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Exploring the global visibility of African scholarly communication: a comparative analysis of open access repositories in Africa

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Keywords: Open Access Repositories; African repositories; African Scholarly Communications; Scholarly output visibility; OpenDOAR; Digital repositories

Abstract

Purpose: This paper is a comparative study of repositories in Africa for the global visibility of African scholarly communication. It aims to provide a detailed description and comparison of repositories in Africa by region, country, repository type, year established, content type, software type, and language of content.

Design/methodology/approach: Using a systematic content review methodology, and a total enumerative sampling technique, a total of 259African repositories drawn from the Directory of Open Access Repositories database over one week were reviewed.

Findings: The study revealed that out of the 5,905 repositories listed, 259 are from Africa. The repositories are spread across 24 out of the 54 countries that make up the continent, thus making a 44% representation of African scholarly communication by countries in the global space. By region, Eastern Africa had the highest number at 101 (39%) repositories invariably becoming the African region with the most visible scholarly communication, while Central Africa had the least number of OARs at 1 (.4%). By countries, South Africa took the top of other countries at 51 (20%) repositories, while Cameroon was the least at 1 (0.3%). The African scholarly communication with the most visibility is Social Sciences at 223 while the least archived subject is Mathematics at 176. African scholarly communications made available on the global space are mostly generated by institutions of learning as the study shows that 243 (94%) OARs in Africa are institutional repositories.

Originality/value: The study exposed the paltry contribution of African repositories in ensuring the global visibility of African scholarly communication. It reveals the weakness of the African continent in exploring the potential of OARs in the wider dissemination of their scholarly communication. Africa has the second-largest population in the world, and ought to generate more scholarly communication in the global space. To this end, therefore, the study recommends among others that African institutions should commit to establishing and maintaining OARs if African scholarly communication will be visible in the global space.

Introduction

Repositories are document servers that are managed by tertiary or research institutions. They serve as a platform for archiving and providing global access to scientific and intellectual materials, without any cost. An open-access repository goes beyond mere document storage by utilizing metadata to enable users to discover appropriate resources. Open-access repositories have been established by various institutions, research centres, libraries, and government departments to facilitate the free and efficient dissemination of resources (Wani et al., 2009). The first digital repository systems emerged during the early 2000s to facilitate unrestricted access to academic publications. The open access movement pro-

moted the principle of making access to all scholarly communication available to the world at no cost, via the Internet. This theory birthed the establishment of repositories. The primary goal of the Open Access movement is to enhance the scientific communication system by optimizing the accessibility and maximising the influence of research findings through self-archiving (Harnad as cited in Cordón-García et al., 2013). Reiterating this, Xie and Matusiak (2016b) observed that repositories were designed to facilitate scholarly communication and promote open access. Their purpose is to offer the necessary infrastructure and services for the collection and organisation of open-access scholarly publications as well as electronic theses and dissertations. The establishment of open-access repositories greatly enhances scholarly communication (Xie & Matusiak, 2016a).

Scholarly communication refers to the systematic exchange and dissemination of academic work among academics, scholars, and researchers thereby facilitating the accessibility of their scholarly contributions to a broader academic community, including university academics, as well as to a wider audience (Trotter et al., 2014). In the same vein, Li and Banach (2011) define scholarly communication as the process by which research and other scholarly writings are generated, assessed for excellence, shared with the scholarly community and preserved for future reference. Enabling access to scholarly communication encompasses a wide array of tasks, such as discovering, gathering, arranging, appraising, interpreting and safeguarding primary and secondary sources of information, as well as publishing and distributing scholarly research (Cullyer& Walters, 2008 as cited in Trotter et al., 2014). The use of metadata in open-access repositories enables the users to find appropriate materials thereby enhancing the visibility of such materials. The visibility of scholarly communication refers to the ability to locate and access specific knowledge and authored works due to their traceability. In the context of the African region, visibility takes on a greater significance as it entails making research on subjects and themes of local interest accessible to the public. This accessibility allows relevant stakeholders such as researchers, students, and development practitioners to readily find local research that can make a valuable contribution to society, be it for future knowledge creation or development practice (Abrahams et al., 2010).There are many facets to visibility, including author and content visibility in abstracting and indexing databases, library collection visibility, web publishing visibility and research performance visibility based on bibliometric metrics such as citation counts or impact factors. It appears that the more accessible a publication is, the higher the chances of frequent citation of the work. This is buttressed by Cordón-García et al. (2013) who observed that the enhanced visibility of open-access publications, a model that enables the dissemination of high-quality scientific literature without any limitation, provides the author with a crucial role and allows them to reap significant advantages. As a result, the author gains advantages such as a larger readership, more citations, and more recognition from a wider scientific community. Consequently, this could lead to improved access to grants, greater acknowledgment of achievements, and incre-

ased financial support for future endeavours. With an emphasis on Southern Africa's universities, Abrahams et al. observed that low visibility seems to be mainly attributed to a lack of overall research productivity, consequently causing these universities to face challenges in fulfilling their responsibilities as contributors to regional development by creating and sharing knowledge produced locally. Trotter et al. assert that African scholarly research remains relatively unseen due to three main factors, which they have identified as follows:

> *While research production on the continent is growing in absolute terms, it is falling in comparative terms (especially as other Southern countries such as China ramp up research production), reducing its relative visibility. ii. Traditional metrics of visibility (especially the ISI/WoS Impact Factor) which measure only formal scholar-to-scholar outputs (journal articles and books) fail to make legible a vast amount of African scholarly production, thus underestimating the amount of research activity on the continent. iii. Many African universities do not take a strategic approach to scholarly communication, nor utilise appropriate ICTs and Web 2.0 technologies to broaden the reach of their scholars' work or curate it for future generations, thus inadvertently minimising the impact and visibility of African research* (Trotter et al., 2014, p1).

