

Competence in using open access institutional repositories for

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improved accessibility of research outputs: The case of selected academic institutions in Tanzania

Abstract

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Purpose: This study was carried out to investigate the competency level in accessing institutional research productivity among users of academic libraries in Tanzania. Specifically, the study focused on examining the level of competency, assessing where users acquired skills of accessing institutional research productivity, establishing the attitude of library users towards acquiring skills, and identifying the constraints faced in acquiring OAIRs skills.

Methodology: The study employed a cross-sectional research design. Systematic, random, and purposive sampling procedures were used to obtain a total of 292 respondents and eight key informants. Both quantitative and qualitative data were collected from academic staff, research fellows, and librarians. Structured questionnaire, interview schedule, and document analysis were used to collect data. Quantitative data were analysed using the SPSS package V20.0, while qualitative data were analysed using content analysis.

Results: Key findings indicated that 28.4% of the users are computer competent, information search literate (27.1%), communication skilled (27.1%), and competent in scholarly publishing and self-archiving (20.5%). Results indicated that users acquired skills of accessing institutional research productivity from librarians (22.6%) and library technicians (18.2%). Also, results revealed that 57.9% were positive towards acquiring skills, and 56.9% agreed that acquiring skills of OAIRs facilitates free and quick access.

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However, lack of awareness of the presence of OAIRs (38.6%), unawareness of OAIRs policy (22.8%), and lack of budget for training and advocacy of OAIRs (19.3%) were identified as constraints faced in acquiring OAIRs skills.

Conclusion: The study concluded that the competency level on accessibility of institutional research productivity is still low among library users, even though the use of OAIRs in Tanzania is still low.

Recommendation: Recommended to review OAIRs policies for managing OAIRs, especially putting up a mechanism for enforcing training among users, and investment in infrastructure for improved accessibility of institutional research productivity in Tanzania institutions.

Keywords

Open Access Institutional Repository (OAIRs), academic staff attitude, OAIRs competency level, Higher Learning Institutions, Tanzania

Introduction

Open Access Institutional Repositories (OAIRs) refer to a collection of full-text documents available in online databases on the Internet that can be accessed freely and instantly. OAIRs collect scholarly publications from members of the institution and preserve them. [Bamigbola \(2017\)](#) revealed that scholarly publications available in the OAIRs cut across many fields, including theses, dissertations, projects, course notes, seminar papers, conference proceedings, administrative documents, learning objects, and other forms of grey literature. These scholarly publications are collected, uploaded, and disseminated to the institution community freely without any barriers.

To improve accessibility of institutional research productivity, competency among users is required. Currently, for better access to different scholarly publications in OAIRs requires users to be proficient. Users of OAIRs require a variety of skills to effectively navigate and utilize the resources available in OAIRs. These skills may include information retrieval skills, digital literacy, research skills, collaboration and networking skills, and ICT skills. According to [Bamigbola \(2017\)](#) accessibility of institutional research productivity requires users to be skillful in digital literacy, media literacy skills, and have ICT competency. Moreover, [Alhija and Majdob \(2017\)](#) and [Bamigbola \(2017\)](#) averred that there is a lack of skills among some lecturers, which could undermine the accessibility of research productivity in OAIRs.

These skills can be acquired through various sources, including from library staff, and colleagues, and supervisors. Also, library and information centers can provide proper training that enhances knowledge and skills in accessing OAIRs research productivity. Since users of OAIRs lack competency in the accessibility of institutional research productivity, they have a more or less positive attitude towards and are interested in being

competent in the use of OAIRs. However, confusion about where to acquire those skills discourages them; notwithstanding, for OAIRs to successfully serve their potential, users are called to be competent in accessing OAIRs research productivity.

Efforts at addressing the lack of competency among OAIRs users, such as training, formulation, and implementation OAIR policies as well as provision of funds, have been made by the institutions, yet the results have not yielded a positive result in addressing the problem. Additional step is needed to address in order to solve this situation. Library staff also needed to be competent to assist in delivering information services to users and train them on how to access OAIRs research productivity to obtain the information they need.

It is to noting that different research was done in relation to OAIRs competence in other countries. It is still needed to investigate more in Tanzania because there is low usage of OAIRs, as revealed by the study done by Mbughuni et al. (2022) and [Nunda and Elia \(2019\)](#), who reported that there are various OAIRs establishments in Tanzania, but still potential users have not yet fully explored them. It is on this basis that this study is undertaken to investigate the OAIRs competency level among users in the accessibility of OAIRs research productivity in academic institutions in Tanzania.

Problem statement

The OAIRs' competency among users of OAIRs is important for improved accessibility of institutional research productivity. According to [Shahla \(2019\)](#), the OAIRs competency among users improved accessibility of institutional research productivities, which enhance teaching, learning, and research, increases citation and prestige among academic staff. For library users to enjoy the benefits of OAIRs are required to possess enough knowledge and skills to be competent for full utilization. However, in most African institutions, especially in Tanzania, the level of OAIRs competency among users in academic institutions is unknown ([Kayungi et al., 2021](#); [Malekani and Kavishe, 2018](#); [Mbughuni et al., 2022](#); [Mwalubanda, 2021](#)). OAIRs' competency among users is a vital factor in the accessibility of institutional research productivity. Therefore, this study was carried out to investigate the competency level in accessing institutional research productivity among users of academic libraries in Tanzania.

Objective of the study

This study was carried out to investigate the competency level in accessing institutional research productivity among users of academic libraries in Tanzania.

Research questions

- Are OAIRs users competent in accessing institutional research productivity among users in academic institutions?

- Where do they acquire the skills of accessing institutional research productivity? ·
What is the attitude of library users towards acquiring skills for accessing institutional research productivity?
- What are the constraints faced by OAIRs users in acquiring OAIRs skills?

