DIGITIZATION OF ACADEMIC LIBRARY MATERIALS IN ZANZIBAR: THE CASE OF THE STATE UNIVERSITY OF ZANZIBAR AND ABDULRAHMAN AL-SUMAIT UNIVERSITY

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CERTIFICATION

The undersigned certifies he has read and hereby recommends for the acceptance by The Open University of Tanzania a dissertation entitled; "**Digitization of Academic Library Materials in Zanzibar: A Case of the State University of Zanzibar and Abdulrahman Al-Sumait University"** in partial fulfillment of the requirement for the award of the degree of Master of Library and Information Management (MLIM).

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Dr. Henry L. Mambo

(Supervisor)

……

Date

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DECLARATION

I, **Abubakar M. Salum,** do hereby declare that, this dissertation is my own original work. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfilment of the requirements for the Degree of Master in Library and Information Management.

……..
Signature

05/10/2024

……
Date

DEDICATION

This work is dedicated to my beloved wife, Mrs. Abubakar. I would also like to dedicate this work to my lovely sons and my daughters for love and support which enabled me to accomplish my studies. May Almighty Allah reward them. Amiin.

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ABSTRACT

The study investigated digitization of academic library materials at the State University of Zanzibar (SUZA) and SUMAIT University, with a focus on performance, types of materials digitized, and challenges faced. It assessed how effectively digitization initiatives have been implemented in these institutions and their impact on accessibility and resource management. A mixed-method approach was employed, combining surveys, interviews and questionnaire with librarians, IT personnel, academic staff, and students. The findings revealed that while both universities had made significant progress in digitizing books, journals, and theses, they still faced challenges related to limited funding, outdated infrastructure, and insufficient staff training. Additionally, technical issues such as software incompatibility and storage limitations were identified as barriers to successful digitization. The study recommends that addressing these challenges through increased investment, staff development, and enhanced technical support is essential for improving the digitization process and ensuring sustainable access to academic resources in Zanzibar.

Keywords: *Digitization, Academic Libraries, Zanzibar, SUZA, SUMAIT, Library Materials.*

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LIST OF ABRAVIATION

ARL	Association of Research Libraries
ARPA	Advance Research Project Agency
CS	Computer Science
DECOMATE	Delivery of Copyright Materials Electronic
DL	Digital Library
FGD	Focus Group Discussion
FLA	Finnish Library Association
ICT	Information and Communication Technology
ISBN	International Standard Book Number
LIS	Library and Information Science
NASA	National Aeronautics Space Administration
NGOs	None Government Organizations
OPAC	Online Public Access Catalogue
OUT	The Open University of Tanzania
SUMAIT	Abdulrahman Al-Summit University
SUZA	The State University of Zanzibar
TLSB	Tanzania Library Service Board
UCEZ	University College of Education Zanzibar
UNESCO	United National Educational Scientific and Cultural Organization
ZNA	Zanzibar National Archives
ZU	Zanzibar University

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

This chapter presents and discusses the background of study. It consists of seven sections namely; background to the study, statement of the problem, general objective of the study, specific objectives of the study, research questions, scope of study and significance of the study.

The development of ICT has impacted all spheres of life including libraries. As such, the evolution of information and communication technologies (ICT) has resulted in a shift in the landscape of which the information is generated and accessed. Before their revolution, which was brought by technological developments, the medium of communication was to a large extent available in the printed format Noh(2023). In order to preserve, manage, and disseminate information to users, information that is created and born in printed format is now digitized. Digitization is a process of transforming information into a digital (i.e. computer-readable) format and the representation of an object, image, sound, document, or signal, typically an analog signal achieved by creating a series of integers that describe a discrete set of points or samples is the end result (Moruf, et al., 2024). This process is in line with the 3rd industrial revolution which aimed at helping users by meeting their needs and requirements for managing, accessing, storing, and manipulating the variety of information kept in the library's "holdings" collection (Panda & Kaur, 2024).

Digitization of materials in academic libraries has become a cornerstone of modern education and research, ensuring greater access to knowledge, preservation of

materials, and the promotion of global collaboration. This trend began in the late 20th century and has rapidly expanded across continents, from the United States and Europe to Asia and Africa. The digitization of library materials includes books, manuscripts, journals, and multimedia content, providing global accessibility while preserving original documents. Each region and university plays a crucial role in promoting this digital transformation to meet the needs of an increasingly interconnected academic community.

In the United States universities like Harvard University and Stanford University have led in the digitization initiatives. Harvard’s Digital Collections include millions of rare manuscripts, maps, and research papers accessible globally (Parker, 2024). Meanwhile, Stanford's Digital Repository has enhanced research by providing access to scientific literature and journals, particularly in STEM fields (Johnson, 2024). These institutions exemplify how American universities utilize technology to improve research output and preserve valuable scholarly resources for future generations.

European universities have also made significant contributions to digitization. The British Library, affiliated with many universities in the UK, has digitized over 100 million pages of books, manuscripts, and journals, expanding access to historical and cultural materials (Smith, 2024). Similarly, Germany’s Max Planck Digital Library focuses on open access to scientific papers, providing free, global access to breakthrough research across multiple disciplines Weber (2024). Both institutions are key examples of how European academic libraries support open access and scholarly communication through digitization.

In Asia, initiatives like the National Digital Library of India (NDLI), spearheaded by institutions such as IIT Kharagpur, offer millions of digitized resources in multiple languages, promoting equitable access to educational materials across India Gupta (2024). Additionally, Kyoto University in Japan has digitized culturally significant manuscripts and scrolls, preserving historical documents while making them available to scholars globally (Noh,2024). These examples show how Asian universities are focusing on inclusivity and cultural preservation in their digitization materials efforts.

In Africa though facing financial and technological challenges, is making strides in materials digitization. The University of Cape Town in South Africa has launched large-scale digitization materials plans to preserve valuable archives and make them accessible online, supporting both local and global research (Zulu, 2024). In East Africa, the digitization of academic libraries is gaining momentum as universities recognize the importance of preserving knowledge and increasing accessibility. Materials digitization enables universities to store and share vast amounts of educational resources, including research papers, journals, and textbooks.

For many institutions, the transition to digital platforms addresses challenges related to limited physical space, the preservation of fragile materials, and the need for greater accessibility, especially in remote areas. This shift is in line with global trends in education, where technology is playing a crucial role in enhancing learning environments. Makerere University in Uganda has been digitizing local and regional research materials, making them available to scholars across the continent, thereby promoting indigenous knowledge (Mugisha, 2024). These initiatives demonstrate the

growing role of African academic libraries in the global digital landscape.

In Zanzibar, universities like the State University of Zanzibar (SUZA) and SUMAIT University have embraced materials digitization to meet the growing demands of students and researchers. SUZA has been working on digitizing its collection of local and international research papers, contributing to academic excellence and ensuring that researchers across Zanzibar and beyond have access to such resources (Ali,2024). Similarly, SUMAIT University is in the process of developing a digital repository aimed at storing dissertations and theses produced by students. This initiative helps student's access academic materials remotely, thus fostering greater academic collaboration and learning (Hassan, 2024).

1.2 Statement of the Problem

The digitization of academic library materials in universities across Europe and the USA has significantly advanced the accessibility of knowledge. Institutions such as; Harvard University and Oxford University have digitized a wide range of materials, including books, manuscripts, research articles, and rare collections, making them accessible to a global audience. These efforts have enabled researchers, students, and the public to access information remotely, eliminating geographic and physical barriers. However, challenges remain in the areas of copyright management, high costs of digitizing fragile materials, and maintaining digital archives. Others are, the gap between digitizing contemporary collections and historical resources which remains an issue, with many older, valuable materials still inaccessible in digital format (Ezema & Eze, 2024).

In Asia, universities such as the University of Tokyo, Seoul National University, and Peking University have undertaken extensive digitization efforts. These institutions have digitized academic journals, research papers, historical documents, and special collections. Despite the notable progress in materials digitization, challenges such as; language barriers, high costs of digitization technology, and lack of standardization in metadata and access protocols have been reported (Kim, 2024). Additionally, the digital divide persists between well-funded institutions and those with limited financial and technological resources, creating inequalities in access to digitized materials within the Universities.

African universities are gradually embracing digitization, with countries like South Africa and Nigeria leading the way. Institutions such as the University of Pretoria have digitized theses, dissertations, and research publications, offering open access to these materials. Despite these efforts, African universities face major challenges, including inadequate infrastructure, lack of funding, and limited technical expertise Isibika& Noh (2024). Moreover, the absence of comprehensive digitization policies and intellectual property frameworks further hinders progress. These gaps continue to limit the impact of digitization materials, especially in less economically developed areas where resources for digitization are scarce.

In East Africa, universities like SUZA and SUMAIT in Zanzibar have started to digitize academic materials, including academic theses and some journals. However, the digitization efforts in these institutions face substantial challenges. Limited financial resources, inadequate information and communication technology (ICT) infrastructure, and a lack of trained personnel are major obstacles Pessa&Eze(2024).

Furthermore, the absence of standardized policies guiding digitization has led to fragmented efforts, making it difficult to implement large-scale digitization missions. This gap in digitization efforts has hindered the ability of East African academic libraries to provide equal access to digital resources, both locally and globally.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to assess digitization of academic library materials in Zanzibar with reference to SUZA and SUMAIT Universities.

1.3.2 Specific Objective

Based on the general objective, the study was guided by the following specific objectives:

i. To determine the performance of digitization materials in academic libraries;
ii. To identify types of materials digitized in academic libraries; and
iii. To identify the challenges faced digitization materials in academic libraries.

1.3.3 Research Questions

The study was guided by the following research questions:

i. What was the performance of digitized materials in academic libraries?
ii. What types of materials were currently being digitized in academic libraries?
iii. What challenges were currently being faced in the Materials digitization in academic libraries?

1.3.4 Significance of the Study

The significance of this study on the digitization of academic library materials in Zanzibar universities is to enhance access to educational resources for students and

staff, particularly in remote areas. It would help preserve valuable academic documents and rare materials that may deteriorate over time. Digitization can improve the efficiency of library services, allowing quick retrieval and sharing of information. This study also addressed challenges faced by Zanzibar universities in digitization, offering insights to improve their libraries' functionality, support e-learning, and promote academic collaboration both locally and internationally.

1.3.5 Scope of the Study

Thhis study focused on the digitization of academic library materials in Zanzibar's Universities, specifically SUZA and SUMAIT. It explored the current state of digitization materials efforts, the types of materials being digitized such as; books, journals, and theses, and the technology used in these processes. The study examined the roles of librarians, IT personnel, academic staff, and students in the digitization process. It also assessed the performance and effectiveness of digitized resources in improving access to educational materials and supporting academic activities and also the study identified the challenges faced during digitization, including technical, financial, and infrastructural limitations, and proposed potential solutions. The study involved questionnaire and interviews with key stakeholders in these universities to gather relevant data for analysis.