According to Chan and Kursop (2005, as cited in Wani, et al, 2009), open-access repositories offer a thrilling prospect for the scientific community in developing countries to share their research discoveries with the general public. Thinking ahead of time, and in pursuance of this project of ensuring that the research output in developing countries is made public, a grant was awarded by the Carnegie Corporation to the University of Cape Town library, as well as libraries at the universities of the Witwatersrand and Kwa-Zulu-Natal in 2005. The grant, which also allocates funds for the establishment of a novel digital initiative unit, has been awarded for a project spanning three years. The primary objective of this project is to enhance research capabilities and facilitate the professional growth of library staff within these institutions. The digital initiative unit effectively outlines its strategic plans and priorities which highlight the importance of African open-access repositories in scholarly communications. Their role includes the attraction, preservation, digitisation and provision of access through an advanced web portal, to essential African archival materials. Facilitating the digitization of these resources as a contribution to African scholarship encourages digital collaboration within the continent and showcases the research capabilities of the institution, which in this case is the University of Cape Town (Masenya, 2021). Indeed, the world is waiting for the contributions of African scholarly communications through open-access repositories. African scholars also require a uniquely designed digital scholarly communication sy-

stem capable of capturing digital intellectual content, enabling easy access and ensuring long-term preservation (Van de Sompel et al., 2004 as cited in Masenya, 2021). The unimpeded adoption and advancement of open-access repositories in Africa are crucial for achieving this objective.

Open access repository according to Adewole-Odeshi and Ezechukwu (2020) is a database or a virtual archive designed to gather, distribute, and safeguard scientific output such as scientific articles and datasets, while ensuring their unrestricted accessibility. An open-access repository refers to a compilation of online databases on the Internet that contains a wide range of full-text resources. These resources are readily accessible and can be obtained freely and instantaneously (Xie & Matusiak, 2016a). Institutions may establish repositories to cater just to the needs of their authors and researchers or provide an open platform for researchers in specific subject areas to deposit their work (*Open Access Repositories,* 2012). This implies that open-access repositories can be institutional or disciplinary. Institutional repositories are document servers that are managed by institutions such as university libraries, research institutions or other infrastructure organisations. These repositories provide a platform for their members to digitally publish or self-archive their academic and scientific works. Creating an open-access repository increases the global exposure of an institution's research work, subsequently projecting the institution's image and its country's image on a global scale (Igwe, 2014). Disciplinary repositories also referred to as subject repositories, differ from institutional repositories in that they are supra-institutional and focused on specific subjects. These repositories serve as platforms for scientists and scholars to publish and archive their works on particular fields of study. Both institutional and disciplinary repositories typically offer free access to users and allow for self-archiving of scientific and scholarly works (*Open Access Repositories,* 2022).

Repositories can be built on local-hosted platforms (local server) or cloud--hosted platforms (access and store data remotely). Each has its own merits and demerits. One major advantage of building open-access repositories on cloud-hosted platforms is that they often handle routine maintenance tasks, including software updates and security patches. Since 2000, numerous repository platforms have emerged, each possessing its distinct advantages and technical requirements (UNESCO, 2014).Some of these are developed in-house, while others are commercial. Examples of repository software are RefDB, Refbase, EPrints, Omeka, Islandora, SobekCM, BRICKS, DSpace, Museolog, Aigaion, Invenio, Greenstone and so on (Velmurugan & Radhakrishnan, 2014). Types of content stored in open-access repositories are varied and may include any or all of the following: journal articles, patents, working papers, dissertations, theses, datasets, software, workshop papers, inaugural lectures, multimedia and audiovisual materials, learning objects, bibliographic references, books, chapters, sections, conference papers, unpublished reports, etc. (Abrizah, Noorhidawati, & Kiran, 2010). Repository software developers are gradually integrating support for the

preservation of repository contents, thereby giving more hope to repository managers in implementing digital preservation for repositories (Li & Banach, 2011). The OAIS model offers a conceptual basis for creating repositories that adhere to established standards (Xie & Matusiak, 2016c). Depositing in a repository could be by self-deposit (also referred to as self-archive), or mediated deposit. Self-deposit is when academics themselves deposit their scholarly works in the repository while mediated deposit is when an intermediary, usually the repository staff, manages the process of depositing content in the repository. Open access repositories across the globe can be found through: the Registry of Open Access Repositories (ROAR), Connecting Repositories (CORE), Digital Commons Network and Directory of Open Access Repositories (OpenDOAR) (Cobcroft, 2024). This research entered on the open-access repositories available in the Directory of Open Access Repositories (OpenDOAR), OpenDOAR was established in 2005 as the upshot of a joint venture between the University of Nottingham and Lund University. The project received funding from SPARC Europe, CURL, Jisc and OSI. A study by Ezema and Onyancha (2017) reported that only 20 African countries are represented in ROAR and DOAJ. This suggests that there is a relatively limited presence of African research outputs in these global visibility platforms, thus justifying a need for further research on the state of OARs in Africa for global visibility of African scholarly communication.

Objectives

The general objective of the study is to comparatively review open-access repositories in Africa for the global visibility of African scholarly communication.

The specific objective is to:

1. compare the geographical distribution and country-wise distribution of OARs in Africa for the global visibility of African scholarly communication.
2. examine the spread of OARs across countries in the different African regions for the global visibility of African scholarly communication.
3. investigate the type of OARs in African regions for the global visibility of African scholarly communication.
4. evaluate the extent of deposited materials according to the subject for the global visibility of African scholarly communication.
5. contrast the year-wise growth pattern and distribution of OARs for the global visibility of African scholarly communication.
6. determine the repository software used for the global visibility of African scholarly communication.
7. ascertain the language-wise distribution of OARs for the global visibility of African scholarly communication.
8. investigate the type of content digitally preserved in OARs for the global visibility of African scholarly communication.