Literature review

Competence level on the accessibility of institutional research productivity. Unexpectedly, previous studies found that various users of OAIRs in academic institutions were not much conversant or competent in accessing institutional research productivity uploaded in OAIRs. This statement is supported by [Ratanya \(2017\)](#) and [Chilimo \(2016\)](#), who conducted a study on institutional repository: access and use, the results found associated low use and difficulties in self-archiving practices with incompetence among users of OAIRs. Another study by Solomon and Soyemi (2021) and [Nagappa and Santhosh \(2020\)](#) revealed that most of OAIRs users lack ICT skills; therefore, it is found very difficult for them to access research productivity uploaded in OAIRs. This implies that various OAIR users are not competent, and training to enhance competence on the accessibility of institutional research productivity in OAIRs among academic staff is rarely conducted.

On the other hand, librarians who are also academic staff were found to be more competent in accessing open source software, such as repositories, than other academic staff. This situation is related to the fact that librarians are custodians of repositories, so they have experience and also, they attend training regularly, which makes them more competent than other academic staff. [Baro et al. \(2019\)](#) emphasized that librarians have been trained on how to access institutional research output available in OAIRs; therefore, their level of digital literacy skills is reasonable.

To eliminate deficiencies in competency among OAIRs users, several studies reported that different institutions should try to impart knowledge and skills on how to access institutional research productivity uploaded in OAIRs, especially to academic staff. [Kayungi et al. \(2021\)](#) reported that academic staff should be equipped with the skills to be competent in the accessibility of institutional research productivity. Without competency in the accessibility of institutional research productivity, OAIRs will not be used.

Skills acquired to access institutional research productivity of OAIRs. To access institutional research productivity uploaded in OAIRs it requires different skills such as digital literacy, media literacy, and ICT skills. Unexpectedly, various studies found that users of OAIRs in academic institutions do not have enough skills to access institutional research productivity uploaded in OAIRs. [Ratanya \(2017\)](#) associated low use and difficulties in self-archiving with the lack of skills on the use of OAIRs. A similar study on the skills required for using OAIRs among academic staff revealed that most of the OAIRs users do not have enough skills, such as digital literacy, media literacy, and ICT

skills; therefore is very difficult for them to know how to access institutional research productivity uploaded in OAIRs. Yet, training to enhance skills on the accessibility of institutional research productivity uploaded in OAIRs among academic staff was reported to be rarely conducted (Solomon and Soyemi, 2021; [Nagappa and Santhosh, 2020](#)).

To eliminate deficiencies in skills studies reported that different institutions should try to impact skills on how to access institutional research productivity in OAIRs to users, especially academic staff from different sources. [Kayungi et al. \(2021\)](#) reported that libraries should impact skills by training and conducting different workshops. Colleagues and supervisors who have skills should impact their colleagues. In this regard, skills on accessibility of institutional research productivity in OAIRs will ensure accessibility of institutional research productivity uploaded in OAIRs. Also, the library management should equip librarians with the necessary skills to be able to offer services to users. [Ngure and Gatiti \(2015\)](#) conducted skills training to staff to ensure there is the same level of skills across university campuses for the benefit of their users.

Attitude of library users towards acquiring skills. The attitude of academics towards acquiring skills may be positive or negative, depending on the approach adopted by the institution. [Ukwoma and Ngulube \(2019\)](#) pinpointed that the attitude of acquiring skills of using OAIRs will depend on how useful the OAIRs have proved to their colleagues. Users of OAIRs have more or less a positive attitude towards acquiring skills related to access to institutional research productivity if OAIRs are effectively operated. According to [Sankar and Kavitha \(2018\)](#) users have a positive attitude in acquiring skills because they are eager to be proficient with OAIRs to enhance their research capabilities and visibility. Other users of OAIRs have a positive attitude towards acquiring skills of using OAIRs because they want recognition, uploading their research output in OAIRs can add value to their work, such as increased citations, compliance with funder mandates, and preservation of research outputs.

[Namugera et al. \(2023\)](#), revealed that academics have a positive attitude in acquiring related skills to access institutional research productivity in OAIRs because using OAIRs motivates efficient, saves time, improves the discoverability of their research. Also, other users have a positive attitude in acquiring skills because the use of OAIRs minimizes challenges and support in the form of user guides, workshops, and help desks ([Sankar et al., 2018](#)). Overall, Attitude of library users towards acquiring skills varies but generally leans towards seeing repository skills as beneficial and worth investing time in mastering ([Jayakananthan et al., 2023](#)).

Constraints faced when trying to acquire OAIRs skills. Users have been encountering several problems when trying to acquire skills for accessing institutional research productivity uploaded in OAIRs. Most users who are academics are busy and find it difficult to allocate time for learning new skills related to skills to access of institutional research productivity in OAIRs. [Ngulube and Ukwoma \(2019\)](#) pinpointed that the lack of training resources makes it difficult to access institutional research productivity in

OAIRs. In institutions, there are insufficient training resources, such as workshops, tutorials, or documentation, to help users learn how to use the repository effectively.

According to [Saliu et al. \(2022\)](#), technical challenges are one of the factors that users face when trying to acquire OAIRs skills. Most users encountered complications in the user interface, technical support, or issues with repository software that can hinder their ability to access institutional research productivity in OAIRs. [Ladipo et al. \(2022\)](#) revealed that a lack of awareness and motivation on the benefits of using OAIRs may discourage investment in the effort required them to learn how to access institutional research productivity in OAIRs. Also, accessibility challenges, such as language barriers, a lack of assistive technologies, or non-inclusive training materials, can prevent some users from acquiring necessary skills. Understanding issues such as OAIRs policies, copyright issues, and institutional mandates can be complex and daunting for users, creating an additional barrier to learning how to access institutional research productivity in OAIRs effectively.