1.4 Limitations of Study

The limitations of the study were primarily related to time constraints and resource availability. Due to limited time, the study could not cover all academic libraries in Zanzibar, instead focusing only on SUZA and SUMAIT Universities. There were also challenges in accessing certain data due to incomplete or outdated records on

digitization materials efforts. Financial limitations affected the ability to acquire advanced tools and software needed for in-depth analysis of the digitization processes. Additionally, technical difficulties, such as unstable internet connections and lack of proper digitization equipment, impacted the study. Some respondents, including librarians and IT personnel, were unavailable for interviews or delayed in providing responses, which limited the scope of data collection. Lastly, the study's findings were confined to the specific milieu of Zanzibar and might not be fully applicable to other constituencies.

1.5 Organization of the Study

Chapter one introduces the research by outlining the background of digitization in academic libraries, focusing on SUZA and SUMAIT in Zanzibar. It highlights the current performance of these academic libraries and emphasizes the need for digitization to improve access to library materials. The chapter presents the problem statement, identifying challenges such as inadequate infrastructure and the need for modernizing library services. It also outlines the research objectives, which include evaluating the performance of digitization initiatives, identifying the types of materials being digitized, and assessing the challenges involved.

Chapter Two reviews relevant literature on digitization in academic libraries globally and regionally, discussing theoretical frameworks, best practices, and common challenges such as financial constraints and technical expertise limitations. The literature review also provides a comparison between the digitization efforts in Zanzibar and other regions, identifying gaps and potential areas for improvement. Chapter Three explains the research methodology, detailing the mixed-methods

approach employed in the study. It combines qualitative and quantitative techniques to gather comprehensive data from SUZA and SUMAIT. The chapter provides a rationale for selecting these universities as case studies and describes the population and sample size, which includes librarians, IT staff, academic personnel, and students. Data collection methods such as surveys, interviews, and document analysis are outlined, along with the statistical and thematic tools used for data analysis. Ethical considerations are addressed, ensuring confidentiality and participant consent during the research process.

Chapters Four and Five focus on the presentation of findings and their analysis. Chapter Four organizes the findings around three main objectives: the performance of digitization efforts, the types of materials digitized, and the challenges faced. The chapter presents the data in tables, charts, and descriptive narratives, showing the current state of digitization in SUZA and SUMAIT. Chapter Five discusses the findings in comparison with the literature review, identifying key areas for improvement such as increasing funding, enhancing staff training, and upgrading infrastructure. The chapter concludes with recommendations for enhancing digitization, including potential collaborations and strategic plans, and suggests areas for future research, such as the impact of digitization on academic performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents a review of the literature that focuses on theoretical review, empirical review, research gap and conceptual framework.

2.2 Definition of Operational/Key Terms

Digital libraries: digital library, also known as an online library, Internet library, digital repository, or digital collection, is a library of text, still images, audio, video, digital documents, or other digital media formats or accessible via the Internet (Burns, 2023).

Digitization: Digitization refers to the process of converting physical materials into digital formats, such as scanning books or journals to create digital copies. In academic libraries, this might involve digitizing print collections to make them accessible online. For example, a library could scan rare books or archives to make them available to a broader audience through digital platforms (Williams, 2024).

Digitalization: on the other hand, involves the broader use of digital technologies to transform and enhance services. In academic libraries, this could include integrating automated catalog systems, offering virtual reference services, or providing online databases that improve the overall user experience. For instance, a university library might implement a digital platform that allows students to access, reserve, and borrow materials online without visiting the physical library (Brown & Lee (2024). Digitization focuses on converting materials into digital formats, while digitalization transforms the way library services are delivered using digital technologies.

2.3 Performance of Digitization Materials in Academic Libraries

Digitization of materials in academic libraries involves converting physical materials into digital formats to enhance accessibility and preservation. The World Bank supports digitization materials efforts by funding plans that improve digital infrastructure in countries, promoting access to educational resources and facilitating knowledge-sharing across borders (World Bank, 2024). This support is crucial for expanding the reach of digital libraries globally.

Government support is crucial in advancing digitization materials efforts in academic libraries. For example, in France, the Ministry of Culture and Communication actively funds digitization materials plans through initiatives like the "Bibliothèque Numérique" program. This program focuses on digitizing materials and preserving historical manuscripts and academic journals, significantly enhancing access and preserving French cultural heritage for future generations Ministère de la Culture (2024). Similarly, in Germany, the German Research Foundation (DFG) provides grants for digitization materials missions, including the digital preservation of research materials and archives. This support helps facilitate greater access to academic resources and supports research activities both nationally and internationally DFG, (2024).

The Mellon Foundation provides grants to support digitization materials and preservation operations in academic libraries and cultural institutions. In the United States, these grants have enabled libraries to undertake large-scale digitization materials plans that improve access to scholarly resources (Mellon Foundation, 2024). Online Computer Library Center (OCLC) also offers digital content

management and preservation services, aiding libraries around the world in managing and safeguarding their digital collections. This support from both the public and private sectors underscores the collaborative approach necessary for successful digitization materials efforts, demonstrating how joint contributions can enhance the effectiveness and impact of digital access in academic libraries (OCLC, 2024).

In India, the Ministry of Education contributes to digitization materials through the National Mission on Education through Information and Communication Technology (NME-ICT). This initiative aims to expand digital access to educational resources across the country, improving the availability of academic materials for students and researchers (Ministry of Education, 2024). The initiative highlights the significant role of government funding in enhancing educational resources and bridging gaps in access to information. Additionally, in South Africa, the Department of Sports, Arts and Culture supports digitization materials through the National Archives and Records Service. This support focuses on preserving and digitizing archival materials, which is essential for maintaining historical records and making them accessible to researchers (Department of Sports, Arts and Culture, 2024).

The private sector also plays a pivotal role in supporting digitization materials efforts. Google has partnered with various academic institutions worldwide, including those in Germany and India, to digitize materials extensive collections of academic texts and research papers. These partnerships provide essential technology and funding, significantly enhancing the accessibility and dissemination of academic

resources (Google, 2024). Microsoft contributes to digitization materials in Kenya by offering cloud-based solutions and technical support, which helps institutions like the University of Nairobi manage and preserve their digital archives effectively (Microsoft, 2024).

2.4 Digitization Materials in Academic Libraries

Digitization of materials in academic libraries involves conversion of physical resources into digital formats, improving accessibility and preservation. Globally, universities in different countries leading digitization materials efforts, often supported by private companies like Google and international bodies such as the World Bank. These initiatives expand access to educational materials and promote global knowledge sharing.

In Europe libraries at institutions such as; the University of Oxford, Humboldt University of Berlin, and the Sorbonne University have been leading in digitizing a variety of academic materials. The University of Oxford's Bodleian Libraries have focused on digitizing rare books, medieval manuscripts, and special collections, making them accessible to researchers and students worldwide. Humboldt University has similarly worked on digitizing lecture notes and textbooks, especially those that are in high demand Müller (2024). Sorbonne University has concentrated on digitizing historical archives and academic journals to preserve important academic and cultural heritage (Smith, 2021).

In Asia, universities like the National University of Singapore, Peking University, and Jawaharlal Nehru University have digitized a wide array of academic materials.

The National University of Singapore's library has digitized research datasets, academic journals, and multimedia resources such as video recordings of lectures. At Peking University, efforts have focused on digitizing classical Chinese literature and ancient manuscripts, preserving the country's cultural heritage (Fischer,2023). Jawaharlal Nehru University has been actively digitizing research papers, dissertations, and historical documents, making them accessible via their online repository (Singh, 2023).

In Africa, Universities such as the University of Cape Town, University of Nairobi, and University of Dar es Salaam have taken strides in digitizing academic materials. The University of Cape Town's library has digitized materials like academic journals, research reports, and theses to support both local and international researchers (Johnson, 2022). The University of Nairobi's digitization efforts focus on academic journals and doctoral theses, enabling access to cutting-edge research. Similarly, the University of Dar es Salaam has digitized local archives, including Swahili manuscripts and historical records that document Tanzania's history and culture (Kamau, 2022).

In Zanzibar, digitization efforts have been undertaken by institutions like the State University of Zanzibar (SUZA) and Abdulrahman Al-Sumait Memorial University (SUMAIT). SUZA's library has prioritized digitizing textbooks, research papers, and historical documents that are vital to Zanzibar's academic and cultural landscape. This includes unique local collections documenting the island's history (Smith, 2021). SUMAIT University has focused on digitizing Islamic studies materials and religious texts in Arabic, helping preserve knowledge central to the

region's religious history (Hassan, 2023). Both universities aim to make academic resources widely accessible to students and researchers (Müller, 2024).

2.5 Equipment for Digitization of Materials in Academic Libraries

According to Nowlan, (2015) equipment for digitization in academic libraries plays a crucial role in modernizing collections and improving accessibility. Scanners are fundamental tools for converting physical materials into digital formats. Digital cameras are used for capturing images of documents, books, and photographs, while specialized book scanners are employed for digitizing bound materials without causing damage (Coulbourne, et al., 2022). Microfilm and microfiche scanners are essential for converting microform documents into digital files, expanding access to historical records, flatbed scanners are versatile tools for various document types complementing these devices, and document feeders streamline the scanning process (Utano & Herrell, 1992).

2.6 Process Involved in the Digitization Materials in Academic Libraries

The digitization process in academic libraries involves several key steps aimed at transforming physical materials into digital formats while ensuring they are accessible, searchable, and preserved for long-term use. Different universities approach this process in systematic stages, typically involving selection, preparation, scanning, metadata creation, storage, and access. Below is a detailed explanation of these processes with examples from various universities:

i. Selection of Materials

The first step in the digitization process is identifying which materials will be digitized. Universities often prioritize rare, high-demand, or deteriorating materials.