Methodology

The content analysis method was used in this study. This research method is used to identify patterns in recorded communication (Luo, 2023). This study is an evaluation of contents listed in a repository database, and as such this method was best suited for extracting the data for the study. Informetric data was extracted from the OpenDOARusing descriptive informetric techniques. The researchers used open-access repositories listed in OpenDOAR accessible at: https://v2.sherpa.ac.uk/opendoar/ to understand the spread of OARs in Africa. Data used for the analysis was drawn from the OpenDOARdatabase over one week – between 22nd Sept. and 28th Sept. 2023. The study population consisted of all the 259 repositories from Africa listed during the period, out of a total of 5905 repositories that were listed in OpenDOAR. The total enumerative sampling technique was, therefore, used in the study as data were collected from all the OARs in Africa listed in the database. Once each country was identified, institutions listed under the country were carefully assessed to verify the information needed for the study. The requisite data obtained from each OAR were then listed under each country. The parameters chosen as variables for the content analysis of OARs in Africa were as follows: year of establishment, geographical distribution, OARs type, content type, software used, subject coverage, and language. The analyses were painstakingly carried out using various quantitative techniques (including spreadsheets) to ensure a foolproof outcome.

Results

Table 1: Geographical Distribution of African Repositories

S/N	Region	Number of Repositories	Percentage
1	Central Africa	1	0.4%
2	Eastern Africa	101	39%
3	Northern Africa	52	20%
4	Southern Africa	59	23%
5	Western Africa	46	18%
		259	

The result in Table 1 reveals that Eastern Africa has the highest number of OARs 101 (39%). Others in descending order are Southern Africa 59 (23%); Northern Africa 52 (20%); Western Africa 46 (18%) and Central Africa 1 (0.4%).

Table 2: Country-Based Distribution of African Repositories

S/N	Country	Number of Repositories	Percentage	Position
1.	Algeria	19	7%	4th
2.	Botswana	4	2%	12th
3.	Cabo Verde	2	1%	18th
4.	Cameroon	1	0.3%	24th
5.	Egypt	9	3%	8th
6.	Ethiopia	6	2%	11th
7.	Ghana	9	3%	8th
8.	Kenya	46	18%	2nd
9.	Lesotho	2	1%	18th
10.	Libya	3	1%	14th
11.	Malawi	3	1%	14th
12.	Morocco	3	1%	14th
13.	Mozambique	2	1%	18th
14.	Namibia	2	1%	18th
15.	Nigeria	31	12%	3rd
16.	Rwanda	2	1%	18th
17.	Senegal	4	2%	12th
18.	South Africa	51	20%	1st
19.	Sudan	16	6%	6th
20.	Tanzania, United Republic of	17	7%	5th
21.	Tunisia	2	1%	18th
22.	Uganda	15	6%	7th
23.	Zambia	3	1%	14th
24.	Zimbabwe	7	3%	10th
	Total	**259**	100%	

Table 2 ranks the OARs in Africa by country. South Africa came first with 51 (20%) repositories followed by Kenya at 46 (18%). Nigeria was ranked third at 31 (12%) repositories while Algeria took fourth at 19 (7%). Fifth, sixth and seventh positions were closely taken by Tanzania 17 (7%), Sudan 16 (6%) and Uganda 15 (6%), respectively. Cameroon was ranked twenty-fourth with 1 (0.3%) repository following multiple ties at eighteenth position by Cabo Verde, Lesotho, Mozambique, Namibia, Rwanda and Tunisia at 2 (1%), respectively.

Table 3: OAR spread across countries in the regions of Africa

S/N	Region	No. of countries	No. of OARs	Percentage
1	Central Africa	9	1	11%
2	Eastern Africa	18	9	50%
3	Northern Africa	6	6	100
4	Southern Africa	5	4	80%
5	Western Africa	16	4	25%
	Total	**54**	**24**	**44%**

Table 3 shows that even though Africa has a total of 54 countries, only 24 countries have OARs listed in OpenDOAR thus making a 44% representation. Only 1 (11%) country out of the 9 countries that presently make up Central Africa has a repository; 9 (50%) of the 18 countries that make up Eastern Africa have repositories; all the 6 (100%) countries in Northern Africa have repositories; of 5 countries that make up Southern Africa, 4 (80%) have repositories, while in Western Africa, only 4 (25%) countries had repositories out of a total of 16 countries making up the region.

Table 4: Type of Open Access Repositories in the African Region

S/N		Central Africa	% age	Eastern Africa	% age	Northern Africa	% age	Southern Africa	% age	Western Africa	% age	Total	% age
1.	Aggregating	0	-	1	*1%*	0	-	1	*2%*	0	-	2	*1%*
2.	Disciplinary	1	*100%*	1	*1%*	3	*6%*	2	*3%*	1	*2%*	8	*3%*
3.	Governmental	0	-	3	*3%*	1	*2%*	1	*2%*	1	*2%*	6	*2%*
4.	Institutional	0	-	96	*95%*	48	*92%*	55	*93%*	44	*96%*	243	*94%*
	Total	**1**		**101**		**52**		**59**		**46**		**259**	*100%*

Table 4 presents the types of Open Access Repositories according to the different regions in Africa. 96 OARs in Eastern Africa representing 95% are institutional repositories, 1 (1%) are disciplinary and aggregating, respectively, while 3 (3%) are governmental repositories. Out of the 52 OARs in Northern Africa, 48 (92%) are institutional, 3 (6%) disciplinary and 1 (2%) governmental repository. 55 (93%) OARs in Southern Africa are institutional, 2 (3%) disciplinary and 1 (2%) governmental and aggregating, respectively. Western Africa had 46 OARs out of which 44 (96%) are institutional repositories while 1 (2%) are disciplinary and governmental, respectively. In summary, 243 (94%) OARs in Africa are institutional, 8 (3%) disciplinary, 6 (2%) governmental and 2 (1%) aggregating repositories.