According to [Tenya et al. \(2023\)](#), insufficient resource is another constraint faced by users of OAIRs when trying to acquire OAIRs skills. Most institutions in Africa have limited access to computers, reliable internet connections, or other necessary technology can be a significant barrier for some users. Also, support availability and responsiveness of support staff can vary, and insufficient support can leave users struggling to overcome obstacles on their own. Moreover, addressing these constraints involves providing comprehensive training resources, simplifying repository interfaces, raising awareness of the benefits, and offering robust support systems to ensure users can effectively utilize institutional repositories ([Ngulube and Ukwoma, 2019](#); [Kari and Orji, 2022](#)).

Strategies to improve accessibility of institutional research productivity. Several studies have underscored the strategies for improving competency in accessibility of institutional research productivity in OAIRs ([Baro, 2023](#); [Ezema and Eze, 2024](#); [Kodua-Ntim, 2021](#); [Saliu et al., 2022](#)). The study conducted by [Ezema and Eze \(2024\)](#) revealed that to improve OAIRs' competency level among users for accessibility of institutional research productivity in OAIRs users should be equipped with the skills and knowledge needed to make researchers more accessible. According to [Saliu et al. \(2022\)](#) provision of regular training sessions and workshops focused on accessibility best practices in research, including how to publish in open-access journals, use accessible data visualization techniques, and create accessible documents. This will ensure that all staff and researchers are up-to-date on the latest accessibility standards and practices, leading to more consistent and inclusive research outputs.

In another study done by [Ukachi \(2018\)](#) emphasizing on creating awareness on the availability and accessibility of the scholarly materials in the Institutional Repository platform is one of the strategies adopted by the libraries in promoting scholarly communication using their Institutional Repository. This can be done by integrating accessibility training into the research methodology courses or professional development programs offered by the institution. As a result, it will embed accessibility as a core

competency for emerging researchers, ensuring that new graduates are prepared to produce and disseminate accessible research. According to Baro et al. (2023) revealed that a few IR have a clearly defined access policy; therefore, institutions should develop institutional policies that mandate or encourage accessible research practices, such as requirements for accessible formats or incentives for publishing in open-access journals. Mbughuni et al. (2022) and Kodua-Ntim (2021) found that incentives, recognition, and rewards to researchers who excel in making their work accessible will clear expectations and provide motivation for researchers to prioritize accessibility, leading to more widespread adoption of accessible practices across the institution.

Also, Kari and Orji (2022) explained that establishing mentorship programs will enable experienced researchers who are knowledgeable about accessibility to guide and support less experienced colleagues. This will facilitate the sharing of expertise and resources, helping to build a community of researchers who are competent in accessibility and can support each other's growth. These strategies can significantly enhance the competency of researchers and staff in making institutional research more accessible, ultimately leading to improved accessibility of institutional research productivity.

Theoretical and conceptual framework

This study will employ the Unified Theory of Acceptance and Use of Technology (UTAUT). This model was chosen because it has been used by different scholars to explain factors that influence the use of new technology. This theory was developed by Venkatesh et al. in 2003. The model consists of four variables, namely, Performance Expectancy: The individuals' trust that the use of the technologies will result in performance gains. Effort Expectancy: The comfort of use of the technologies. Social Factors: colleagues, peers, and supervisors trust that one should use the technologies. Facilitating Conditions: an organizational and technical infrastructure obligatory for the support of the technologies exists. The model also has four moderating variables, that is, education age, gender, and voluntariness of use, which are expected to affect directly or indirectly the accessibility competency level attitude of OAIRs users.

Conceptual framework. The study adopted all the constructs that were thought to fit in the study and replaced one of the constructs to formulate the conceptual framework for the study. Therefore, the independent variables included the motivating factors, technical factors, supervisors, colleagues, and facilitating factors, and the dependent variable was the competency on the accessibility of institutional research productivity. The moderators were age, sex, academic qualifications, competency, and working experience. The study replaced voluntariness with competency because the study wants to assess the level of competency among users of OAIRs for improved accessibility of institutional research productivity.

In the context of this study, motivating factors mean the degree to which academic staff members are motivated to be competent to access institutional research productivity

in OAIRs. Technical factors refer to how academic staff members are made easy to be competent to access institutional research productivity in OAIRs. Supervisors and colleagues mean how they encourage academic staff to be competent to access institutional research productivity in OAIRs. Facilitating condition means how academic staff can use different factors to be competent to access institutional research productivity in OAIRs. Therefore, based on the research conceptual frame, motivating factors, technical factors, supervisors, colleagues, and facilitating conditions have a significant relationship with the level of competency on the improvement of the accessibility of institutional research productivity in OAIRs. Also, gender, age, competency, and working experience are believed to have a significant relationship to accessibility of institutional research productivity in OAIRs (Figure 1).

Materials and methods

The study area was four selected public universities in Tanzania, namely: Mzumbe University (MU), Muhimbili University of Health and Allied Sciences (MUHAS), Sokoine University of Agriculture (SUA), and the University of Dar es Salaam (UDSM). These universities were selected because they have operational OAIRs that are used by academic members and researchers. Therefore, was believed to provide the needed data. A cross-sectional research design method was employed. Systematic random and purposive sampling were techniques used in this study. In systematic random sampling, every 6th academic staff member was picked from the list of academic staff members to obtain a representative in each selected university. The purposive sampling technique was used to