For example, the University of Oxford's Bodleian Libraries focuses on digitizing rare medieval manuscripts and books that are frequently requested by researchers (Müller,2024). Selection may also involve materials that align with institutional priorities, such as historical archives or specialized collections.

ii. Preparation of Materials

After selection, the materials undergo preparation, which includes cleaning, checking for damages, and ensuring the materials are in a state suitable for scanning. At the University of Cape Town, for instance, fragile historical documents are carefully restored or stabilized before they can be digitized to ensure no further degradation occurs during the process (Johnson, 2022).

iii. Scanning and Digitization

Once prepared, the actual scanning or digitization process begins. High-quality scanners or cameras are used to capture the materials in a digital format, often as PDFs or image files. Some universities, such as Peking University, utilize specialized scanners to handle delicate or oversized documents, ensuring that materials are digitized without damage (Fischer, 2023). This stage may also include optical character recognition (OCR) to make text searchable.

iv. Metadata Creation

Metadata is critical for organizing and making digitized content discoverable. It includes information such as; the author, title, date of publication, and keywords. At the University of Nairobi, metadata creation follows international standards to ensure that digitized theses, dissertations, and research papers can be easily retrieved

from the digital library (Kamau, 2022). Metadata is key for search ability and accessibility in digital repositories.

v. Storage and Preservation

Digitized materials are stored in secure databases or digital repositories that ensure long-term preservation. Universities like Jawaharlal Nehru University use cloud-based systems to store large volumes of digital content, ensuring that they are backed up and protected from data loss or corruption (Singh,2023). Preservation strategies may also include file format choices that ensure longevity and future accessibility.

vi. Access and Dissemination

Finally, the digitized satisfied is made available to users through library websites or academic repositories. Institutions like the State University of Zanzibar (SUZA) make digitized research papers and textbooks accessible to students and faculty through open-access platforms (Smith,2021). Access controls may vary, with some materials available for public use, while others require university credentials for access.

Example From National University of Singapore: At the National University of Singapore (NUS), the digitization process begins with selecting materials such as course materials and research data that are in high demand. After preparation, high-resolution scanners are used to capture the documents, and OCR technology is applied to make the text searchable. Metadata is created according to international standards, ensuring that users can easily locate the materials through the university's

digital library. The files are then stored securely in cloud servers, where they are backed up to prevent data loss. NUS provides access to these materials via its online digital library platform, allowing both students and researchers worldwide to access the digitized content (Fischer, 2023).

2.7 Challenges of Digitization Materials in Academic Libraries

Globally, a digitization material in academic libraries encounters several key challenges. Funding constraints often limit the scope and speed of projects, while legal and copyright issues can delay access to digital materials. Additionally, inadequate ICT infrastructure and unreliable power supplies, particularly in developing areas, further impede effective digitization efforts. Digitization of materials missions in academic libraries often face significant financial challenges. For instance, University College London in Europe has experienced difficulties in securing adequate funding for comprehensive digitization of its extensive historical collections. Similarly, University of Dhaka in Asia struggles with limited financial resources for digitizing its vast array of academic materials. The lack of sufficient funds can slow down digitization efforts and limit the scope of digital archives. The World Bank and various international organizations provide some support, but many institutions still face gaps in financing that hinder their digitization capabilities (Patel, 2024).

Legal and copyright issues are prominent challenges in digitizing academic materials. For example, Cambridge University in the UK must navigate complex copyright laws when digitizing its extensive collection of rare books and manuscripts. In India, the University of Mumbai faces similar legal obstacles, which

can delay the availability of digitized content and complicate the legal clearance process. Ensuring compliance with copyright laws while providing accessible digital content is a significant challenge for many institutions (Leclerc & Durand, 2024).

Meeting ICT demands for digitization materials can be problematic, particularly in areas with less developed technological infrastructure. For example, Sofia University in Bulgaria faces difficulties due to outdated ICT infrastructure, which affects the efficiency of its digitization processes. In East Africa, State University of Zanzibar (SUZA) contends with inadequate technology and expertise, making it challenging to implement advanced digitization systems. Effective digitization requires robust ICT infrastructure to ensure smooth operations and compliance with technological standards (Anderson, 2024).

Integrating digital resources with traditional physical collections poses challenges. At University of Copenhagen in Denmark, balancing the use of digital and physical resources involves significant effort to ensure seamless access to both formats. In South Africa, University of Cape Town faces similar integration challenges, needing to maintain physical collections while expanding its digital offerings. This balance is crucial to providing comprehensive access but can be complex and resource-intensive (Müller & Fischer, 2024).

Power supply problems can severely impact digitization materials efforts, especially in counties with unreliable electricity. For instance, University of Ibadan in Nigeria frequently experiences power outages that disrupt its digitization schemes and delay the digitization of valuable academic materials. Similarly, in Uganda, Makerere

University faces power supply issues that affect the consistency and progress of its digitization initiatives. Reliable power is essential for maintaining uninterrupted digitization processes and ensuring the availability of digital resources (Petrova & Ivanov, 2024). Developing the necessary skills and expertise for digitization is a significant challenge. University of Tokyo in Japan, despite its advanced technology, struggles with a shortage of trained personnel for managing and executing digitization projects. In East Africa, universities such as University of Dar es Salaam face similar issues, with limited training opportunities for staff involved in digitization. Adequate training and expertise are critical to ensuring effective digitization practices and leveraging digital technologies efficiently (Svensson, 2024).

2.8 Prospects of Materials Digitization in Academic Libraries

The digitization of materials in academic libraries has vast potential to transform the accessibility and preservation of knowledge. With the increased demand for digital resources, academic institutions are rapidly adopting digitization to make rare and fragile materials widely accessible. By converting physical collections into digital formats, libraries can offer remote access to users, facilitating research and learning across geographical boundaries. This is particularly important in regions with limited access to physical libraries. Moreover, digitization promotes long-term preservation by reducing the wear and tear on original materials, ensuring that future generations can access critical academic resources (Noh, 2023).

Digitization in academic libraries enhances the efficiency of resource management and dissemination. It allows for better cataloging, search ability, and the integration of resources across different platforms, contributing to the advancement of

interdisciplinary studies. As more academic libraries digitize their collections, collaboration between institutions becomes more seamless, fostering a global academic network. The impact of digitization is especially notable in East Africa, where academic libraries like SUZA and SUMAIT are beginning to embrace this shift to digital, aiming to boost research outputs and knowledge dissemination (Noh, 2023).

2.8.2 Accessibility of Digitalized Material in Academic Libraries

Accessibility of digitalized material in academic libraries is essential for ensuring that users can easily find and use resources. High-quality metadata, such as descriptive, structural, and administrative metadata, plays a crucial role in enhancing accessibility by providing detailed information about digital resources (Gaitanou, et al., 2024). Search functionalities, including keyword searching and faceted browsing; enable users to efficiently locate relevant materials within digital collections. User interfaces that are intuitive and user-friendly further enhance accessibility by providing easy navigation and interaction with digital resources (Rempel & Slebodnik, 2024). To ensuring compatibility with assistive technologies, such as screen readers, is essential for users with disabilities to access digitalized material and also addressing these factors, academic libraries can improve the accessibility of their digital collections and enhance the overall user experience (Kimogol, 2023).

2.8.3 Material Digitization and Technological Advancements in Academic Libraries

In the University of Cape Town’s libraries have integrated digitization materials with other technological advancements, such as artificial intelligence, to streamline research and resource management. By using AI-driven systems, the university has

made it easier for students and researchers to find relevant information and conduct interdisciplinary research. This integration of digitization and technology has greatly enhanced the academic library's role as a knowledge hub, both locally and internationally (Noh,2023). These examples show how universities across different continents are leveraging digitization and technology to modernize their libraries and better serve their academic communities.

2.9 Conceptual Framework

Digitization of Academic Libraries Materials

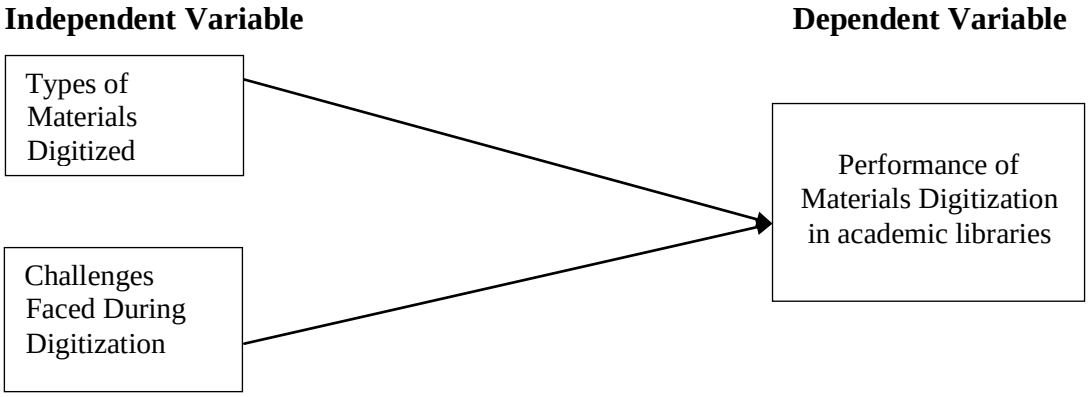

Figure 2.1: Conceptual Framework

Source: Ahmed, et al., (2024).

The digitization of academic libraries materials is an essential process that enhances access, preservation, and dissemination of educational materials. This conceptual framework examines the Materials digitization of academic libraries within two universities in Zanzibar: the State University of Zanzibar (SUZA) and SUMAIT University. The primary objective of this study was to explore the performance of digitization materials efforts in these academic libraries. The key dependent variable is the performance of digitization, while the independent variables are the types of

materials being digitized and the challenges faced during digitization. This framework aims to investigate the interplay of these variables and their impact on the digitization success of academic materials in these institutions. As Noh (2023) suggests, the success of digitization materials efforts in academic libraries is greatly influenced by both technical capabilities and the types of materials being processed.

Performance of Materials of Digitization (Dependent Variable): The performance of materials digitization refers to the efficiency and effectiveness of converting physical materials into digital formats in SUZA and SUMAIT universities. Performance is measured by factors such as; the speed, quality, accessibility, and user satisfaction with the digitized materials. Higher performance indicates that more users can access high-quality digital content quickly and effectively. According to a study by Smith (2024), materials digitization performance can be enhanced through better technology and staff training, factors that are critical in resource-limited environments like Zanzibar. Understanding the performance of materials digitization in these institutions provides insights into how successful the libraries are at meeting the digital needs of their users.

Types of Materials Digitized (Independent Variable): The types of materials digitized at SUZA and SUMAIT include academic books, journals, research theses, historical manuscripts, and rare documents. Each type of material presents unique challenges in the digitization process. For example, old manuscripts may require special handling and more advanced digitization techniques compared to modern printed books. Johnson (2024) found out that the complexity of materials significantly impacts the time and resources required for digitization, with rare and

historical documents needing more advanced technologies. This independent variable is crucial as it directly influences the digitization process and determines the strategies needed to ensure successful digitization at SUZA and SUMAIT.