Table 5: Subjects Deposited in African OARs by Regions

Subjects	Central Africa	Eastern Africa	Northern Africa	Southern Africa	Western Africa	Total
Arts	1	68	40	46	37	192
Engineering	1	64	37	43	33	178
Health and Medicine	1	72	38	46	38	195
Humanities	1	72	41	48	38	200
Mathematics	1	65	35	42	33	176
Science	1	82	47	49	40	219
SocialSciences	1	88	40	54	40	223
Technology	1	72	43	46	38	200

Table 5 shows the subjects deposited in African OARs by region. The most deposited subject in Eastern Africa is Social sciences (88) followed by Science (82), while Engineering is the least deposited subject (64) followed by Mathematics (65). In Northern Africa, Science is the most deposited subject (47) followed by Technology (43), whereas the least deposited subject is Mathematics (35), followed by Engineering (37). With regards to Southern Africa, the most deposited subject is Social sciences (54), followed by Science (49), while Mathematics (42) is the least deposited subject, followed by Engineering (43). The two most deposited subjects in Western Africa are Sciences and Social Sciences, respectively at 40, whereas the least deposited subjects are Engineering and Mathematics at 33. In the whole continent combined, the most deposited subject is Social sciences at 223, jointly followed by Science at 219, as well as Humanities and Technology, respectively, at 200. On the other extreme, the least deposited subject is Mathematics (176), followed by Engineering (178).

Table 6: Year-Wise Growth Pattern of African OARs

S/N	Central Africa	Eastern Africa	Northern Africa	Southern Africa	Western Africa	Total	%age
2005	-	-	-	1	-	1	0.3%
2006	-	-	-	3	-	3	1%
2007	-	1	-	3	-	4	2%
2008	-	1	1	3	-	5	2%
2009	-	3	1	6	3	13	5%
2010	-	2	2	7	2	13	5%
2011	-	1	2	-	1	4	2%
2012	1	6	-	1	1	9	3%
2013	-	10	6	5	5	26	10%
2014	-	1	7	1	3	12	5%

2015	-	19	3	4	7	33	13%
2016	-	5	3	3	2	13	5%
2017	-	4	1	1	2	8	3%
2018	-	2	-	-	1	3	1%
2019	-	27	12	7	8	54	21%
2020	-	5	5	3	3	16	6%
2021	-	3	3	5	1	12	5%
2022	-	9	4	2	4	19	7%
2023	-	2	2	4	3	11	4%
Total	**1**	**101**	**52**	**59**	**46**	**259**	

Table 6 presents the year of establishment of repositories from 2005 to 2023. The year 2019 took tops as the highest growth year at 54 (21%) thus witnessing the highest number of registrations, followed by 2015 at 33 (13%), 2013 at 26 (10%), and 2022 at 19 (7%).On the other hand, the year 2005 witnessed the lowest growth rate at 1 (0.3%) followed by 2006 and 2018 at 3 (1%), respectively.

Table 7: Year-range Distribution of newly registered OARs by Country

S/N	Country	2005-2008	% age	2009-2012	% age	2013-2016	% age	2017-2020	% age	2021 and above	% age	Total
1.	Algeria	-	0%	-	0%	11	13%	5	6%	3	7%	19
2.	Botswana	-	0%	1	3%	1	1%	1	1%	1	2%	4
3.	Cabo Verde	-	0%	1	3%	1	1%	-	0%	-	0%	2
4.	Cameroon	-	0%	1	3%	-	0%	-	0%	-	0%	1
5.	Egypt	1	8%	3	8%	1	1%	3	4%	1	2%	9
6.	Ethiopia	-	0%	1	3%	1	1%	3	4%	1	2%	6
7.	Ghana	-	0%	2	5%	2	2%	2	2%	3	7%	9
8.	Kenya	1	8%	4	10%	19	23%	18	22%	4	10%	46
9.	Lesotho	-	0%	-	0%	-	0%	1	1%	1	2%	2
10.	Libya	-	0%	-	0%	-	0%	3	4%	-	0%	3
11.	Malawi	-	0%	-	0%	-	0%	1	1%	2	5%	3
12.	Morocco	-	0%	-	0%	2	2%	-	0%	1	2%	3
13.	Mozambique	-	0%	1	3%	-	0%	1	1%	-	0%	2
14.	Namibia	-	0%	1	3%	1	1%	-	0%	-	0%	2
15.	Nigeria	-	0%	3	8%	13	15%	11	14%	4	10%	31
16.	Rwanda	-	0%	-	0%	-	0%	2	2%	-	0%	2
17.	Senegal	-	0%	1	3%	1	1%	1	1%	1	2%	4
18.	South Africa	10	77%	12	31%	11	13%	9	11%	9	21%	51
19.	Sudan	-	0%	1	3%	5	6%	6	7%	4	10%	16

20.	Tanzania	-	0%	2	5%	9	11%	3	4%	3	7%	17
21.	Tunisia	-	0%	1	3%	-	0%	1	1%	-	0%	2
22.	Uganda	1	8%	-	0%	1	1%	9	11%	4	10%	15
23.	Zambia	-	0%	1	3%	1	1%	1	1%	-	0%	3
24.	Zimbabwe	-	0%	3	8%	4	5%	-	0%	-	0%	7
Total		**13**	**5%**	**39**	**15%**	**84**	**32%**	**81**	**31%**	**42**	**16%**	**259**

The year-range distribution of newly established OARs by country is presented in Table 7 and it showed that from 2005-2008, the total number of newly established OARs was 13 (5%); 2009–2012 was 39 (15%); 2013–2016 recorded 84 (32%); 2017–2010 had 81 (31%) while post-COVID had a record of 42 (16%).

Also, within the years 2005-2008 and 2009-2012, South Africa had the highest number of newly established OARs at 10 (77%) and 12 (31%), respectively. Between the years 2013–2016 and 2017–2020, Kenya had the highest number of newly established OARs at 19 (23%) and 18 (22%), respectively. Again, within the year 2021 and above (post-COVID), South Africa has the highest number of newly established OARs at 9 (21%). Additionally, within the years 2005-2008, only 4 African countries had newly established OARs viz: Egypt–1 (8%); Kenya–1 (8%); South Africa–10 (77%); and Uganda–1 (8%).