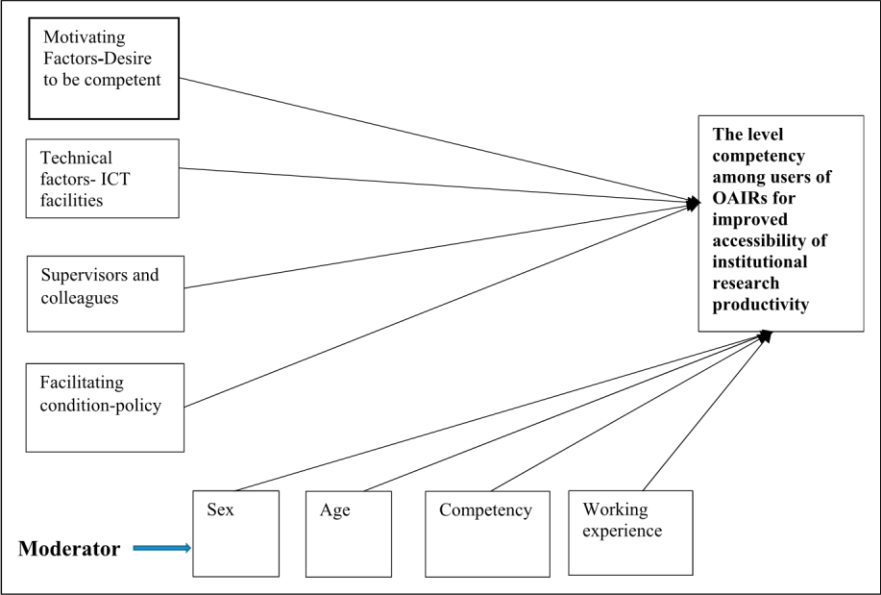


Figure 1. Modified conceptual framework for the study.

acquire eight key informants (Heads of Department, ICT, and Library Technicians) from the four universities. Key informants were selected to provide information concerning the level of competency among users of OAIRs. The population included 2894 respondents who were academic staff members from four selected public universities, and the sample size was 413 academic staff members obtained by using the formula known as Slovin’s ($n = N/(1+Ne^2)$). (See the sampling frame in Table 1).

The study collected quantitative primary data through a structured questionnaire distributed to 413 academic staff, that is, MUHAS (77), MU (47), SUA (43), and UDSM (125). A total of 292 questionnaires were filled out and returned, making a return rate of 70.7%. Qualitative primary data were collected through interviews with key informants (Four heads of department, two ICT technicians, and two library technicians). Also, universities’ OAIRs documents to understand the concept of the study and existing literature on the level of competency among users of OAIRs to get an overview were used to collect secondary data.

Quantitative data were analyzed using Statistical Packages for Social Sciences (SPSS) 16th version. Descriptive statistics were calculated to generate frequencies and percentages. Qualitative data were analyzed by using content analysis. Data obtained from the interview and other sources were organized into similar themes, which were addressed in a certain situation and presented in form of explanations.

Table 1. Sampling frame.

	MUHAS campus)	MU (main campus)	SUA (only main campus and SMC)	UDSM (main campus)	Total
Academic staff population (N)	693	236	427	1538	2894
The proportion from the 99.34 required ‘n’ (N/2894) * 413			61	219	413

Source: Mbughuni et al. (2022).

Results Number of respondents in each university

Figure 2 shows the number of academic staff in each university. The findings indicate that 42.85% of the respondents were from UDSM, 26.4% from MUHAS, 16.1% from MU, and 14.7% from SUA. The number of respondents demonstrates that academic staff are aware of the advantage of having OAIRs in the institution, and they have a positive attitude towards the accessibility of research reproductivity in OAIRs.

Demographic characteristics and the level of competence and accessibility of OAIRs research reproductivity

Table 2 shows the influence of demographic characteristics on the level of competence and accessibility of OAIRs research reproductivity. The results show that 52.3% of male

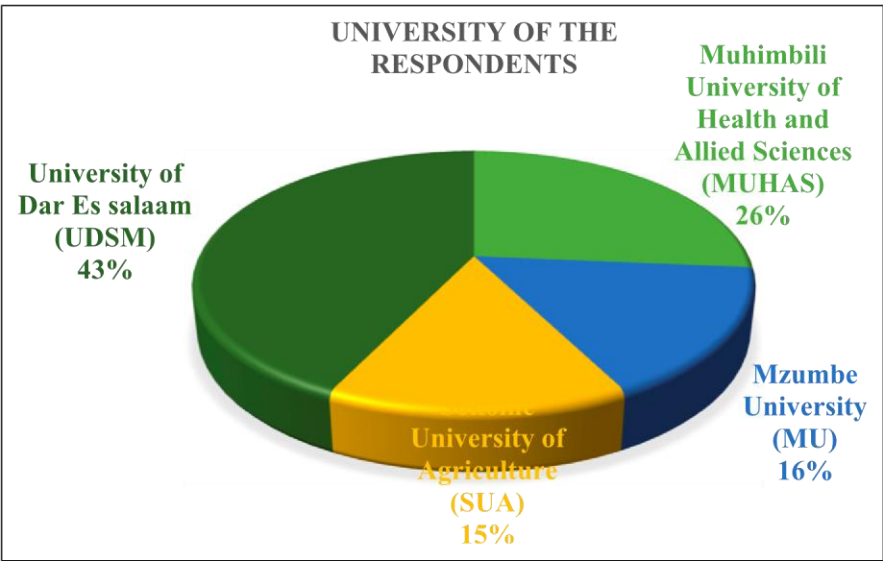


Figure 2. University of the respondents (n = 292). Source: Field Data (2020).

Table 2. Demographic characteristics and competence to use OAIRs (n = 292).