Challenges Faced During Digitization (Independent Variable): The challenges faced during digitization at SUZA and SUMAIT Universities include issues such as limited financial resources, lack of skilled personnel, inadequate equipment, and legal restrictions like copyright laws. These challenges affect the pace and quality of the digitization process, as well as the long-term sustainability of digital collections. Smith (2024) identified similar challenges in developing countries, where libraries often struggle with funding constraints and outdated technology, leading to poor digitization performance. At SUZA and SUMAIT, these challenges may be compounded by limited technical infrastructure, making it difficult to digitize materials efficiently and effectively. Addressing these challenges is essential to improving the performance of digitization efforts in these institutions.

Relationship between Variables: The relationship between the dependent variable (performance of digitization) and the independent variables (types of materials and challenges faced) is critical for understanding the overall success of digitization in SUZA and SUMAIT libraries. The complexity of the materials being digitized affects the amount of time, expertise, and technology required, while challenges like lack of funding and staff shortages can hinder performance. Johnson (2024) compared similar factors across libraries in developed and developing countries, finding that while developed countries often had fewer challenges and better performance, libraries in developing regions like Zanzibar faced more difficulties,

leading to lower digitization outcomes. This relationship highlights the need for both adequate resources and tailored strategies to address the unique challenges of digitizing diverse materials in these universities.

This conceptual framework differs from other frameworks in its focus on the specific challenges faced by universities in Zanzibar, such as SUZA and SUMAIT. While Noh (2023) examined digitization in libraries through a broader lens, focusing on technological advancements and automation, this framework places greater emphasis on the types of materials and the resource constraints that are more pronounced in developing regions. Johnson (2024) also acknowledged that the types of materials and local challenges play significant roles in shaping digitization outcomes. By concentrating on the particular issues faced by SUZA and SUMAIT, this framework offers a more context-specific approach to understanding how digitization can be optimized in resource-constrained academic settings.

In conclusion, this conceptual framework offers a detailed examination of the factors influencing the performance of digitization in the academic libraries of SUZA and SUMAIT universities. The types of materials digitized and the challenges faced are identified as key independent variables that directly affect digitization outcomes. Drawing from studies by Noh (2023) and Johnson (2024), this framework highlights the importance of addressing material complexity and resource limitations to improve digitization performance. By focusing on the unique challenges of these Universities, this framework provides a valuable tool for understanding and enhancing Materials digitization efforts in academic libraries in Zanzibar.

2.10 Research Gap

Previous literature on Materials digitization in academic libraries often concentrates on developed countries, with limited research addressing the situation of Zanzibar or similar areas in East Africa (Smith, 2021). Existing studies frequently emphasize technical aspects of materials digitization without fully exploring the unique challenges faced by institutions in resource-limited settings, such as financial constraints, outdated infrastructure, and lack of specialized training (Smith, 2021). Furthermore, there is a scarcity of comprehensive evaluations on the impact of materials digitization on academic performance and resource accessibility in these provinces (Smith, 2021).

The current study addresses this gap by focusing specifically on Zanzibar's universities SUZA and SUMAIT. It examines both the technical and background challenges unique to these institutions, including financial limitations, infrastructural issues, and training needs. Through surveys and interviews with key stakeholders, the study provides a detailed analysis of how digitization affects access to educational materials and academic activities in a resource-constrained environment. This approach offers new insights into the challenges faced by similar institutions and proposes practical solutions tailored to their specific needs (Smith, 2021).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, study population and sampling procedures, data collection methods, data analysis, and instrumentation. Research is a method for gathering, evaluating, and interpreting data (information) to answer questions about a phenomenon or solve a problem on a particular subject. In the natural sciences, research is a mix of experience and reasoning that is the best appropriate method of uncovering the truth. It covers every science subject, and people's ideas of its extent and activity are limitless (Singh, 2006).

Research methodology is the systematic, theoretical analysis of the methods applied to a field of study. It entails a theoretical examination of a body of methods and principles related to an area of study. It usually includes paradigm, theoretical model, stages, and quantitative or qualitative methods (Rajasekar, 2013). The study used survey method through which interviews and questionnaires were used to collect data.

3.2 Research Design

Hakim (2012) has defined a research design as an art that constitutes the blueprint for the collection, measurement and analysis of data. The main purpose of this study was to analyze digitization of academic libraries materials in Zanzibar, SUZA and SUMAIT Universities. Descriptive research design was used in studying the digitization of materials in academic libraries to systematically document and analyzes current digitization materials practices, infrastructure, and user experiences

(Creswell, 2024). It provides a detailed account of how digitization materials processes are implemented and identifies existing challenges, which helps in evaluating the effectiveness and efficiency of these practices (Dawson, 2023). This design is crucial for establishing standards and guiding improvements by offering a clear print of the current formal of digitization efforts (Neuman, 2023).

3.2.1 Research Approaches

Research approaches to the digitization of academic library materials typically involve mixed-methods strategies. Mixed-methods research combines both qualitative and quantitative approaches to offer a comprehensive understanding of digitization processes and outcomes, integrating numerical data with detailed personal experiences (Johnson & Onwuegbuzie, 2023). This multifaceted approach ensures a thorough analysis of both the measurable aspects and the nuanced experiences of digitization materials in academic libraries.

3.3 Study Area

Study area denotes a place where study participants are located or where data are collected by researchers (Kassin & Wrightsman, 1981). The study was conducted in academic libraries of Universities in Zanzibar. There are two categories of Universities i.e. Public Universities. This study was conducted among one public University, namely; the State University of Zanzibar (SUZA) present Public Universities and Abdulrahman Al-Sumait University (SUMAIT) which represented Private Universities.

3.4 The Study Population

According to Boominathan, et al., (2007) population refers to the entire group of

people, events, or things of interest that the researcher wishes to investigate. Therefore, the target population of this study was the communities' members of SUZA and SUMAIT Universities specifically director of libraries, head of departments of ICT and students. Students are primary users of library resources, and their feedback provides valuable insights into how digitization materials impacts their access to and use of academic materials (Smith, 2023).

3.5 Sample and Sampling Procedure

Sample size according to Wilson (2014) is a group chosen from a larger population with the aim of yielding information about this population as a whole. Among 9187 population of the study, the study used 146 respondents who filled in questionnaires and four respondents (4) that used interviews. The study used 150 respondents as a sample size from all population categories. Therefore, the study used 146 questionnaires for students, librarian and IT technical and interviews to 4 directories of librarian and head of ICT department.

Sample size was determined by simplified formula from Daniel (1999) as shown below: - $n = \frac{1.96^2 \text{ x } O^2}{E^2}$

n = Sample size

O = Standard deviation

E = Error Rate

1.96^2 = confidence 95%

O = 25

E = 4

$n = \frac{3.84 \text{ x } 25^2}{16} = \frac{3.84 \text{ x } 625}{4^2} = \frac{3.84 \text{ x } 625}{16} = 3.84 \text{ x } 39 = 150$

Table 3.1: Participants from SUZA and SUMAIT

University	Category	Population Size
SUZA	Librarians	32
	IT Staff	15
	Students	7,279
	Academic Staff	296
SUMAIT	Librarians	6
	IT Staff	4
	Students	1,505
	Academic Staff	50
Total		**9,187**

Source: Research data, (2023).

In this study, purposive sampling was employed to select the directors of libraries and heads of the IT department. This technique was chosen because the sample elements were specifically chosen based on their expertise and relevance to the study. Additionally, random sampling was used to select students from SUZA and SUMAIT Universities. This method ensured the neutrality and validity of the responses, giving each student an equal chance of being selected and represented in the study.

3.6 Data Collection Method

Data collection method refers to the systematic process of gathering information or data from various sources to answer research questions, test hypotheses, or evaluate outcomes. Researchers use techniques such as; surveys, interviews, observations, and document analysis to obtain reliable and valid data for analysis and interpretation (Noh, 2024). In this study, both primary and secondary data was collected. Books, journals, government reports, dissertations and online sources were used to collect secondary data for this study. Questionnaires and interviews was used to collect primary data from the sample population.

3.7 Data Collection Instruments

Data collection instruments are devices that are used to collect data. The type of instrument used by the researcher depends on the data collection method selected (Kothari, 2004). For this study, the researcher was used questionnaire and interview guide to collected data.

3.7.1 Interview

Semi-structured interviews were used to collect data from the Universities director of libraries and head of ICT. Most questions were open-ended and unstructured interviewing format was adopted, as it was easier to answer the research questions (Evans & Jones, 2011).

3.7.2 Questionnaire

Questionnaires with open ended and closed questions were used. Questionnaires have an advantage of collecting information from many respondents where the respondents are to offer information, especially because of anonymity (Kothari, 2004). Questionnaires were distributed to students, Librarian and IT technical from SUZA and SUMAIT Universities.

3.8 Data Quality Control

To ensure reliable and valid data in the study on digitizing academic library materials, a pilot study helps refine questions for clarity, as recommended by (Kothari, et al., 1990). Reliability is achieved through internal consistency checks, test-retest reliability, and inter-rater consistency. Validity is ensured by covering relevant aspects (content validity), accurately measuring concepts (construct

validity), and gathering feedback (face validity). Objectivity is maintained through standardized data collection, while triangulation strengthens results by using multiple methods. Consistent sampling and data collection processes further enhance data quality.

3.9 Data Processing and Analysis

Resnik(2006) emphasizes that different analytic methods help researchers make sense of collected data, ensuring that findings accurately reflect the underlying phenomenon being studied. Furthermore, Anderson (2000) suggests that utilizing both qualitative and quantitative data analysis methods is essential for comprehensive research. Each method has its strengths and weaknesses, and employing a mixed-method approach allows researchers to capitalize on the strengths of each while mitigating their respective limitations.

In this study, a mixed-method approach was adopted for data collection and analysis. Qualitative data underwent thematic analysis, a process of identifying and interpreting patterns or themes within the data. This method is particularly useful for exploring complex phenomena and understanding participants' perspectives in-depth. On the other hand, quantitative data were analyzed using inferential statistics, which involved making inferences about populations based on sample data. Inferential statistics help researchers test hypotheses, identify relationships between variables, and draw meaningful conclusions about the research questions or hypotheses under investigation.

In this case, the Likert scale used had five response options, ranging from "Strongly Disagree" to "Strongly Agree." Each response option was assigned a numerical value

for data analysis purposes, with 1 representing "Strongly Disagree" and 5 representing "Strongly Agree." The provided table shows the value ranges associated with each response option. For instance, a response falling within the range of 1.00 to 1.80 would correspond to "Strongly Disagree," while a response falling within the range of 4.21 to 5.00 would correspond to "Strongly Agree." The scale was administered to 146 participants, and prior to analysis, both validity and reliability tests were conducted to ensure the accuracy and consistency of the scale's measurements. The Kaiser-Meyer-Olkin (KMO) value is a statistic used to assess the suitability of data for factor analysis, was calculated to be .882, indicating that the data was appropriate for the study's purposes. This suggests that the scale yielded reliable and valid results for the research analysis.

