



# The Role of Tanzanian Academic Libraries in Promoting Scholarly Communication through Open Access

## A Literature Review

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### Abstract

This study examined the role of Tanzanian academic libraries in promoting scholarly communication through open access. A desktop documentary review was used to specifically study the status of open access platforms, ways of promoting open access scholarly communication, and factors deterring academic libraries from fostering scholarly communication through open access. The desktop documentary review involved seven university repositories purposely selected from the directory of institution repositories (OpenDOAR). Quantitative and qualitative survey designs on the open access repositories were used. The information associated with the university repositories was gathered from their respective web pages. A documentary review of the studies on open access scholarly communication was conducted to gain insights into the phenomenon under study. The surveyed data were both quantitatively and qualitatively analysed. Quantitative data were analysed using Microsoft Excel, a computer application software, whereas qualitative data were subjected to the content analysis method. The findings indicate that the surveyed repositories were operational and guided by policy, whereas library websites, repositories and digital libraries are used in promoting open access scholarly communication. However, the factors that deter academic libraries from promoting open access scholarly communication are related to financial, infrastructure, human resources or expertise and university management. The study recommends that Tanzanian universities improve planning for open access, commitment, support and engagement in the training and retraining of its practitioners for effective scholarly communication.

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### Introduction

The advanced development in Information and Communication Technology (ICT) has impacted and changed the roles of many areas in today's society, including academic libraries, in promoting scholarly communication through the dissemination of scholarly works (Dintoe, 2018:3). As a result, most institutions focus on digital technology in terms of tools, techniques and sources used for conducting academic works in all areas of science as well as ways of making research visibility for scholarly communication (Trotter *et al.*, 2014:6). The role of academic libraries is to provide the university community with formal and informal scholarly communication processes including Open Access (OA) journals in their library catalogues and e-journals through depositing their research outputs in open access platforms for scholarly communication (Powdwal, 2017:2). It is up to the libraries to set up and manage open access platforms for scholarly communication. Scholarly refers to a system through which research and other academic works are created, evaluated for quality, disseminated to the scholarly community and preserved for future use (Klain-Gabbay & Shoham, 2016:4). In light of this fact, Jain (2012:8) observed that academic libraries have a role in ensuring that open access is built up with the following features to support scholarly communication: freely available to scholarly communication, free of copyright and licensing restrictions, and materials are available online and can be freely used by anyone. Most academic libraries in developed regions, such as European and North American countries, have witnessed these open access features and are tremendously advanced in scholarly communication.

In developing countries, this endeavour has been fairly earmarked, and efforts to become effective in open access scholarly communication remained unrevealed (Mwilongo, 2018:3; UNESCO, 2019:11; Huang, Cox & Saffi, 2021:5). In Tanzania, Dulle (2010:3) and Mwinyimbegu (2019:9) observed that poor research conditions and researchers' low Internet self-efficacy such as inadequate information for search and online publishing skills, and a lack of policy guidelines on the use of open access are the main problems facing academic libraries in promoting scholarly communication to use open access. In addition, Mwilongo (2018:7), Muneja and Ndenje-Sichalwe (2019:10), Nunda and Elia (2019:6), and Kayungi, Ndenje-Sichalwe and Manda (2021:5) point out other related issues of open access for scholarly communication. However, fewer issues were addressed regarding the role of academic libraries in promoting scholarly communication through open access platforms, which this chapter intends to examine. In this regard, academic libraries have

a role in ensuring that quality and sufficient scholarly works are frequently uploaded and available for use. In this, Vasile *et al.*, (2017:13) opine that academic libraries are custodians of the institutional repositories and have a role in managing the collection more efficiently to easily disseminate the research activities and preserve digital assets generated by researchers.

### *Objectives*

The main objective of this chapter is to examine the role of Tanzania academic libraries in promoting scholarly communication through open access. Specifically, this chapter intends to address three main research questions:

1. What is the status of registered Tanzanian academic libraries for scholarly communication?
2. How do Tanzanian academic libraries use open access for scholarly communication?
3. What factors deter Tanzanian academic libraries' use of open access in promoting scholarly communication?