Have you ever accessed research outputs in a university's OAIR?				
	Yes	No	Total	p value
Gender of respondents				
Male	92 (52.3%)	84 (47.7%)	176 (100.0%)	.011
Female	43 (37.1%)	73 (62.9%)	116 (100.0%)	
Total	135 (46.2%)	157 (53.8%)	292 (100.0%)	
Age of respondents				
20–35	30 (36.6%)	52 (63.4%)	82 (100.0%)	.003
36–45	50 (45.5%)	60 (54.5%)	110 (100.0%)	
46–50	24 (45.3%)	29 (54.7%)	53 (100.0%)	

51–60	18 (54.5%)	15 (45.5%)	33 (100.0%)	
61 and above	13 (92.9%)	1 (7.1%)	14 (100.0%)	
Academic qualification				
PhD	53 (54.1%)	45 (45.9%)	98 (100.0%)	.181
Masters	54 (40.6%)	79 (59.4%)	133 (100.0%)	
Bachelor	27 (47.4%)	30 (52.6%)	57 (100.0%)	
Post graduate diploma	1 (25.0%)	3 (75.0%)	4 (100.0%)	
Academic rank				
Tutorial assistant	18 (45.0%)	22 (55.0%)	40 (100.0%)	.000
Assistant lecturer	27 (29.7%)	64 (70.3%)	91 (100.0%)	
Lecture	31 (43.7%)	40 (56.3%)	71 (100.0%)	
Senior lecturer	12 (48.0%)	13 (52.0%)	25 (100.0%)	
Associate professor	7 (87.5%)	1 (12.5%)	8 (100.0%)	
Professor	14 (100.0%)	0 (.0%)	14 (100.0%)	
Librarian trainee	3 (37.5%)	5 (62.5%)	8 (100.0%)	
Assistant librarian	6 (60.0%)	4 (40.0%)	10 (100.0%)	
Librarian	5 (100.0%)	0 (.0%)	5 (100.0%)	
Senor librarian	2 (40.0%)	3 (60.0%)	5 (100.0%)	
Other rank	10 (66.7%)	5 (33.3%)	15 (100.0%)	
Working experience (yrs.)				
1–5	25 (32.1%)	53 (67.9%)	78 (100.0%)	.002
6–10	27 (39.7%)	41 (60.3%)	68 (100.0%)	
11–15	38 (50.7%)	37 (49.3%)	75 (100.0%)	
16–20	20 (55.6%)	16 (44.4%)	36 (100.0%)	
21–25	11 (64.7%)	6 (35.3%)	17 (100.0%)	

26 and above	14 (77.8%)	4 (22.2%)	18 (100.0%)
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Source: Field data (2022).

respondents access more research reproductivity in OAIRs than female respondents 45.5% of respondents with ages between 36 and 45 access more research reproductivity in OAIRs. Respondents with master’s degrees (40.6%) were found to access more research reproductivity in OAIRs. 43.7% of lecturers indicated accessing more research reproductivity in OAIRs, and 50.7% of respondents with working experience of 11– 15 years found accessing more research reproductivity in OAIRs.

This implies that gender, age, level of education, and working experience were found to have a 5% level of significance (p-value ≤ 0.005).

One qualitative result from a key informant was that:

“Generally, most of those accessing research reproductivity in OAIRs are young academic staff.”

Competency level on accessibility of institutional research productivity

Table 3 presents the competency level on accessibility of institutional research productivity in OAIRs among users. Results show that 28.4% of the users are computer competent, information search literate (27.1%), communication skilled (27.1%), understanding Open Access copyright issues, licensing (e.g., creative commons), and familiar with intellectual property rights (21.9%), able access institutional research productivity (21.6%) and competent in scholarly publishing and self-archiving (20.5%). This implies that OAIRs users are competent in terms of having basic skills and knowledge on the accessibility of institutional research productivity in OAIRs.

The results show that communication-skilled, computer-competent, and informationsearch-literate individuals have a 5% level of significance (p-value ≤ 0.005). This means there is a relationship between communication skills, computer competence and information search literacy and accessibility of institutional research productivity.

Three qualitative results from key informants narrated that:

“Competency is the most important aspect of accessibility of institutional research productivity in OAIRs, lucky enough our OAIRs users have skills and are capable of navigating or accessing content available in our OAIRs” (Key informant 1, 2022).

“Lecturers are more competent in accessing content in OAIRs rather than self-archiving their research productivity (Key informant 1, 2022).

Table 3. Competency level on accessibility of institutional research productivity (n = 292).

Competency level on a ccessibility of institutional research productivity				pvalue
	Adequate	Neutral	Inadequate	
Able to access institutional research productivity	63 (21.6)	52 (17.8)	20 (6.8)	0.114
Understanding of open access copyright, licensing, and intellectual property rights	64 (21.9)	49 (16.8)	21 (7.2)	0.009
Communication skilled	79 (27.1)	34 (11.6)	22 (7.5)	0.000
Scholarly publishing or self-archiving	60 (20.5)	52 (17.8)	23 (7.9)	0.114
Computer competent	83 (28.4)	39 (13.5)	13 (4.5)	0.000
Information search literate	79 (27.1)	40 (13.7)	16 (5.5)	0.000

Source: Field data (2022).

“Junior staff are more competent in accessing institutional research productivity than senior academic staff, this is because the young generation is more capable of using technology than the old generation.”

Sources of skills acquired for accessing institutional research productivity

Table 4 shows the results of where OAIRs users acquired skills for accessing institutional research productivity. The results indicated that users reported acquiring skills of accessing institutional research productivity from librarians (22.6%), and library technicians (18.2%). Others indicated to acquire from the Internet (15.4%), colleagues (10.3%), OAIRs guide (9.6%), and ICT technicians (5.5). These results demonstrate that most of the OAIRs users acquired skills of accessing institutional research productivity from various sources, including library staff and library technicians.

One qualitative result from a key informant was that:

“There are other researchers who are not competent in assessing institutional research productivity, and sometimes librarians are so busy with other activities therefore they fail to assist them. therefore, it is better to prepare a seminar or training to teach them on how to access research outputs available in OAIRs” (Key informant 1, 2022).