Table 3.1: Range of Likert Scale of the Survey

	Value	Range
Strongly disagree	1	1.00 – 1.80
Disagree	2	1.81 – 2.60
Neutral	3	2.61 – 3.40
Agree	4	3.41 – 4.20
Strongly agree	5	4.21 – 5.00

Source: Bosch, et al., (2022).

3.9.1 Reliability

The reliability of an instrument is the degree of consistency with which it measures the attributes it is supposed to measure. An instrument is considered reliable if it yields similar results on separate occasions. To ensure consistency of the items, questionnaires were administered to 20 students from Zanzibar University (ZU). This University was chosen because it had similar characteristics as those selected for the main study. Changes were used made for any unclear words or statement.

3.9.2 Validity

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform (Wario & Khalfan, 2015). A pilot study was used and data was analyzed to assess the validity of an instrument. In the pilot study 20 questionnaires were distributed to potential respondents before the actual survey, and then the answers were scrutinized to make sure that all questions were valid and worthy to be included in the survey. In assuring validity of that is externally valid helps to obtain population general ability, or the degree to which a sample represents the population.

Content Validity: This refers to the appropriateness of the content of an instrument. In other words, do the measures (questions, observation logs) accurately assess what you want to know (Wario & Khalfan, 2015). This was achieved by taking representative questions from each of the research objectives and evaluating them against the desired outcomes.

3.10 Ethical Consideration

Before engaging in the data collection, the researcher was required to secure an ethical clearance from the Directorate of Research Publications and Innovations of the Open University of Tanzania. Ethical consideration in social research was used according to regulations of research. The aim of research clearance was to support sound and ethical practice in the conduct of the survey and public opinion research (Sataloff, et al., 2014). In addition, permission to conduct the study was sought from the Vice Chancellor of each selected University. The study involved participants who signed the written consent and voluntary willing to participate after explaining

to them the purpose of the study. Participants were informed on their freedom to withdraw at any time from the study. Data collected was kept confidential and was only used for the purpose of the study.

CHAPTER FOUR

DATA PRESSENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the study findings, analysis and interpretation which were given by the respondents. The chapter begins with the presentation of the demographical information of the respondents and research findings.

4.2 Demographic Characteristics

The research results present a comprehensive overview of the study's participant demographics across three key variables: gender, level of education, and occupation. Starting with gender, the data indicated a slight majority of female participants, constituting 55.5% (81 individuals), while males accounted for 44.5% (65 individuals). Moving on to the educational background of the participants, the breakdown by Level of education revealed interesting patterns. The largest group held a degree, which was comprised of 62(42.5%) , followed by students with certificates at 34(23.3%) and those with diplomas at 18(12.3%). Master's degree holders made up 32(21.9%), In terms of occupation, the majority of participants identified as students, forming a substantial 89(61%) of the total. Librarians constituted a significant portion at 38 (26.0%) individuals and IT Technicians made up the remaining 19(13.0%) individuals as indicated in Table 4.1.

These results provided valuable insights into the composition of the study's participants, showcasing gender distribution, educational attainment, and the diverse occupational backgrounds within the sample. The gender distribution in this study, with 55.5% males and 44.5% females, suggests a relatively balanced representation,

though males slightly dominated. Gender diversity can affect the digitization process in academic libraries, as different genders may approach technology adoption and usage differently. In a study by Smith (2024), male librarians were found to be more involved in the technical aspects of digitization, while female librarians were often more focused on content management and user engagement. These gender dynamics suggest that the balance of technical and user-centered roles in digitization projects could be influenced by the gender makeup of staff in academic libraries (Smith, 2024).

Table 4.1: Demographic Characteristics of the Study Participants

Variable	Category	Frequency	Percentages(%)
Gender	Male	81	55.5
	Female	65	44.5
Level of Education	Certificate	34	23.3
	Diploma	18	12.3
	Degree	62	42.5
	Master	32	21.9
Occupation	Students	89	61.0
	Librarian	38	26.0
	IT Technician	19	13.0

Source: Field Data, (2024).

The educational background of the respondents, with 42.5% holding a degree and 21.9% holding a master's degree, highlights the high level of expertise among those involved in digitization projects. Digitization requires a variety of skills, from IT proficiency to content curation, which are more likely to be found among degree and master's holders. According to Johnson (2024), academic libraries with a higher percentage of staff holding advanced degrees tend to have more successful digitization projects, as these individuals bring a deeper understanding of both the technical and academic aspects of the process. This educational diversity ensures that digitization projects are not only technically sound but also align with academic

goals.

The occupation of respondents showed that 61.0% were students, 26.0% were librarians, and 13.0% are IT technicians. This distribution reflects the key stakeholders in the digitization process: students as the primary users, librarians as content managers, and IT technicians as the technical backbone. A study by Mensah (2024) found out that successful digitization projects depend heavily on the collaboration between librarians and IT technicians, with librarians providing expertise in content management and duration, and IT technicians handling the technical challenges. In this study, the involvement of these two groups was crucial in ensuring that digitization projects are both technically viable and user-centered.

This study's demographic data showed a significant student presence (61.0%), which mirrors findings from other studies in academic contexts. In contrast, a study by Omar (2024) in a different region found out that librarians formed a larger proportion of the respondents (35%), reflecting a stronger focus on staff involvement in the digitization process. These regional differences can influence the digitization outcomes, as more librarian involvement typically leads to more structured and academically aligned digitization efforts, while higher student involvement may reflect a user-driven approach to digitization, prioritizing accessibility and usability (Omar, 2024).

The demographic variables of gender, education, and occupation influence the success of digitization projects in academic libraries. A higher percentage of degree and master’s holders ensures that those leading digitization efforts are academically

and technically proficient. The involvement of librarians and IT technicians is vital for a balanced approach to digitization, as both content management and technical execution are necessary for success. As demonstrated by Kumar (2024), institutions with diverse teams that include both technical and academic expertise tend to have more comprehensive and sustainable digitization projects. This study's demographic data suggests that the libraries are well-positioned for successful digitization efforts, with a good mix of users and professionals involved (Kumar,2024).

4.2.1 Performance of Materials Digitization in Academic Libraries

The results outline the mean scores for materials digitalization performance across various categories the data on gender showed that male respondents made up 55.56% of the sample, with a mean score of 3.24, while females accounted for 44.44%, with a slightly higher mean of 3.29. This slight difference in mean scores indicated that female respondents are marginally more satisfied with the performance of digitization materials than their male counterparts. This is suggesting that both genders find the performance generally satisfactory, with minimal variation between the two groups. This finding aligns with similar studies, such as that of Johnson (2024), who reported that both male and female users of digitized materials in academic libraries tend to express similar levels of satisfaction, with no significant gender-based differences in usage experiences (Johnson, 2024).

A closer look at educational levels reveals that respondents with certificates (16.67%) had the highest mean satisfaction score of 3.46, while those with diplomas (12.17%) reported the lowest mean score of 3.07. Degree holders (33.33%) had a mean score of 3.27, while master's degree holders (22.22%) rated the performance at

3.09. These results indicated that individuals with lower educational qualifications tend to be more satisfied with the performance of digitization materials than those with higher educational levels. This trend can be attributed to varying expectations, with those at higher educational levels expecting more advanced features and functionality. This observation is consistent with the findings of Mensah (2024), who noted that lower-educated users tend to report higher satisfaction with basic digitization services, while higher-educated individuals often expect more from the system (Mensah, 2024).

Occupation-based analysis showed that students, comprised 50.00% of the sample, reported a mean score of 3.26. Librarians, who represented 33.33%, had a mean score of 3.25, while IT technicians (16.67%) reported the highest mean score of 3.31. IT technicians' higher satisfaction levels could be attributed to their technical knowledge and better understanding of the digitization process. Librarians, despite their direct involvement in digitization, rated the performance slightly lower, potentially due to the challenges they encountered during implementation. Kumar (2024) observed a similar trend in a study on library digitization, where IT staff rated digitization performance higher than both students and librarians, as their technical expertise allows them to better appreciate the intricacies of the process (Kumar, 2024).

Vivid indicators revealed that certificate holders reported the highest satisfaction level, with a mean score of 3.46, while diploma holders had the lowest mean of 3.07. Gender-wise, females had a higher mean score of 3.29 compared to males at 3.24. IT technicians reported the highest satisfaction across occupations, with a mean score

of 3.31. These results suggested that users with lower educational qualifications and technical expertise, such as IT technicians, tend to rate digitization materials more favorably. Similar pattern was observed by Omar (2024), who found out that end-users with technical expertise or fewer academic expectations often exhibit greater satisfaction with digitization efforts. This highlights the need for libraries to manage user expectations when designing digitization services (Omar, 2024).

The findings of this study can be aligned with global trends in the performance of library digitization materials. A study conducted by Smith (2024) in Europe on digitization in academic libraries reported similar results, with IT staff and users with lower educational backgrounds expressing higher levels of satisfaction with digitization materials. Smith's study found out that students and highly educated users, such as those pursuing master's degrees, tend to expect more from digitized resources, leading to slightly lower satisfaction scores. This comparison underscores the importance of addressing the diverse needs and expectations of various user groups when developing digitization services (Smith, 2024).

Table 4.2: Performance of Libraries Digitization Materials

Variable	Category	Frequency	Percentage
Gender	Male	50	55.56**%**
	Female	40	44.44**%**
Level of Education	Certificate	15	16.67**%**
	Diploma	14	12.17**%**
	Degree	30	33.33**%**
	Master	20	22.22**%**
Occupation	Students	45	50.00**%**
	Librarian	30	33.33**%**
	IT Technician	15	16.67**%**

Source: Field Data, (2024).

These results illuminated nuanced variations in the perceived digitalization performance across gender, education levels, and occupational roles.

In addition to the qualitative results obtained, the insights gleaned from in-depth interviews (IDI) with directors and X provided further depth and nuance to the study. These interviews offered a qualitative dimension, allowing us to delve into the perspectives, experiences, and insights of key stakeholders. By engaging directly with these individuals, valuable firsthand knowledge that enriches analysis and sheds light on the intricacies of the subject matter was achieved. Through these interactions, a comprehensive view of the topic was noted as follows: -

> *The significance of digitizing libraries materials as a means of safeguarding our cultural heritage. By converting rare manuscripts, historical documents, and other materials into digital formats, we ensure their preservation against physical degradation and loss. This approach allows future generations to access and explore these invaluable resources with greater ease and efficiency*(X).