### *Review of the Literature*

#### *Perspectives of open access in scholarly communication*

Open access provides the opportunity for wider access to scholarly communication. In view of this, scholarly communication through open access leads to self-archiving, the main strategy for institutional repository development (Mangai & Ganesan, 2021:7). Open access connects people with information and promotes greater access to scholarly works. Open access has potentially increased scholarly communication, access and citation because of increased numbers of downloads (Mierzecka, 2019:4). Most academic libraries in developed countries have, over the years, begun promoting themselves to a new environment for scholarly communication through open access, institutional repositories and preprints (Sandy & Mattern, 2018:12). This is attributed to the explosion of Internet activities in open access journals which had been available since 1990 following the widespread availability of Internet services. It was further noted that the idea and practice of providing free online access to journal articles began at least a decade before the term 'open access' was formally created (Swan, 2012:7). Before this endeavour, scholarly communication was carried out through observation of a phenomenon and new experiments whereby scientists shared data and information via personal letters; a method used in transferring information related to research carried out between individuals and groups (Fjällbrant, 2012:10). Open access came into being to improve visibility, global presence, increase accessibility and collaboration which impacted both citations

and applications of scholarly works, and further encouraging scholarly communication (Harley, Acord, Earl-Novell, Lawrence & King, 2010:11).

### *Ways of scholarly communication through open access*

Scholarly communication refers to the system through which research and other scholarly works are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. It promotes a shared system of research and scholarship (Lynch, 2020:12). Academic libraries need to develop new resources and services which support the facilitation of scholarly communication through open access platforms, including the university repository. Chewe *et al.*, (2021:9) argue that academic libraries have to use Internet services to access preserved institutional resources. The academic libraries and the librarians have a role to ensure that the available platforms, such as the Online Public Access Catalogue (OPAC), institutional repository, digital library and library websites are crucial and properly managed to promote open access scholarly communication (Kassahun & Nsala, 2015:12; Sejane, 2017:9). The institutional repository software, mostly DSpace and Eprint, are capable of hosting, preserving and providing open access to scholarly works and thus enable scholarly communication (Ramdas, 2012:9; Nemati-Anaraki & Tavassoli-Farahi, 2018:10-11). Open access for scholarly communication has the potential to reach through distance learning, and thus academic libraries have to ensure that they sincerely support the academic works of researchers and the academic community (Mwilongo, 2018:8). Assessment of the quality of open access collections based on the recommended guidelines such as the institutional repository and quality assurance policies, are important for effective scholarly communication (Sejane, 2017:10; Shapiro, 2019:12).

### *Factors influencing promotion of scholarly communication through open access*

Efforts of academic libraries to promote open access scholarly communication are generally influenced by various factors that are subject to the institution's financial status, infrastructures, human resources or expertise and institutional management (Klain-Gabbay & Shoham, 2018:12; Narayan *et al.*, 2018:13; Mwinyimbegu, 2019:11). On financial status, Muneja and Ndenje-Sichalwe (2019:14) narrate that universities have inadequate funding to support open access management; training, maintenance and repair of open access platforms; subscription to other data sources; and professional development programs. The academic library budget for most universities in Tanzania and other developing countries keeps dwindling following the scarce financial resources to allocate to all the university units and services. In addition to the infrastructure, the literature indicates that access to Internet services has positively influenced academic libraries in fostering

open access scholarly communication (Mwilongo, 2018:11; Mwinyimbegu, 2018:12; Kayungi, Ndenje-Sichalwe & Manda, 2021:9). For example, Narayan *et al.*, (2018:15) argue that poor Internet connection for open access of scholarly works contribute to the dilution of the quality of research outputs of most developing countries researchers. Other factors are related to university management support and commitment to academic libraries' open access initiatives (Mwilongo, 2018:9; Narayan *et al.*, 2018:8). The issue of lack of technology-know-how to locate open access resources and the inability to choose from the vast number of information resources is always influencing library information professionals and the academic community in promoting scholarly communication (Klain-Gabbay & Shoham, 2018:10). However, a low level of awareness exists about existent open access repositories despite their availability on websites and institutional repositories and poor information literacy skills to search online materials influence open access scholarly communication (Muneja & Ndenje-Sichalwe, 2019:12; Mwinyimbegu, 2019:9).