As of 2009–2012, the number of African countries with newly established OARs rose to 17: Botswana, Cabo Verde, Cameroon, Ethiopia, Mozambique, Namibia, Senegal, Sudan, Tunisia and Zambia had 1 (3%) newly established OAR, respectively; Ghana and Tanzania had a record of 2 (5%) newly established OARs, respectively; Egypt, Nigeria and Zimbabwe recorded 3 (8%) newly established OARs, respectively; with Kenya–4 (10%) and South Africa–12 (31%). Again between 2013 and 2016, 17 African countries had newly established OARs comprising the following in ascending order: Botswana, Cabo Verde, Egypt, Ethiopia, Namibia, Senegal, Uganda and Zambia–1 (1%), respectively; Ghana and Morocco–2 (2%) each; Zimbabwe–4 (5%); Sudan–5 (6%); Tanzania–9 (11%); Algeria and South Africa–11 (13%); Nigeria–13 (15%); and Kenya–19 (23%).

From 2017–2020 the number of African countries with newly established OARs further rose to 19 as follows: Botswana, Lesotho, Malawi, Mozambique, Senegal, Tunisia and Zambia recorded 1 (1%) OAR each; Ghana and Rwanda had 2 (2%) new OARs, respectively; Egypt, Ethiopia, Libya and Tanzania had a record of 3 (4%) new OARs each; Algeria recorded 5 (6%) new OARs; Sudan had 6 (7%) new OARs; South Africa and Uganda had 9 (11%) new OARs, respectively; Nigeria listed 11 (14%) new OARs; while Kenya had 18 (22%) new OARs.

For the post-COVID period (2021 and above) the 15 countries with newly established OARs include Botswana, Egypt, Ethiopia, Lesotho, Morocco and Senegal at 1 (2%) OARs, respectively; Malawi had 2 (5%); Algeria, Ghana and Tanzania–3 (7%) each; Kenya, Nigeria, Sudan and Uganda–4 (10%), respectively; and South Africa–9 (21%).

Table 8: Software-Wise Distribution of OARs in African regions

S/N	Software	Central Africa	% age	Eastern Africa	% age	Northern Africa	% age	Southern Africa	% age	Western Africa	% age	Total	% age
1.	CMS	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
2.	CONTENTdm	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
3.	ContentPro	-	0%	-	0%	-	0%	1	2%	-	0%	1	0.4%
4.	Digital Commons	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
5.	DigiTool	-	0%	-	0%	-	0%	1	2%	-	0%	1	0.4%
6.	Dot.net	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
7.	DSpace	-	0%	93	92%	40	77%	42	71%	40	87%	215	83%
8.	EPrints	1	100%	4	4%	3	6%	1	2%	3	7%	12	5%
9.	ETD-db	-	0%	-	0%	-	0%	1	2%	-	0%	1	0.4%
10.	EsploroResearch	-	0%	-	0%	-	0%	1	2%	-	0%	1	0.4%
11.	Figshare	-	0%	-	0%	-	0%	3	5%	-	0%	3	1%
12.	GreenStone	-	0%	2	2%	-	0%	-	0%	-	0%	2	1%
13.	Invenio	-	0%	1	1%	1	2%	-	0%	-	0%	2	1%
14.	Open Repository	-	0%	-	0%	-	0%	1	2%	2	4%	3	1%
15.	PHB My SQL	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
16.	SciELO	-	0%	-	0%	-	0%	1	2%	-	0%	1	0.4%
17.	VITAL	-	0%	-	0%	-	0%	4	7%	-	0%	4	2%
18.	Word Press	-	0%	-	0%	1	2%	-	0%	-	0%	1	0.4%
19.	Unspecified	-	0%	1	1%	2	4%	3	5%	1	2%	7	3%
		1		**101**		**52**		**59**		**46**		**259**	

Table 8 indicates the different repository software used in OARs in Africa. DSpace is the most used software by African OARs with a total record of 215 (83%), followed by EPrints– 12 (5%). VITAL is used by 4 (2%) OARs; while Open Repository and Figshare by 3 (1%) OARs. In the same vein, Green Stone and Invenio are used by 2 (1%) OARs. Other repository software in use includes CMS, CONTENTdm, ContentPro, Digital Commons, DigiTool, Dot.net, ETD-db, Esploro Research, PHB My SQL, SciELO and Word Press with a record of 1 (0.4%), respectively. Conversely, 7 (3%) OARs did not specify the repository software being used.

The repository software used in Eastern Africa in descending order is as follows: DSpace 93 (92%), EPrints 4 (4%), GreenStone 2 (2%) and Invenio 1 (1%). In Northern Africa, DSpace also ranked highest at 40 (77%), followed by EPrints–3 (6%), CMS, CONTENTdm, Digital Commons, Dot.net, Invenio, PHB My SQL and Word Press are being used by 1 (2%) repository, respectively. Re-

pository software use in Southern Africa also had DSpace ranking highest at 42 (71%), followed by VITAL–4 (7%), Figshare–3 (5%) and finally ContentPro, Digi-Tool, EPrints, ETD-db, Esploro Research, Open Repository and SciELO by 1(2%) OAR each. Similarly, DSpace use in Eastern Africa was the highest at 40 (87%) followed by EPrints–3 (7%) and Open Repository–2 (4%).

Table 9: Language Wise Distribution of Repositories

S/N	Language of the Content	Central Africa	% age	Eastern Africa	% age	Northern Africa	% age	Southern Africa	% age	Western Africa	% age	Total	% age
1.	Arabic	-	0%	-	0%	2	4%	-	0%	-	0%	2	1%
2.	English	1	100%	96	94%	40	74%	54	92%	39	85%	230	88%
3.	French	-	0%	1	1%	10	19%	-	0%	2	4%	13	5%
4.	Sudanese	-	0%	-	0%	2	4%	-	0%	-	0%	2	1%
5.	Unspecified	-	0%	5	5%	-	0%	5	8%	5	11%	15	6%
	Total	1		102		54		59		46		262	

Table 9 presents the Language of the Content of OARs in Africa. English was the most used language with a record of 230 representing 88%. This was followed by French –13 (5%), Arabic, and Sudanese 2 (1%), respectively, even though the language of 15 (6%) OARs was unspecified.