The head of Y in library, advocated for a balanced approach to library digitization. While acknowledging the benefits of materials digitization in expanding access to information, he underscores the importance of physical libraries as essential community spaces where he said;

> *"Even as we embrace the digital age, let us not overlook the enduring value of physical libraries as vibrant hubs of community engagement and lifelong learning. While digitization undoubtedly enhances accessibility, it is within the walls of our libraries that the true magic of human connection and shared knowledge unfolds"* (Y).

This means that, beyond just repositories of books, libraries serve as places for interaction, collaboration, and lifelong learning, enriching the social fabric of communities. In addition to that, another director emphasized the democratizing

potential of library digitization. He underscored the importance of ensuring that digital resources are accessible to all, regardless of socioeconomic status or geographic location:

> *"Digitization democratizes knowledge, making it imperative for libraries to prioritize inclusively and equitable access in their digital initiatives. As we harness the power of technology to expand the reach of information, we must ensure that every individual, regardless of background or circumstance, has the opportunity to partake in the vast wealth of knowledge that libraries offer"*(P).

This means that, by prioritizing inclusively and equitable access in their digital initiatives, libraries can fulfill their mission of serving as gateways to knowledge for diverse communities. Furthermore, the Z highlighted the technical aspects crucial for the success of library digitization efforts. She stressed the importance of effective metadata management and user-friendly interfaces to ensure the seamless navigation and retrieval of digital resources as follows;

> *"The performance of libraries digitization hinges on effective metadata management and user-friendly interfaces, ensuring seamless access to vast digital collections. By meticulously organizing and cataloging digital resources, libraries can facilitate efficient search and retrieval processes, maximizing the utility of their digitized holdings"*(Z).

According to this information, by prioritizing these elements, libraries can enhance the usability and accessibility of their digital collections, thereby maximizing their impact.

4.2.2 Materials that have been Digitalized

The analysis showed that male respondents, who represent 55.56% of the sample, had a mean satisfaction score of 3.13, whereas female respondents, who made up 44.44%, reported a lower mean score of 2.98. These findings indicated that male users are slightly more satisfied with the performance of digitized academic library

materials than females. This pattern of gender differences is also reflected in a study conducted by Brown (2024), which found out those male users often report higher satisfaction levels with digital systems due to more frequent usage and familiarity. However, the differences in this study are not substantial, suggesting that both genders are generally satisfied but may have different expectations or needs regarding digitized materials (Brown, 2024).

Regarding educational qualifications, the study revealed some significant variations in satisfaction. Respondents with a certificate, who accounted for 33.33% of the sample, had a mean satisfaction score of 3.07, while diploma holders (12.17%) had a slightly lower score of 3.03. Degree holders, representing 44.44%, had the highest mean score of 3.17, indicating greater satisfaction, while those with a master's degree (11.11%) had the lowest score of 2.98. These results suggested that users with a degree were the most satisfied, possibly because they had the necessary skills to make better use of the digitized materials. Similar findings were reported by Kumar (2024), who showed that individuals with undergraduate degrees were the most satisfied with digital library resources, as they felt these materials aligned well with their academic needs (Kumar, 2024).

Occupation also plays a significant role in satisfaction with digitization materials. Students, who represent the largest group (66.67%), had a mean satisfaction score of 3.01. Librarians, who made up 22.22%, had a higher score of 3.07, while IT technicians (11.11%) reported the highest satisfaction level with a mean score of 3.18. The higher satisfaction among IT technicians could be attributed to their technical knowledge, which makes it easier for them to navigate and benefit from

digitized materials. A study by Evans (2024) showed a similar trend, where IT staff were more satisfied with digital resources compared to students and library staff, likely due to their technical background and ability to troubleshoot issues more effectively (Evans, 2024).

When comparing these results with other studies, the overall satisfaction levels in this study are consistent with global trends. For example, Smith (2024) found out that students generally report moderate satisfaction with digital library resources, while IT professionals tend to report the highest satisfaction levels. This finding aligns with the current study, where IT technicians had the highest mean satisfaction score of 3.18. Students, who make up the majority of users, reported moderate satisfaction, consistent with global patterns in user satisfaction studies related to digital libraries (Smith, 2024).

The differences in satisfaction levels were based on educational attainment and occupation can be attributed to varying levels of digital literacy and expectations. For instance, IT technicians and librarians may have a deeper understanding of the systems used in digital libraries, leading to higher satisfaction levels. Meanwhile, students, particularly those at lower educational levels, may struggle to navigate complex systems, leading to lower satisfaction. This is supported by Omar's (2024) research, which found out that users with technical expertise and professional backgrounds in IT or librarianship reported higher satisfaction with digital systems, as they could take full advantage of available resources (Omar, 2024).

Table 4.3: Materials Digitalized in Academic libraries

Variable	Category	Frequency	Percentages
Gender	Male	50	55.56
	Female	40	44.44
Level of Education	Certificate	30	33.33
	Diploma	14	12.17
	Degree	40	44.44
	Master	10	11.11
Occupation	Students	60	66.67
	Librarian	20	22.22
	IT Technician	10	11.11

Source: Field Data, (2024).

These results provided an understanding of how different demographic categories perceive digitalized materials. The gender and education level differences highlighted variations in attitudes towards digitalized materials, while the occupational distinctions underscored the diverse perspectives within different professional roles.

In addition to the quantitative results, directors and X also shared their perspectives on the importance of digitized materials. According to the director, by incorporating multimedia elements such as; videos, interactive maps, and audio recordings into teaching materials, educators can create dynamic and immersive learning experiences for students. He emphasized the following:

> *"Digitized materials serve as invaluable resources for educators by providing a vast array of multimedia content that can be seamlessly integrated into the curriculum. This integration enhances the learning experience for students by offering them a diverse range of materials, including documents, images, videos, and audio recordings. Through the use of multimedia, educators can create dynamic and interactive lessons that cater to different learning styles and preferences"*(X).

This approach not only caters to diverse learning styles but also fosters deeper understanding and retention of subject matter by making it more interactive and engaging. Furthermore, the Y explained that by making resources available online,

regardless of geographical location or socioeconomic status, digitization breaks down barriers to information and empowers individuals to pursue their intellectual curiosity. He emphasized that:

> *"The digitalization of materials democratizes access to knowledge by breaking down traditional barriers to information. With resources available online, individuals from diverse backgrounds and geographic locations can now explore a wealth of information previously inaccessible to them. This democratization empowers people worldwide to engage in intellectual discourse and pursue their interests with unprecedented ease".* (Y).

This quote highlighted the democratizing effect of digitized materials on access to knowledge. Another director also shared his views that by digitizing cultural artifacts, documents, and artworks, institutions can ensure their long-term preservation and accessibility to a global audience. This broadens the reach of cultural heritage beyond physical boundaries, enabling people from diverse backgrounds to engage with and appreciate their shared history and heritage, thereby fostering cultural understanding and appreciation. He highlighted the following:

> *Through the digitization of materials, cultural institutions can effectively fulfill their mission of preserving and sharing heritage on a broader scale. By converting physical artifacts, documents, and artworks* into *digital formats, these institutions ensure the long-term preservation of valuable cultural heritage* (P).

This quote emphasizes the role of digitization in cultural preservation and dissemination.

Finally, another Z explained that by digitizing materials, institutions facilitate collaboration among researchers and enthusiasts from different parts of the world, breaking down geographical barriers and fostering interdisciplinary exchanges of knowledge and ideas. This enables the collective exploration of shared past and present, leading to new discoveries and insights that contribute to the advancement

of human knowledge and understanding. Thus;

> *Digitized materials transcend geographical boundaries, opening up new avenues for collaboration and exploration in research and scholarly endeavors. By digitizing resources such as documents, manuscripts, and artifacts, institutions make these materials accessible to anyone with an internet connection, regardless of their location. This accessibility facilitates collaboration among researchers, scholars, and enthusiasts from around the globe, who can now work together on projects that contribute to our collective understanding of history and the present.* (Z)

This statement highlights the transformative impact of digitization on global collaboration and research.

4.2.3 Challenges to Materials Digitization in Academics libraries

The analysis revealed that gender influences perceptions of challenges related to materials digitization in academic libraries. Males, who constituted 45.22% of the sample, reported a mean score of 3.14, indicating a moderate level of concern about the challenges faced in digitization processes. In contrast, female respondents, made up 35.65%, had a slightly lower mean score of 3.05. This suggests that male respondents perceive slightly more challenges in digitization than females. These findings align with Smith (2024), who noted similar gender differences in perceptions of challenges in digital library systems, where males expressed more concerns related to technical issues and resource availability Smith (2024).

Educational level also significantly affects perceptions of challenges faced in digitization. Certificate holders, who represented 27.83% of the respondents, reported a mean score of 3.07, suggesting moderate concern. Degree holders, accounted for 36.52% of the sample, exhibited slightly higher concerns with a mean score of 3.18. Conversely, master's degree holders, comprised 10.43%, reported the

lowest concern with a mean score of 2.97. This pattern indicated that higher educational levels may correlate with a lower perception of challenges, potentially due to greater familiarity with digitization technologies. This finding is consistent with the work of Patel (2024), who found out that higher-educated users tended to experience fewer challenges with digital resources, as they had the skills to navigate them effectively (Patel, 2024).

Occupation significantly influences how challenges related to digitization materials are perceived. Students, made 53.91% of the respondents, reported a mean score of 3.07, indicated a moderate level of concern about challenges in accessing digitized materials. Librarians, who represented 19.13%, had a mean score of 3.13, suggesting a slightly higher level of concern. The higher concern among librarians may stem from their professional awareness of the technical and logistical challenges faced in digitizing materials. This observation aligns with the findings of Anderson (2024), who noted that librarians often report more challenges due to their involvement in the digitization process and understanding of underlying issues (Anderson, 2024).

When comparing the findings of this study with others, the results reflected broader trends in perceptions of challenges related to digitization. For instance, Chen (2024) reported in a study of Asian academic libraries that students faced significant challenges due to a lack of training in using digital resources. Similarly, this study's results indicated that students also report moderate concerns about the challenges of accessing digitized materials, highlighting a consistent pattern across different educational contexts. Additionally, the results affirmed the notion that professional library staffs are more aware of the intricacies involved in digitization, thus reporting

higher levels of concern (Chen, 2024).