## Methodology

This study used a desktop documentary review to examine the role of Tanzanian academic libraries in promoting scholarly communication through open access. The survey involved seven higher learning institutions purposely selected from the global directory of institution repositories (OpenDOAR, 2022). These institutions were the University of Dar es Salaam (UDSM) in Dar es Salaam, the Sokoine University of Agriculture (SUA) in Morogoro, the Muhimbili University of Health and Allied Science (MUHAS) in Dar es Salaam and the Mzumbe University (MU) in Morogoro. Other repositories were the Open University of Tanzania (OUT), the Saint Augustine University of Tanzania (SAUT) in Mwanza and the State University of Zanzibar (SUZA) in Zanzibar. Quantitative and qualitative desktop documentary reviews on the institutional repositories were used. The information associated with the institutional repositories was gathered from the respective institutions' web pages. A documentary review of the studies on open access scholarly communication was conducted to gain insights into the phenomenon under study. The surveyed data were both quantitatively and qualitatively analysed. Quantitative data were analysed using Microsoft Excel, a computer application software, whereas qualitative data were subjected to the content analysis method.

## Findings and discussion

*Status of the open access institutional repositories*

The findings of the desktop documentary review in open access institutional repositories for scholarly communication indicate that all desktop documentary reviews in open access repositories were available and easily accessed from their respective pages. The repositories comprised multidisciplinary, electronic institutional information resources and were freely accessible. The collections comprised publications, conference papers, journal articles and books. Table 3.1 presents detailed information on the surveyed open access institutional repositories.

Table 3.1: Open access Repository (n=7)

<b>Repository</b>	<b>Status</b>	<b>Software</b>	<b>Establishment</b>	<b>Resources</b>
UDSM	Operates with policy	DSpace	23 March 2016	6579 uploads from 19 communities as of 25 March 2022
SUA	Operates with policy	DSpace	20 May 2015	5346 uploads from 9 communities as of 25 March 2022
MUHAS	Operates with policy	DSpace	24 August 2012	3 uploads from 2 communities as of 25 March 2022
MU	Operates with policy	DSpace	2 July 2016	3309 uploads from 13 communities as of 25 March 2022
OUT	Operates with policy	Eprint	10 October 2012	2058 uploads as of 25 March 2022
SAUT	Operates with policy	DSpace	20 March 2015	109 uploads from 5 communities as of 25 March 2022
SUZA	Operates with policy	DSpace	July 2014	38 uploads from 7 communities as of 25 March 2022

Source: Open access repositories (OpenDOAR, 2022).

Table 3.1 shows that all the repositories are operational and have policies for digital collection management. The majority, six or 75% of the university

repositories employed DSpace software for digital collection management. In this, academic libraries have a role in ensuring that they select the best management software for effective scholarly communication of the digital collection. Despite the fact that the institutional repositories were established between the years 2012 and 2016, they are experienced, but they fairly hold few collections irrespective of their time in existence. Figure 3.1 presents the time when the university repositories were established.

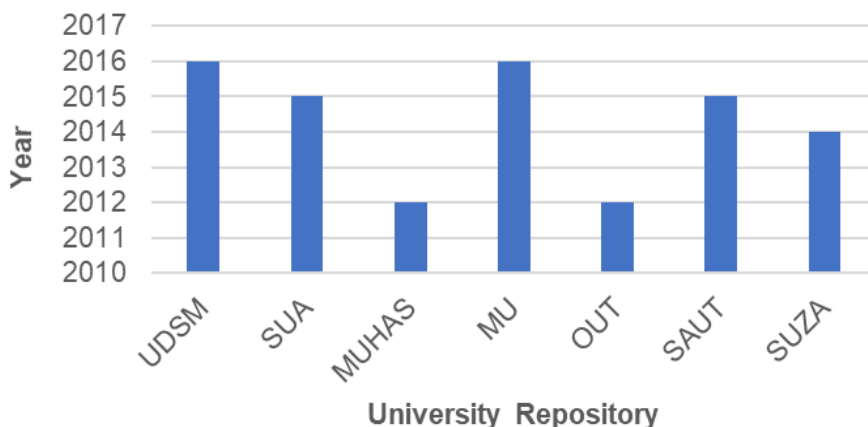


Figure 3.1: Time of the university repository establishment (Research Findings, 2022).