Attitude of library users towards acquiring skill of accessing institutional research productivity

Table 5 shows the results on the attitude of academic staff towards acquiring skills of accessing institutional research productivity in selected higher learning institutions. The results indicated that 57.9% were positive towards acquiring skills. 56.9% agreed that acquiring skills of OAIRs facilitates free and quick access. Those who agreed that it is wise to decide on accessing institutional research productivity in OAIRs were 52.6% In

addition, 66.7% agreed that acquiring skills improves knowledge and skills of using electronic resources, whereas 47.3% agreed that acquiring skills is favorable for them. Those who agreed that acquiring skills makes them feel easy and comfortable were 52.6% and those who said it is beneficial academically to acquire skills were 56.1%. This means Table 4. Sources of skills acquired (n = 292).

Sources	Frequency	Percentage (%)
Librarians	66	22.6
Library technician	53	18.2
ICT technicians	16	5.5
Colleagues	30	10.3
Internet	45	15.4
OAIRs guide	28	9.6

Source: Field data (2022).

Table 5. Attitude towards acquiring the skill of accessing institutional research productivity (n = 292): Multiple responses from respondents.

The attitude of OAIRs users towards acquiring skill of accessing institutional research productivity	Agree Neutral Disagree		
I am positive about acquiring skills	33 (57.9%)	14 (24.6%)	10 (17.6%)
Acquiring skills facilitates free and quick access to publications	34 (56.9%)	14 (24.6%)	9 (15.8%)
It is wise to decide on acquiring skills	30 (52.6%)	16 (28.1%)	11 (19.3%)
Acquiring skills improves the use of electronic resources	38 (66.7%)	12 (21.1%)	7 (14.3%)
Acquiring skills is favorable for me	27 (47.3%)	21 (36.8%)	9 (15.8%)
Acquiring abilities makes me feel easy and comfortable	30 (52.6%)	11 (19.3%)	16 (28.1%)
It is beneficial academically for me to acquire skills	32 (56.1%)	10 (17.3%)	15 (26.3%)

Source: Field data (2022).

that most users have a positive attitude towards acquiring skills for accessing institutional research productivity in OAIRs.

One qualitative result from key informants was that:

“Other researchers don’t prefer to acquire the skill of accessing institutional research productivity because they have a notion that the research productivity available in OAIRs is outdated or they are of low quality.” (Key informant 1, 2022).

Constraints faced when trying to acquire OAIRs skills

Table 6 shows the results of the constraints faced when trying to acquire OAIRs skills among users in selected higher learning institutions. The results indicated that the major constraints reported by respondents include a lack of awareness about the presence of OAIRs policy (38.6%), a lack of interest and fear of accessing institutional research productivity in OAIRs (22.8%), and a lack of budget for training and advocacy of OAIRs Table 6. Constraints faced when trying to aquire OAIRs skills (N = 292).

The constraints faced when trying to aquire OAIRs skills	Frequency	Percentage
Lack of budget for training resources and advocacy of OAIRs	11	19.3
Inadequate training on the accessibility of OAIRs	6	10.5
Lack of infrastructure & network facilities	8	14.0
Lack of competent library staff for providing training on the OAIRs acquiring skills	5	8.8
Time limitations	3	5.3
Lack of updating training strategies on OAIRs	7	12.3
Lack of interest and fear of OAIRs acquiring skills	13	22.8
Lack of OAIRs policy	22	38.6

Source: Field data (2022).

(19.3%). Others include inadequate training (10.5%), lack of infrastructure and network facilities (14.0%), lack of competent librarians (8.8%), non-availability of consultation services (5.3%), and lack of updated training strategies on OAIRs (12.3%). This implies that there are several factors that hinder OAIRs users when trying to acquire OAIRs skills of accessing institutional research productivity in higher learning institutions.

One qualitative result from key informants was that:

“Other researchers reported that they are facing different constraints when trying to acquire OAIRs skills, such as poor ICT infrastructure and an unconducive environment” (Key informant 1, 2022).

Strategies to improve accessibility of institutional research productivity

Table 7 shows the strategies to improve accessibility of institutional research productivity. The results indicated that strategies to improve accessibility of institutional research productivity mentioned by respondents included accessibility audits and feedback (24.7%), provision of training and workshops (24.3%), and incorporating accessibility into research curriculum(20.2%).Others include mentorshipandpeersupport(12%),providing incentives (5.8%), and policy development (5.5%). This demonstrates that there is a need to embark on strategies to improve accessibility of institutional research productivity in OAIRs.

Two qualitative results from key informants narrated that:

“Mentoring is one of the most important strategies to improve accessibility of institutional research productivity. Mentors support and facilitate the achievement of scholars’ goals.” (Key informant 1, 2022).

Discussions

The study’s findings show that demographic factors such as gender, age, education level, and work experience significantly affect academic staff’s access to institutional research outputs available in OAIRs. Older academic staff may experience technophobia, while younger staff members tend to be more enthusiastic about using technology. Additionally, Table 7. Strategies to improve accessibility of institutional research productivity (N = 292).