Table 10: Type of Content Deposited in OARs in Africa

S/N	Type	Central Africa	Eastern Africa	Northern Africa	Southern Africa	Western Africa	Total	Position
1.	Bibliographic References	0	17	11	5	6	99	5th
2.	Books, Chapters and Sections	0	41	18	17	16	92	6th
3.	Conference and Workshop Papers	0	62	18	24	17	121	3rd
4.	Datasets	0	4	3	8	3	18	9th
5.	Journal Articles	1	86	40	38	39	204	1st
6.	Learning Objects	0	23	11	8	8	50	8th
7.	Other Special Item Types	0	29	23	26	6	84	7th
8.	Patents	0	3	0	2	2	7	10th
9.	Theses and Dissertations	1	80	45	44	31	201	2nd

10.	Reports and Working Papers	0	57	13	19	12	101	4th
11.	Software	0	2	2	0	1	5	11th

Journal articles lead as the most deposited content with 204, followed by Theses and Dissertations (201), Conference and Workshop Papers (121), and Reports and Working Papers (101), respectively. Conversely, the last but one content type deposited in OARs in Africa is Patents (7) which took the 10th position, while Software is the last at 5 taking the 11th position.

A further breakdown according to regions reveals that Central Africa had Journal articles and Theses and Dissertations as the only deposited content type. In Eastern Africa, Journal articles took tops at 86, followed by Theses and Dissertations at 80 while the least deposited is Software(2). The others include: Conference and Workshop Papers (62); Reports and Working Papers (57); Books, Chapters and Sections (41); Other Special Item Types (29); Learning Objects (23); Bibliographic References (17); Datasets (4); and Patents (3). In Northern Africa, Theses and Dissertations took tops at 45, followed by Journal articles at 40, while the least deposited is Software (2). The others in descending order include Other Special Item Types (23); Books, Chapters and Sections (18); Conference and Workshop Papers (18); Reports and Working Papers (13); Bibliographic References (11); Learning Objects (11); and Datasets (3).

Again, in Southern Africa, Theses and Dissertations took tops at 44, followed by Journal articles (38). There was no single deposit for Software (0) while other contents were deposited as follows: Other Special Item Types (26); Conference and Workshop Papers (24); Reports, and Working Papers (19); Books, Chapters and Sections (16); Datasets (8); Learning Objects (8); Bibliographic References (5); and Patents (2). Finally, in Western Africa, the most deposited content was Journal Articles (39); while the least deposited was Software (1). The others include Theses and Dissertations (31); Conference and Workshop Papers (17); Books, Chapters and Sections (16); Reports and Working Papers (12); Learning Objects (8); Bibliographic References (6); Other Special Item Types (6); Datasets (3); and Patents (2).

Discussion

Geographical Distribution of African Repositories

The study revealed that out of the 5,905 repositories listed, 259 are from Africa. This shows a promising growth rate as the study on the status of OARs by Ali et al. (2013) found that Africa had 50 OARs as of 2012. The study also found that concerning regions, Eastern Africa had the highest number of OARs while Central Africa had the lowest number of OARs.The implication of the result in

Table 1 is that research from Eastern Africa is more easily accessible to the global community, potentially increasing its impact and engagement. In contrast, this may not be the case for Central Africa.

Country-Based Distribution of African Repositories

It was also established that concerning countries, South Africa came first, having the highest number of OARs while Kenya took the second position. Nigeria was ranked third at 31 OARs while Cameroon was ranked twenty-fourth with only one OAR. This implies that there is a steady improvement in the growth of repositories across the countries in Africa as a study by Adewole-Odeshi and Ezechukwu (2020) found that Nigeria had a total of 25 open access repositories which has now moved up to 31 OARs. Furthermore, the result in Table 2 implies that countries with more OARs like South Africa, Kenya and Nigeria, may experience increased visibility and impact of their research. This can lead to greater academic recognition and influence within the global research community. Conversely, countries with fewer OARs, such as Cameroon, Cabo Verde, Lesotho, Mozambique, Namibia, Rwanda and Tunisia, may face challenges in achieving similar levels of visibility and impact for their research.

OAR spread across countries in the regions of Africa

The global visibility of African scholarly communication is not impressive because even though Africa has a total of 54 countries, only 24 countries have OARs listed in OpenDOAR thus making a paltry 44% representation. This is indeed appalling because Africa has the second-largest population in the world. The implication is that 56% of African scholarly communication is missing from the global space. The discovery aligns with Ocholla's study (2011, as cited in Igwe, 2014), which asserts that the development of OARs in Africa is lacking. Out of the 53 independent African countries, only 11 have established 42 OARs, representing approximately 3% of the world's total. Furthermore, the 100% representation in Northern Africa and 80% representation in Southern Africa as seen in Table 3 could indicate that these regions have strong mechanisms and policies in place to support open access. This could serve as a model for other regions aiming to enhance their open access infrastructure.

Type of Open Access Repositories in the African Region

Additionally, African scholarly communications made available on the global space are mostly generated by institutions of learning as the study shows that the highest type of OARs across the African continent is institutional repositories. This is equally evident in all the regions within the continent. The result is in line

with the study by Loan and Sheikh (2016) which found that the majority of the repositories constituting 74% were institutional in nature. Even outside the African continent, the result of the study further agrees with that of Islam and Akter (2013) who found that 100% of the OARs in Bangladesh are institutional repositories. However, the fact that institutional repositories dominate as the primary drivers of open access across all regions in Africa, as shown in Table 4, should not be accepted as the norm. To enhance the visibility and accessibility of research across specific fields, disciplinary and aggregating repositories may be needed to complement the dominant institutional repositories, providing more comprehensive access to diverse types of content.

Subjects Deposited in African OARs by Regions

Generally, across the African OARs, the most archived subject is Social Sciences, followed by Sciences, while the least archived subject is Mathematics. A similar study on Indian OARs by Saikia et al. (2023) found Science as the dominant subject. Social sciences and Sciences as the most frequently deposited subjects across most African regions, as seen in Table 5, imply that these fields are heavily researched and prioritized for open access in Africa. Engineering and Mathematics are consistently the least deposited subjects, suggesting these areas might be underrepresented in open access repositories. This could be due to several factors, including fewer research outputs in these fields, lower emphasis on open access in these disciplines, or challenges in disseminating technical content through OAR. These fields are critical for technological development and innovation, and enhancing their representation in OARs for visibility could foster more innovation and application of research findings.

