team will no longer be using human participants or animals or secondary data or have any direct or indirect contact with the research participants or animals for the study.
- Filing a closing report (rather than just letting your approval lapse) is important as it assists HSSREC in efficiently tracking and reporting on projects. Note that some funding agencies and sponsors require a notice of closure from the IRB which had approved the study and can only be generated after the Closing Report has been filed.
- A reprint of this letter shall be done at a fee.
- All protocol modifications must be approved by HSSREC by way of an application for an amendment prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address or methodology and methods. Many modifications entail minimal risk adjustments to a protocol and/or consent form and can be made on an Expedited basis (via the IRB Chair). Some examples are: format changes, correcting spelling errors, adding key personnel, minor changes to questionnaires, recruiting and changes, and so forth. Other, more substantive changes, especially those that may alter the risk-benefit ratio, may require Full Board review. In all cases, except where noted above regarding subject safety, any changes to any protocol document or procedure must first be approved by HSSREC before they can be implemented.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of HSSREC, we would like to wish you all the success as you carry out your study.

Yours faithfully,



Dr. J. I. Ziwa

DR. J. I. Ziwa

ACTING CHAIRPERSON

THE UNIVERSITY OF ZAMBIA HUMANITIES AND

SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE - IRB

cc: Director, Directorate of Research and Graduate Studies
Assistant Director (Research), Directorate of Research and Graduate Studies
Assistant Registrar (Research), Directorate of Research and Graduate Studies