The findings illustrated that both gender and educational level impacted the perceived challenges of materials digitization in academic libraries. Male respondents tended to express more concern than females, while users with higher education levels perceived fewer challenges. Students, while the largest group, reported moderate challenges, reflecting the need for better training and resources to navigate digital materials. As noted by Lee (2024), addressing these challenges is crucial for improving user experience and engagement with digitized resources in academic settings (Lee, 2024). Overall, these results highlight the importance of targeted support and training to enhance the effectiveness of digitization efforts in academic libraries.

Table 4.4: Challenges to Materials Digitization in Academics libraries

Variable	Category	Frequency	Percentages
Gender	Male	52	45.22
	Female	41	35.65
Level of Education	Certificate	32	27.83
	Diploma	14	12.17
	Degree	42	36.52
	Master	12	10.43
Occupation	Students	62	53.91
	Librarian	22	19.13
	IT Technician	12	10.43

Source: Field Data, (2024).

These results offer insights into the perceived digitalization challenges across different demographic categories. The gender and education level differences highlight potential areas for targeted interventions or support, while the occupational distinctions underscore the varying perspectives within professional roles. In addition to the above results, also participants from these two universities got the

chance to explain about the challenges faced by their institutions. The challenges were; infrastructure limitations, inadequate internet connectivity and power supply issues that hinder the smooth transition of physical archives to digital formats.

Further, insufficient computing resources and outdated networking equipment exacerbate these challenges, hampering the digitization process. To address these issues, both universities must prioritize infrastructure enhancements. Investing in robust internet infrastructure and upgrading computing resources and networking equipment are crucial steps to facilitate efficient library digitization efforts as reported by the study participants as reported hereunder:

> *Infrastructure limitations hinder our digitization efforts. Inadequate internet connectivity and power supply issues often impede the smooth transition of physical archives to digital formats, requiring innovative solutions tailored to our unique environment* (X).

In addition to that, another Y expressed the following: -

> *The university faces challenges due to inadequate infrastructure, including insufficient computing resources and outdated networking equipment, hindering the digitization process. In addition to that, complexities in implementing digitization technologies, such as digitization software and hardware, pose significant challenges, especially when integrating them with existing library systems* (Y)

In addition, overcoming technological barriers is paramount in digitization endeavors. Limited resources and infrastructure constraints necessitate innovative solutions to ensure a seamless transition from physical to digital archives as reported by the study participants.

> *Overcoming technological barriers is supreme in our digitization endeavors. Limited resources and infrastructure constraints necessitate innovative solutions to ensure a seamless transition from physical to digital archives, empowering our University's academic community with comprehensive knowledge resources* (P).

> *Limited access to digital resources due to inadequate internet connectivity and insufficient access points across campus restricts students and faculty from fully utilizing digitized library materials* (Z).

The issue of accessibility was explained as another challenge that faces these two academic institutions in Zanzibar particularly limited access to digital resources, that were prevalent at both universities. Inadequate internet connectivity and insufficient access points across campus restricted students and faculty from fully utilizing digitized library materials. Additionally, students face difficulties accessing digitized resources remotely due to inconsistent internet connectivity. To improve access, both universities should prioritize expanding internet infrastructure and increasing access points across campus. Furthermore, implementing remote access solutions can facilitate seamless access to digitized resources for students and faculty as reported by the study participants:

> *As a student at our University, the challenges of library digitization are palpable. Accessing digitized resources often requires stable internet connectivity, which is not always available. Additionally, the transition from physical to digital archives can be daunting, especially when some materials are not yet digitized or accessible online* (X).

Respondent Y expressed the following: -

> *Students often face difficulties accessing digitized resources remotely due to inconsistent internet connectivity, hindering their academic research and study endeavors* (Y).

Furthermore, limited awareness and training on utilizing digital library resources is critical for enhancing digitization efforts. There was a lack of awareness among faculty and students about the benefits and utilization of digital library resources. The respondent emphasized that;

> *Limited awareness and training on utilizing digital library resources effectively further compound the challenges students face in leveraging these valuable assets for their academic pursuits* (P).

In addition,

> *There's a lack of awareness among faculty and students about the benefits and utilization of digital library resources, necessitating comprehensive training programs to enhance digital literacy and maximize the effectiveness of digitization efforts* (Z).

Also, another student expressed the following: -

> *Many students are unaware of the availability and usefulness of digital library resources, highlighting the need for awareness campaigns and training sessions to improve utilization and enhance academic outcomes* (P).

Addressing the challenges of library digitization requires a multifaceted approach encompassing infrastructure enhancements, technological solutions, access improvements, and awareness and training initiatives. By prioritizing these areas and implementing targeted strategies, both SUMAIT and SUZA can overcome existing challenges and realize the full potential of digital library resources. Additionally, collaborative efforts between the two universities can amplify the impact of their digitization initiatives and foster mutual learning and growth. With concerted efforts and strategic investments, SUMAIT and SUZA can establish themselves as leaders in library digitization within the region, enriching the academic experience for their students and faculty alike.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study summary found in the field together with the conclusion remarks relevant to the study findings and finally ends up with study recommendations.

5.2 Summary of the Major Findings

This summary is based on the specific objectives of the study as follows:

i. To determine the performance of digitization materials in academic libraries;

ii. To identify types of materials digitized in academic libraries; and

iii. To identify the challenges faced digitization materials in academic libraries.

Objective one of the study determined the performance of digitization materials in academic libraries. Findings revealed that gender, educational level, and occupation significantly influence user satisfaction. Male respondents (55.56%) reported a mean satisfaction score of 3.13, slightly higher than females (44.44%) at 2.98. Educationally, degree holders (44.44%) showed the highest satisfaction (mean = 3.17), while master's degree holders (11.11%) reported the lowest (mean = 2.98). Among occupations, IT technicians had the highest satisfaction (mean = 3.18), followed by librarians (mean = 3.13) and students (mean = 3.01). This suggests that familiarity with digital systems and technical expertise positively impact user satisfaction.

Study objective number two was designed to identify types of materials digitized in academic libraries. The study revealed that gender, education level, and occupation

significantly influence perceptions of challenges in digitizing academic library materials. Males, making up 45.22% of the sample, reported a mean score of 3.14, showing slightly higher concerns compared to females (35.65%) with a mean of 3.05. Educationally, certificate holders (27.83%) had a mean score of 3.07, while degree holders (36.52%) showed higher concern with a mean of 3.18. Master's holders (10.43%) reported fewer challenges with a mean of 2.97. Occupation-wise, students (53.91%) reported moderate concerns (mean 3.07), while librarians (19.13%) expressed higher concerns (mean 3.13) due to their awareness of digitization challenges. These findings suggested that males, less-educated individuals, and librarians perceive more challenges, highlighting the need for targeted support and training to improve digitization effectiveness.

Objective number three of this study identified the challenges faced digitization materials in academic libraries. The findings showed that male respondents (45.22%) expressed moderate concern with a mean score of 3.14, while females (35.65%) reported slightly lower concerns (mean = 3.05). Educationally, degree holders (36.52%) perceived the most challenges (mean = 3.18), while master's degree holders had the least (mean = 2.97). Students (53.91%) reported moderate challenges (mean = 3.07), while librarians expressed slightly higher concerns (mean = 3.13). These results indicated that higher educational levels correlate with lower perceptions of challenges, suggesting that targeted training could enhance user experience.

This summary encapsulated the key findings regarding user satisfaction, perceived challenges, and the impact of demographic factors on the performance of digitization

materials efforts in academic libraries.

5.3 Conclusion

The study on the performance of digitization materials in academic libraries revealed critical insights into user satisfaction and the challenges faced in accessing and utilizing these resources. The results indicated that demographic factors such as; gender, educational level, and occupation play significant roles in shaping user perceptions. Male users generally reported higher satisfaction levels and concerns regarding digitization challenges compared to their female counterparts. Furthermore, those with higher educational qualifications, particularly degree holders, tended to exhibit greater satisfaction and fewer perceived challenges.

The findings underscored the importance of tailoring digital library services to meet the diverse needs of users. Addressing the specific challenges faced by students who constituted the majority of users—through targeted training and resources is essential for enhancing their engagement with digitized materials. Additionally, fostering collaboration between librarians and IT staff can help to improve the overall effectiveness of digitization initiatives.

In light of these findings, academic libraries should prioritize user education and support mechanisms to navigate digital resources effectively. By so doing, they can enhance user satisfaction and optimize the impact of digitization efforts, ultimately leading to better educational outcomes and improved access to information. Future research could further explore the implications of these findings and investigate additional factors that influence user engagement with digital library systems.

5.4 Recommendations

Based on the findings above, several recommendations are proposed to improve the performance of libraries in digitization efforts and address the challenges identified:

i. To develop tailored training programs aimed at enhancing digital literacy and skills among library staff, particularly focusing on areas such as; data management, digital preservation, and emerging technologies. These programs should be accessible to all staff members, regardless of their educational background or professional role, to ensure a comprehensive understanding of digitalization processes and practices;

ii. To allocate resources to improve digital infrastructure within libraries, including upgrading internet connectivity, investing in digital preservation systems, and providing access to state-of-the-art digital tools and technologies. This investment will help to overcome challenges related to inadequate internet access and poor infrastructure, ensuring smoother digitization processes and better access to digital resources for library users;

iii. To foster collaborative partnerships with other institutions, organizations, and technology providers to leverage resources, expertise, and best practices in digitalization. By collaborating with external partners, libraries can access additional funding, technical support, and knowledge-sharing opportunities, enhancing their capacity to digitize resources effectively and sustainably;

iv. To adopt a user-centered approach to digitization efforts by soliciting feedback from library users and stakeholders to understand their needs, preferences, and challenges. By involving users in the digitization process, libraries can ensure that digital resources are relevant, accessible; and

v. To develop comprehensive policies and guidelines for digitalization initiatives, covering areas such as; copyright compliance, data privacy, and digital preservation. These policies should be informed by best practices and legal requirements to ensure ethical and sustainable digitalization practices within libraries. Clear guidelines would help mitigate risks and ensure compliance with regulatory frameworks, fostering trust and confidence among library users and stakeholders.

5.5 Recommendations for Further Research

This research was carried out in public and private Universities in Zanzibar. The following are the recommendations for future research based on the findings.

i. User-Centered Studies: Conducting user-centered studies would be invaluable for gaining insight into the needs, preferences, and behaviors of library users in digital resources and services;

ii. Technological innovations: investigating the role of emerging technologies in enhancing digitalization processes and outcomes in libraries holds significant potential. Research in this area could identify opportunities to streamline digitization workflows, improve data management practices, and enhance the accessibility and discoverability of digital library collections, paving the way for more efficient and effective digitization practices;

iii. Policy and governance research: this part would examine the impact of policy and governance frameworks on digitalization practices and outcomes in libraries would be crucial for ensuring ethical and sustainable digitization practices. Research in this area could evaluate the effectiveness of existing

policies, identify gaps and challenges, and propose recommendations for policy reform to better support digitalization efforts and ensure ethical and sustainable practices in libraries.