Strategies to improve accessibility of institutional research productivity	p-		
	Frequency	Percentage	value
Accessibility audits and feedback	72	24.7	0.607
Training and workshops	71	24.3	
Incorporating accessibility into the research curriculum	59	20.2	
Mentorship and peer support	35	12.0	
Provide incentives	17	5.8	
Policy development	16	5.5	

Source: Field data (2022).

those with longer work experience are generally more skilled at accessing OAIRs than their junior counterparts. Consequently, the institution should offer greater motivation, assistance, and support to staff who face challenges in accessing institutional research productivity available in OAIRs. The study also found out that academic staff are competent in terms of having basic computer skills on how to access institutional research productivity, file management and internet browsing, are information literate ability to locate, evaluate, and use information effectively, including understanding the ethical use of information and communication skills ability to communicate with repository administrators, librarians, or IT staff for support or assistance. However, the study found that users lack enough competency in publishing or self-archiving, utilizing the Open Access Institutional Repository (OAIRs), and knowledge of open access principles, including copyright, licensing (e.g., Creative Commons), and intellectual property rights. The results of this study conform with that of Okoroma (2018) who opined that competency in using OAIRs is a critical factor that influence academic staff abilities to successfully accessing institutional research productivity, but lecturers in

Nigeria are either unfamiliar with the term IR or have very little level of knowledge on the aims and objectives of IR, and therefore have low use in disposition to submitting their work. Based on these, it is suggested that there is a need to create awareness among users on how to access institutional research productivity in OAIRs, impact skills among users of OAIRs, provide frequent training and advocacy, especially in accessing or self-archiving scholarly publications, to impact users' competency.

Furthermore, the findings of the study showed that users of OAIRs acquired skills of accessing institutional research productivity from library staff and library technicians. This is possible because library staff are the ones who are custodians of the OAIRs, thus why they are capable enough to direct and teach how to use OAIRs. Therefore, it is easy for users to ask for help whenever they need. The results of this study differ from that of [Antidiu \(2018\)](#), who revealed that most academics acquired skills from job training, inhouse classroom training, local workshops/seminars, and professional training, and from library staff. However, it could be good for OAIRs users to acquire skills from other groups such as ICT technicians, who could provide technical skills that will help them in accessing scholarly publications found in OAIRs. Technical skill is very important, as it was found out by [Ukwoma and Ngulube \(2019\)](#) and [Kumah and Filson \(2022\)](#) that the major barrier the access to institutional research productivity is a lack of technical skills. Therefore, it is recommended to create different sources of acquiring skills and knowledge to make users competent in the accessibility of institutional research productivity.

Also, the findings of the study showed that users of OAIRs had a positive attitude towards acquiring skills. This means that most users have a positive attitude towards acquiring skills for accessing institutional research productivity. The results of this study conform with those of [Njogu and Mutwiri \(2022\)](#), who found that academic staff have a positive perception towards acquiring skills, although self-archiving is yet to be embraced by a significant number of academic staff. Therefore, university and library management should continue to create awareness and training to increase a positive attitude towards acquiring skills of accessing institutional research productivity among academic staff.

However, the findings of the study showed that users of OAIRs faced various challenges. When trying to acquire skills of accessing institutional research productivity, the inhibiting challenges are a lack of awareness of the presence of OAIRs policy, a lack of interest, and fear of using OAIRs, and a lack of budget for training and advocacy of OAIRs. Others include inadequate training, lack of infrastructure and network facilities, lack of competent librarians, non-availability of consultation services, and lack of updated training strategies on OAIRs. The results of this study conform with those of [Ezema and Eze \(2024\)](#); [Kumah and Filson \(2022\)](#); [Ngulube and Ukwoma \(2019\)](#) who reported that the major barriers are inadequate infrastructures, lack of awareness and sensitization, and lack of technical skills.

Nevertheless, the study provides various strategies to improve accessibility of institutional research productivity, such as the provision of regular training sessions and workshops to ensure users are up-to-date on the latest accessibility standards and

practices. Provide training to users, mentorship programs to improve skills. And to develop OAIRs policies is essential for institutions, especially those that lack the availability of full-text research materials.

Conclusion

OAIRs in libraries enable the user community to get free and instant research publications from a variety of scholars and make them updated with the latest publications for academic purposes. Despite having OAIRs and a positive attitude among users lack competencies which hinder the proper accessibility of OAIRs. Hence, the library's management should improve constraints that hinder effective access to institutional research products in OAIRs. It can be done through providing regular training programs to impact competency and skills to library users for improved accessibility of institutional research products.

Recommendations

- Competency level on accessibility

Library management should provide training programs to enhance competency and skills to library users to be able to access OAIRs content and the library to offer better and quality library service. Competency and skills can be provided through seminars, conferences and workshops, and other special programs to update their knowledge and skills. · Attitude of library users towards acquiring skills

University managements should encourage OAIRs users to set up their time and effort on the frequent use of OAIRs. The university management may also consider rewarding academic staff who deposit their outputs in institutions' OAIRs in the form of either up the ladder points or financial rewards. This will give OAIRs users a positive attitude towards the accessibility of OAIRs products.

- The constraints faced when trying to acquire OAIRs' acquiring skills

Library management should make sure they allocate enough funds to develop ICT infrastructures, provide enough training to both OAIRs and librarians, and also formulate an OAIRs policy which will maximize the accessibility and availability of full-text research.