Year-Wise Growth Pattern of African OARs

The very low numbers of OARs in the early years, as shown in Table 6, highlight the challenges of early adoption, where awareness, infrastructure and resources were likely limited. The gradual increase in repositories from 2013 onwards reflects growing recognition of the importance of open access in Africa, as well as the increasing capacity of institutions to support these initiatives. The decline in the years following the peak in 2019 suggests that renewed efforts may be needed to sustain growth.

Year-range Distribution of newly registered OARs by Country

The year-range distribution of newly established OARs by country indicates that the peak of OARs registrations was between 2013 and 2016 (32%), closely followed by 2017–2020 at 31% and 2021 and above with a record of 16% registrations. South Africa was in the lead in establishing open access repositories

(OARs), showcasing its early commitment to open access initiatives on the continent. This leadership continued until 2012, marking the start of a broader adoption of open access repositories across Africa. From 2013 to 2020, Kenya emerged as the new leader, reflecting a shift in leadership and an expansion of open access efforts in Eastern Africa. Despite this, South Africa remained a key player, demonstrating ongoing dedication to open access. In the post-COVID period (2021 and beyond), South Africa reclaimed its leadership position, likely due to its advanced research infrastructure and strong institutional support. The increasing involvement of African countries over time as seen in Table 7 highlights a positive trend towards greater visibility and dissemination of scholarly communication.

Software-Wise Distribution of OARs in African regions

DSpace was the most prevalent with 83% percent of the survey respondents using it for their OAR. This is followed by Eprints which is used by5 percent of the respondents. It is in line with Loan and Sheikh's (2016) study which revealed that DSpace also is the most popular software used by 35% of repositories, followed by EPrints at 17%.The similarity is also seen in the results of an exploratory study on the global visibility of open-access institutional repositories of the South Asian Association for Regional Cooperation (SAARC) countries by Madan, et al. (2020) which found that DSpace is the predominant software utilised for establishing the majority of repositories (61%), followed by EPrints (25%).The finding of the study further agrees with that of Ejikeme and Ezema, (2019) who found out that 70% of the OARs in Nigeria use DSpace as the archiving software. The implication of this finding is that the overwhelming use of DSpace suggests a standardization in repository software that could lead to improved interoperability and easier cross--repository searches. This can enhance the visibility and accessibility of African scholarly outputs both within the continent and globally.

Language Wise Distribution of Repositories

The study revealed that some OARsin Africa had multiple languages. Specifically, in Eastern Africa, one country had dual language content while two countries in Northern Africa had dual language content. The most used language of OARs in Africa, however, is English with a record of 230 representing 88%. The finding agrees with the study by Ali et al. (2013) which found that English ranked the list of the top ten languages prominently used by OARs. It also agrees with Madan et al.'s (2020) study which found out that 75% of the repositories are documented in the English language. The dominance of English in African OARs significantly impacts global visibility, as it ensures that much of African scholarly work is accessible to a wide international audience due to English's role as a widely understood international language. However, this also highlights concerns about inclusivity and the representation of non-English-speaking scholars.

Important research conducted in local languages, as well as in French, Arabic or other regional languages, may be underrepresented, potentially leading to an imbalance in the dissemination of knowledge.

Type of Content Deposited in OARs in Africa

The dominant contents of the OARs in Africa are Journal articles, followed by Theses and Dissertations. This is in agreement with Loan and Sheikh's (2016) study on open-access health and medical repositories which found that the contents were mostly articles (76%), followed by theses (50%). It further agrees with Ali et al.'s (2013) study which found that out of the 10 content types identified, the largest portion consists of Journal articles (22%), followed by Theses and Dissertations (17%). A similar finding was observed outside of Africa, where a study on Indian OARs by Saikia et al., (2023) revealed that journal articles (19.90%) are the most prevalent content, followed by theses and dissertations (15.45%). The strong presence of Journal articles and Theses/Dissertations as the most commonly deposited content types boosts the visibility of African peer-reviewed and graduate research, which are often the most cited and widely utilised forms of academic content. However, the relatively low numbers of other content types, such as datasets, learning objects and bibliographic references, indicate potential challenges. These challenges may relate to the infrastructure, skills or policies necessary to support the deposit of a more diverse range of content.

Conclusion

There is no lie in saying that Africa is endowed with a rich and diverse heritage, some of which has been captured in its literature and scholarly research. This wealth of knowledge is not only a testament to the continent's historical and cultural depth but also holds significant value for global academia. Open Access Repositories (OARs) are crucial in enhancing the visibility of African scholarly communications. By providing unrestricted access to research outputs, OARs facilitate a broader dissemination of African intellectual contributions, ensuring that they reach a wider audience beyond traditional publishing barriers. The visibility gained through OARs can lead to increased citations and recognition for both academic institutions and individual authors, amplifying their impact on the global stage. This is particularly important for Africa, which has an immense reservoir of knowledge and innovative research that deserves to be shared and acknowledged worldwide. The continent cannot afford to lag behind in the realm of scholarly output visibility. Therefore, it is imperative that OARs are given the attention they deserve. Stakeholders must collaborate and make deliberate efforts to ensure that African scholarly work is effectively represented alongside that of their global counterparts. This proactive approach will help to highlight Africa's

contributions to global knowledge and ensure that its intellectual treasures are appropriately recognised and valued in the international academic community.