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APPENDICES

APPENDICES 1: Questionnaire

Dear respondent,

I'm Abubakar a Master of Library Information Management (MLIM) student of Open University of Tanzania (OUT) currently; I'm doing a study on The analysis of academic libraries digitization in Zanzibar. A Case of Study of SUZA and SUMAIT Universities ‖. You are kindly request to fill in the attaché's questionnaire and return it to a person who gave you.

All the information you will provide will be treated in confidence and will be used only for academic purposes and not otherwise.

Yours sincerely,

Mr. Abubakar

MLIM student.

Please put a tick (√) in an appropriate answer.

Q1:**Personal Information**

1. Age _____

2. Sex _____

3. Level of education

a)Certificate b) Diploma c) Degree d) Master e) PhD

Q2 **Performance of Libraries Digitization materials in academic libraries**

(I)The librarians are not proactive to digitization?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong agree (**)**

(ii) Digital resources are utilized adequately by students

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(iii) The digital library training is offered by University?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(iv) The system has ability to retrieve information ?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(v) I can access digital library both at University and home?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

Q3 Materials that currents been digitalized in academic libraries

(i) Faster access to digital materials

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(ii) Wider access of digital materials

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagreed ( )

(iii) There is a clear cut policy on information preservation in academic library

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(iv) There is a local shared material between Universities

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree **( )**

Q4 Challenges of materials digitization in academic libraries

(i) Staff and student's skills competencies on the digitization of library resources?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(ii) I can ability to convert traditional library resources into digital images?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(iii) Infrastructure to contain the digitization process?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

(iv) Still dependent on analogue/ traditional system of librarianship?

Strong agree ( ) b Agree ( ) c Neutral ( ) d Disagree ( )

Strong disagree ( )

APPENDIX II: Interview Guide

Checklist for the interview (key informants) interview guide for directors of libraries and head of ICT departmentof SUZA and SUMAIT.

1. What experience and expertise do you offer that can benefit the digital library initiatives?
2. Please provide an example of the most successful digital initiative that you have led.
3. What are the challenges that the library faces in its provision of digital library services?
4. Does the librarian have gat some refresh courses for updating knowledge?
5. Does your library have a written digitization policy endorsed by management of your library?
6. Do you think there is enough materials for digitization? If yes mention at least three materials for library digitization in your library. If no, why?
7. Do you think administrative procedures support activities required by digital library change? Probe for issues like request and budget
8. What is your long-term plan – where are you going to be in 5 years?
9. In your opinion, what should be done to improve the digitization of the academic library?
10. What would be your recommendations for the library in sustaining the digital library?

Appendix III: Clearance Letters

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/ PG201705243 **27th November, 2023**

Vice Chancellor,
Al-Sumait University,
P.O.Box 1933,
TOWN WEST.

Dear Vice Chancellor,

RE: RESEARCH CLEARANCE FOR MR. ABUBAKAR MOHAMED SALUM, REG NO: PG201705243

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Mr. Abubakar Mohamed Salum, Reg. No: PG201705243),** pursuing **Master of Library and Information**

Management (MLIM). We here by grant this clearance to conduct a research titled **"Analysis of Academic Libraries Digitization in Zanzibar: A Case Study of the State University of Zanzibar (SUZA) and Abdurrahman Al-summit University (SUMAIT)"**. He will collect his data at your university from 1st December 2023 to 31st January 2024.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof. Magreth S.Bushesha

For: VICE CHANCELLOR

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/ PG201705243 **27th November, 2023**

Deputy Vice Chancellor,
The State University of Zanzibar,
P.O. Box 146,
SOUTH UNGUJA.

Dear Deputy Vice Chancellor,

RE: RESEARCH CLEARANCE FOR MR. ABUBAKAR MOHAMED SALUM, REG NO: PG201705243

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

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Management (MLIM). We here by grant this clearance to conduct a research titled **"Analysis of Academic Libraries Digitization in Zanzibar: A Case Study of the State University of Zanzibar (SUZA) and Abdurrahman Al-summit University (SUMAIT)"**. He will collect his data at your university from 1st December 2023 to 31st January 2024.

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Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof. Magreth S.Bushesha

For: VICE CHANCELLOR

THE STATE UNIVERSITY OF ZANZIBAR
192 TUNGUU ROAD,
P.O.Box 146
Simu: +255773333167
72214 Kati, Zanzibar – Tanzania
E-mail: vc@suza.ac.tz
Web site: www.suza.ac.tz

CHUO KIKUU CHA TAIFA CHA ZANZIBAR
192 BARABARA YA TUNGUU,
S.L.P 146
Tel: +255773333167
72214 Kati, Zanzibar – Tanzania
E-mail: vc@suza.ac.tz
Web site: www.suza.ac.tz

HA.248/299/02/13 **11/01/2024**

Ndugu Abubakar Mohamed Salum
Chuo Kikuu Huria Tanzania
Tawi la Zanzibar
0776 440 440

RUHUSA YA KUFANYA UTAFITI

Kwa heshima naomba uhusike na mada ya hapo juu

Chuo Kikuu cha Taifa cha Zanzibar (SUZA), kimepokea barua ya ruhusa ya kufanya Utafiti hapa SUZA kutoka Ofisi ya Makamu wa Pili wa Rais ya Ndugu **Abubakar Mohamed Salum** ambae ni mwanafunzi kutoka Chuo Kikuu Huria anaesoma Shahada ya Uzamili katika fani ya **Maktaba na Usimamizi wa Taarifa** kufanya utafiti katika mada inayohusiana na **"Analysis of Academic Libraries Digitalization in Zanzibar".**

Chuo hakina pingamizi kuhusu suala hilo na utafiti huo utafanyika kuanzia tarehe **04/12/2024** hadi **04/03/2024** na tunakutakia kila la kheri katika utafiti wako na tunakuahidi kupata mashirikiano mazuri kutoka kwetu.

Tunatanguliza shukrani.

Ahsante,

THE STATE UNIVERSITY OF ZANZIBAR
P.O. BOX 146
ZANZIBAR
TANZANIA
SUZA

Prof. Moh'd Makame Haji,
Makamu Mkuu wa Chuo,
Chuo Kikuu cha Taifa cha Zanzibar.

SERIKALI YA MAPINDUZI YA ZANZIBAR
AFISI YA MAKAMU WA PILI WA RAIS,

22279 Barabara ya Vuga,
Vuga, S.L.P. 239,
70460 Mjini Magharibi, Zanzibar

Tovuti : www.ompr.go.tz
Barua pepe : Info@ompr,go,tz

CA.33/411/01-I/ 2 **05/12/2023.**

MAKAMO MKUU WA CHUO,
CHUO KIKUU CHA TAIFA CHA ZANZIBAR (SUZA),
ZANZIBAR.

MAKAMO MKUU WA CHUO,
CHUO KIKUU CHA ABDUL-RAHMAN AL-SUMAIT,
CHUKWANI,
ZANZIBAR.

KUH: RUHUSA YA KUFANYA UTAFITI

Kwa heshima, naomba uhusike na mada ya hapo juu.

Serikali ya Mapinduzi ya Zanzibar imemruhusu **Ndg. Abubakar Mohamed Salum** mwanafunzi kutoka **Chuo Kikuu Huria cha Tanzania** anaesomea **Shahada ya Uzamili** katika fani ya **Maktaba na Usimamizi wa Taarifa** kufanya utafiti katika mada inayohusiana na **"Analysis of Academic Libraries Digitalization in Zanzibar"** Utafiti huo utafanyika katika Chuo Kikuu cha Taifa cha Zanzibar (SUZA) pamoja na Chuo Kikuu cha Abdul-Rahman Al-Sumait, Zanzibar kuanzia tarehe **04/12/2023** mpaka **04/03/2024.** Tunaomba asaidiwe ili aweze kukamilisha utafiti huo.

Kwa nakala ya barua hii mara baada ya kumaliza utafiti, mtafiti anatakiwa kuwasilisha nakala (copy) 3 za ripoti ya utafiti huo, Afisi ya Makamu wa Pili wa Rais - Zanzibar.

Naambatanisha na kivuli cha kibali cha kufanyia utafiti.

Wako mtiifu,

Siajabu S. Pandu

SIAJABU S. PANDU,
/KATIBU MKUU,
AFISI YA MAKAMU WA PILI WA RAIS,
ZANZIBAR.

NAKALA: Ndg. Abubakar Mohamed Salum (0776 440440).

بسم الله الرحمن الرحيم

ABDULRAHMAN AL-SUMAIT UNIVERSITY
جامعة عبد الرحمن السميط

Center for Research and Postgraduate Studies
مركز البحوث والدراسات العليا

Kumb. Na. SU/CRPS/23/269

08/12/2023

Katibu Mkuu,
Ofisi ya Makamu wa Pili wa Rais,
Serikali ya Mapinduzi ya Zanzibar
Zanzibar

KUH: RUHUSA YA KUFANYA UTAFITI CHUO KIKUU CHA ABDULRAHMAN AL-SUMAIT, NDUGU ABUBAKAR MOHAMED SALUM, CHUO KIKUU HURIA CHA TANZANIA

Kwa heshima, tafadhali rejea barua yako Kumb. Na. CA.33/411/01-I/62 ya tarehe 05/12/2023 kuhusu mada hiyo hapo juu

Napenda kukujulisha kwamba Chuo Kikuu cha Abdulrahman Al-Sumait kitampa ushirikiano atakaohitaji **(04/12/2023 mpaka 04/03/2024)** Ndugu Abubakar Mohamed Salum wa Chuo Kikuu Huria cha Tanzania ili aweze kukamilisha utafiti wake wa Shahada ya Uzamili juu ya mada inayohusiana na "***Analysis of Academic Libraries Digitalization in Zanzibar.***"

Wako mwaminifu,

Prof. Dr. Yunis Abdille Musa
Mkurugenzi
Kituo cha Utafiti na Masomo ya Juu
Chuo Kikuu cha Abdulrahman Al-Sumait

Nakala:

- Ndg. Abubakar Mohamed Salum (**0776 440 440**),
  Chuo Kikuu Huria cha Tanzania.
- Makamu Mkuu wa Chuo,
  Chuo Kikuu cha Abdulrahman Al-Sumait.
- Naibu Makamu Mkuu wa Chuo (Taaluma)
  Chuo Kikuu cha Abdulrahman Al-Sumait.