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References

- Abu Alhija FMN and Majdob A (2017) Predictors of teacher educators' research productivity. *Australian Journal of Teacher Education* 42(11): 34–51.
- Antidius F (2018) Usage of information and communication technology to support innovative library services in universities: a case of the university of Dar es Salaam Wilbert Chagula Library. *University of Dar es Salaam Library Journal* 13(2): 3–17.
- Bamigbola AA and Adetimirin AA (2017) Evaluating use of institutional repositories by lecturers in Nigerian universities. *Information Impact: Journal of Information and Knowledge Management* 8(8): 83–102.
- Baro EE, Obaro OG and Aduba ED (2019) An assessment of digital literacy skills and knowledgebased competencies among librarians working in university libraries in Africa. *Digital Library Perspectives* 35(3/4): 172–192.
- Chilimo W (2016) Institutional repositories: awareness and self-archiving practices of academic researchers in selected public universities in Kenya. The open access movement and the future of Africa's knowledge economy. In: Paper Presented at the Fourth CODESRIA Conference on Electronic Publishing, Dakar, Senegal. <https://ugspace.ug.edu.gh/>
- Ezema IJ and Eze JU (2024) Status and challenges of institutional repositories in university libraries in South-East Nigeria: Implications for visibility and ranking of Nigerian universities. *The Journal of Academic Librarianship* 50(2). Available at: <https://doi.org/10.1016/j.acalib.2023.102834>
- Jayakananthan M and Jeyaraj WJ (2023) Awareness and attitude towards use of institutional repositories by academic staff of Eastern University, Sri Lanka: a method based on the diffusion of innovation (DOI) and theory of reasoned action (TRA). *International Journal of Research and Innovation in Social Sciences* 7(2): 931–938.
- Kari HK and Orji S (2022) Challenges to Developing Institutional Repositories and Electronic Resource Sharing in Academic Libraries in Nigeria. *Library Philosophy and Practice (eJournal)* (6891).
- Kayungi PN, Ndenje-Sichalwe E and Manda PA (2021) Academic staff awareness of institutional repositories (IRs) in Tanzania universities. *University of Dar es Salaam Library Journal* 16(1): 67–83.
- Kodua-Ntim K (2021) University Academics' Usage of Open Access Institutional Repositories. *Journal of Library Resource Sharing* 30(3–5). Available at: <https://doi.org/10.1080/1072303X.2022.2103227>

- Kumah P and Filson C (2022) An evaluation of academic institutional repositories in Ghana. *International Journal of Knowledge Content Development & Technology* 12(1): 67–83. Available at: <https://ijkcdt.net/xml/32332/32332.pdf>.
- Ladipo SO, Alegbeleye GO, Soyemi OD, et al. (2022) Institutional repositories utilization and research productivity of lecturers in federal universities in Nigeria universities. *International Journal of Academic Library and Information Science* 10(4): 178–193.
- Malekani AW and Kavishe G (2018) The role of institutional repositories in making lost or hidden culture accessible: a study across four African university libraries. *Library Philosophy and Practice* (2011). Available at: <https://digitalcommons.edu/libphilprac/2011>.
- Mbughuni AS, Mtega WP and Malekani AW (2022) Exploring academic staff engagement in depositing locally produced research content in open-access institutional repositories in Tanzania. *IFLA Journal* 48(4): 523–537. Available at: <https://doi.org/10.1177/03400352211069157>
- Mwalubanda J (2021) The development of institutional repositories in East Africa countries: a comparative analysis of Tanzania, Kenya, and Uganda. *IASSIST Quarterly* 45(3–4): 1–12. Available at: <https://doi.org/10.29173/iq1012>
- Nagappa HH and Kumar SKT (2020) A study of competencies and attitude in use of ICT among librarians of government and aided first-grade colleges affiliated to University of Mysore. *Library Philosophy and Practice* 4592: 1–11. Available at: <https://digitalcommons.unl.edu/libphilprac/4592>.
- Namugera L, Bukirwa J and Okello-Obura C (2023) Library users' attitudes towards virtual library and information services in Ugandan public and private universities. *Library Philosophy and Practice* 8036: 1–15. Available at: <https://digitalcommons.unl.edu/libphilprac/8036>.
- Ngulube P and Ukwoma SC (2019) Obstacles to the utilization of institutional repositories by academics in higher education in Nigeria. *Webology* 16(1): 138–151.
- Ngure M and Gatiti P (2015) Cross-border implementation of institutional repository: a case of Aga Khan University. In: *IFLA WLIC*, Cape Town. IFLA, 1–12.
- Njogu L and Mutwiri C (2022) Perception of Academic Staff on Knowledge Sharing Through Institutional Repositories in Public and Private Universities in Kenya. *International Journal of Current Aspects* 6(3): 125–133. Available at: <https://doi.org/10.35942/ijcab.v6i3.283>
- Nunda I and Elia E (2019) Institutional repositories adoption and use in selected Tanzanian higher learning institutions. *International Journal of Education and Development using ICT* 15(1): 150–164. Available at: <https://www.learntechlib.org/p/209740/>.
- Okoroma FN (2018) Awareness, knowledge, and attitude of lecturers towards institutional repositories in university libraries in Nigeria. *Digital Library Perspectives* 34(4): 288–307.
- Ratanya FC (2017) Institutional repository: access and use by academic staff at Egerton University, Kenya. *Library Management* 38(4/5): 276–284.
- Saliu SA, Ngozi OV and Lawal AM (2022) Challenges and strategies to the use of institutional repository among academic staff in university libraries in South-West Nigeria, Abraka. *Humanities Review* 12(1): 89–97.

- Sankar P and Kavitha ES (2018) A study on positive attitude towards contribution in institutional repository system among the faculty members. *Library Philosophy and Practice* 1681: 2348–2001. Available at: <https://digitalcommons.unl.edu/libphilprac/1681>.
- Shahla A, Abdullah R, Yah Y, et al. (2019) Understanding institutional repository in higher learning institutions: a systematic literature review and directions for future research. *IEEE Access* 7: 35242–35263.
- Tenya AN, Maina JC and Awuor FM (2023) Challenges in accessing and utilizing information in digital resource platforms by academic staff in selected public universities in Kenya. *International Journal of Current Aspects* 7(2): 65–80.
- Ukachi NB (2018) Enhancing scholarly communication through institutional repositories: Salient issues and strategies by libraries in Nigeria [Conference presentation]. IFLA World Library and Information Congress 2018, Kuala Lumpur, Malaysia August 24–30.
- Ukwoma SC and Ngulube P (2019) Obstacles to the Utilization of Institutional Repositories by Academics in Higher Education in Nigeria. *Webology* 16(1).

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