Figure 3.1 shows that MUHAS and OUT established their repositories in 2012, followed by SUZA in 2014, SUA and SAUT in 2015, and UDSM and MU in 2016. The differences in the time of establishment may be contributed to various factors, including the infrastructure for open access scholarly communication, insufficient experts for the establishment and financial issues. However, the OUT established its repository earlier than its counterparts because of the nature of the programmes offered, which are distance-based learning and thus had to break the distance barrier in education by the provision of open access scholarly communication. In this endeavour, academic libraries have to promote sharing of scholarly information, widen interaction of open access platforms, and enhance recognition of one's academic capability and the impact of the preserved knowledge.

Table 3.1 and Figure 3.2 present the distribution of uploads for open access scholarly communication of the university repositories.

## Academic Libraries in Africa

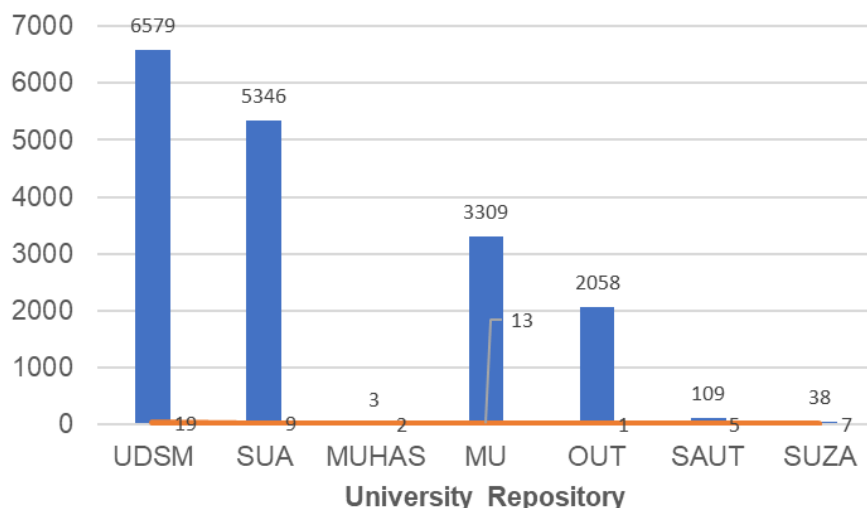


Figure 3.2: Institutional repository communities and uploads (Research Findings, 2022).

Findings in Figure 3.2 show that UDSM, MU and SUA have a substantial number of uploads compared to other respective repositories. The number of uploads at UDSM, MU and SUA correlates to the number of communities which archive their scholarly works to the repository. UDSM has 19 communities, MU has 13 and SUA has 9. However, despite the number of communities in these repositories, the institutions established this service between 2015 and 2016 and have advanced in using open access to promote scholarly communication. The upload of other repositories of SUZA, SAUT and MUHAS is fairly promising despite the earlier establishment of open access scholarly communication. This finding draws attention to the academic libraries trying to improve the repository and upgrade the collection.

Furthermore, Mwilongo (2018:7) and Mwinyimbegu (2019:9) argue that for academic libraries to maintain visibility and open access to scholarly communication, they should be innovative in deploying digital technologies and improve the quality of scholarly works in order to meet and satisfy their user needs. The institution repository has to be frequently updated with current resources, and its collection must be monitored and evaluated to identify strengths and weaknesses. One of the innovative open access initiatives is the integration of the repositories with other government agencies for visibility and one-stop access points.

The Tanzania Commission for Science and Technology (COSTECH) has centralised the institutional repositories for easy and free access to scholarly works from one point. The platform is officially known as COSTECH

Integrated Repositories (CIR). CIR is a digital service that combines the institutional repositories in Tanzania, preserves and freely disseminates scholarly works to the public. This initiative has considered the role of having a central point of access to scholarly works from different institutions and put forward the importance of preserving an institution's legacy, and facilitate digital preservation and scholarly communication. All the Tanzanian desktop documentary repositories registered at OpenDOAR (2022) are integrated with COSTECH for its legacy and scholarly communication (COSTECH, 2022). On the other hand, the universities must play a pivotal role in ensuring that timely and right information is created, stored and freely accessed by its community, researchers, stakeholders and the public in general.

#### General roles of academic libraries in open access scholarly communication

Open access scholarly communication is an increasingly significant component in the provision of academic publications and information resources. The development of institutional repositories is a response to open access initiatives. Academic libraries are considered as a platform or house of knowledge through which users interact with academic works. Open access scholarly communication is being developed throughout the world as a consequence of the availability of scholarly resources in electronic formats and in response to open access policies and mandates. Amongst other roles, academic libraries are crucial in the management of the institutional repository. In performing the managerial functions, the academic libraries have to perform the following general functions (Mnzava & Chirwa, 2018:10; Mwilongo, 2018:9; Muneja & Ndenje-Sichalwe, 2019:11; Mwinyimbegu, 2019:9; Nunda & Elia, 2019:11; Kayungi, Ndenje-Sichalwe & Manda, 2021:9):

- ◆ The academic libraries have to solicit, identify, select, organise, preserve, disseminate and develop open access scholarly communication policy or institutional repository policy; guide users to open access scholarly communication; adopt new and emerging technologies related to open access; update the open access collection; and evaluate and monitor the performance of the open access platform.
- ◆ Market the open access platform; promote openness in open resources; advocate, conducting digital information literacy training; strengthen relationships with users and developers of scholarly works for open access; sensitise self-archiving and develop subject-based guides for easy scholarly works access; manage intellectual property rights; and promote appropriate open access licensing.
- ◆ Establish a network with other information scientists and libraries on new methods and technologies for open access platforms, including library

websites, institutional repositories or digital libraries, good management and sustainability; work collaboratively to increase institution visibility, attract networking for expertise and fiscal resources.

- ◆ Use embedded librarianship and subject-based information specialists of the institution communities for improving uploads, institution and scholars' visibility, quality academic works, and increased scholarly output; promote usage, resources-based learning and user-centred learning on the open access platform.
- ◆ Create awareness for scholars on best practices to self-archive their scholarly works which should be legally protected to avoid copyright infringement on usage and adoption of institutional repositories. In this, academic libraries should be dynamic in such a way that they support conventional awareness programmes with information and communication technology to address, build and maintain a harmonised operational environment and the repository.

### Conclusion

Scholarly communication and the open access movement have come a long way in recent years; library websites, digital libraries and institutional repositories play a vital role in higher learning and research institutions in today's information era. They have to promote sharing of scholarly information, widening interaction of open access platforms, enhancing recognition of one's academic capability and the impact of the preserved knowledge. This may lead to a central point of access to scholarly works from different institutions and emphasise the importance of preserving an institution's legacy, facilitating digital preservation and scholarly communication. Thus, call attention to academic libraries to improve the repository and upgrade the collection access to quality scholarly works and ensure implementation of open access institutional repositories to meet and satisfy the needs of the academic community and the public.

### *Recommendations*

Based on the study objectives and survey of the purposely selected open access repositories in Tanzanian universities, the study provides the following recommendations to open access repository managers, academic libraries, information professionals and other stakeholders who are involved in the planning, implementation and management of the open access repository:

- ◆ Open access repositories' developers, administrators and pioneers should be involved in marketing, creating awareness and advocacy, and maintaining communication and collaboration with other members who

are not well informed on the usefulness of the open access platform or institutional repository for scholarly communication.

- ◆ The university should have a well-planned framework for training and retraining library information professionals on open access repositories in order to change their attitude and improve their skills and technical knowledge on the changing technologies and platforms, infrastructure and disaster management.
- ◆ The university should ensure that sufficient budget is allocated for the library management of the open access repository for scholarly communication. The university should provide significant support on monetary issues and other proposed innovative strategies for repository management, visibility and sustainability.
- ◆ Universities which have not yet established an open access repository for scholarly communication are recommended to develop the tool to ensure effective preservation and dissemination of institutional information resources, locate it centrally through COSTECH IR, and ultimately registered by the global repository directory (OpenDOAR, 2022).

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