Recommendations

To this end, the study recommends that:

1. *African institutions should commit to establishing and maintaining OARs:* African institutions must move beyond mere verbal commitments and take tangible actions to establish and maintain Open Access Repositories (OARs). The creation of these repositories should not be seen as a secondary concern but as a fundamental part of advancing African scholarly output on the global stage. Institutions need to invest in the infrastructure, resources and training required to ensure that OARs are functional, accessible and actively managed.
2. *African countries and regions should promote National and Regional Initiatives:* African countries and regions should consider the development of OARs as a collaborative national or regional project. By adopting a coordinated approach, countries can support and encourage institutions that are currently lagging behind. This could involve creating frameworks for shared resources, establishing guidelines and providing incentives to foster the development and adoption of OARs across the continent. Such initiatives can also help to standardise practices and enhance the overall quality of African scholarly communications.
3. *African authors should be educated on the benefits of OARs:* African authors need to be informed about the advantages of depositing their scholarly work in open access repositories. This education should focus on how depositing in OARs can increase the visibility and impact of their research, leading to higher citation rates and broader recognition. Awareness campaigns, workshops and training sessions can help authors understand the benefits and navigate the process of depositing their work in these repositories.

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Dr Okeoma Chinelo Ezechukwu jest wybitnym bibliotekarzem z bogatym doświadczeniem zarówno w bibliotekach publicznych, jak i akademickich. Uzyskała tytuł licencjata bibliotekoznawstwa/języka angielskiego na Uniwersytecie Nnamdi Azikiwe w Awka, tytuł magistra bibliotekoznawstwa i informacji naukowej na Uniwersytecie w Ibadan oraz doktorat z bibliotekoznawstwa i informacji naukowej na Uniwersytecie Nnamdi Azikiwe w Awka. Pełniła funkcję kierownika eBiblioteki i inwentaryzatora w Państwowej Centralnej Bibliotece Elektronicznej im. prof. Kennetha Dike'a (Rada Biblioteki Stanowej Anambra) w Awce, a obecnie pełni funkcję Kierownika Sekcji Konserwacji Dokumentów i Kierownika Repozytorium Instytucjonalnego w Bibliotece Uniwersytetu Uyo. Oprócz pełnienia funkcji administracyjnych, dr Ezechukwu wniosła znaczący wkład w tę dziedzinę poprzez publika-

cję kilku artykułów zarówno w lokalnych, jak i międzynarodowych czasopismach. Ponadto pracuje jako wykładowca w niepełnym wymiarze godzin na Wydziale Bibliotekoznawstwa i Informacji Naukowej na Uniwersytecie Uyo w Nigerii. Jej obszar zainteresowań to bibliotekarstwo cyfrowe, bibliometria i analiza cytowań oraz usługi bibliotek publicznych. Jej pasją jest integracja nowoczesnych technologii z usługami bibliotecznymi i informacyjnymi. Certyfikowana przez Nigeryjską Radę Rejestracji Bibliotekarzy (LRCN), jest aktywnym członkiem Nigeryjskiego Stowarzyszenia Bibliotek (NLA) i jego Sekcji Technologii Informacyjnych. Z dr Ezechukwu można się skontaktować za pośrednictwem poczty elektronicznej pod adresem okeomaezechukwu@uniuyo.edu.ng.

Dr Egbe Adewole-Odeshi jest doświadczonym bibliotekarzem z ponad dziesięcioletnią praktyką zawodową. Jej przygoda akademicka obejmuje licencjat z ekonomii na Uniwersytecie Stanowym Delta w Nigerii, tytuł magistra nauk informacyjnych na Uniwersytecie Ibadan w Nigerii oraz doktorat z bibliotekoznawstwa i informacji naukowej na Uniwersytecie Calabar w Nigerii. Pracowała jako bibliotekarka systemowa i specjalistka ds. zasobów w Centrum Zasobów Edukacyjnych na Uniwersytecie Covenant w Ota, w Nigerii. Dr Adewole-Odeshi, certyfikowany bibliotekarz w Nigeryjskiej Radzie Rejestracji Bibliotekarzy (LRCN), pełni obecnie funkcję kierownika Sekcji E-Zasobów i Automatyzacji w Bibliotece Uniwersytetu Uyo. Dodatkowo dzieli się swoją wiedzą jako wykładowca w niepełnym wymiarze godzin na Wydziale Bibliotekoznawstwa i Informacji Naukowej, opiekując się studentami na poziomie dyplomowym, licencjackim i podyplomowym. Dr Adewole-Odeshi jest aktywnym członkiem Nigeryjskiego Stowarzyszenia Bibliotek w oddziale stanowym Akwa Ibom. Współpracowała zarówno z czasopismami lokalnymi, jak i międzynarodowymi. Jej obszar specjalizacji obejmuje; e-zasoby biblioteczne, automatyzacja bibliotek i digitalizacja. Posiada umiejętności m.in. w zakresie katalogowania online, korzystania z oprogramowania do wykrywania plagiatów firmy Turnitin, indeksowania czasopism online i administrowania witrynami internetowymi. Można się z nią skontaktować za pośrednictwem egbeodeshi@uniuyo.edu.ng.

Dr Ufuoma Dymphna Onobrakpor uzyskała tytuł magistra na Uniwersytecie Stanowym Delta w Abraka, tytuł magistra zarządzania informacją na Uniwersytecie Ahmadu Bello w Zarii oraz tytuł doktora filozofii w dziedzinie bibliotekoznawstwa i informacji naukowej na Uniwersytecie Rolniczym Michaela Okpara w Umudike w Nigerii. Jest certyfikowanym bibliotekarzem w Nigeryjskiej Radzie Rejestracji Bibliotekarzy. Dr Onobrakpor jest bibliotekarzem akademickim w Bibliotece Uniwersytetu Uyo i dyrektorem American Space: Uyo Window on America. Wykłada również na Wydziale Bibliotekoznawstwa i Informacji Naukowej Uniwersytetu w Uyo. Dr Onobrakpor jest aktywnym członkiem Nigeryjskiego Stowarzyszenia Bibliotek (NLA) oddziału stanowego Akwalbom, sekcji IT Nigeryjskiego Stowarzyszenia Bibliotek (NLA) oraz Krajowego Stowarzyszenia Edukatorów Bibliotekoznawstwa i Informacji Naukowej (NALISE). Uczestniczyła w kilku konferencjach krajowych i międzynarodowych. Jej prace były szeroko publikowane, w formie artykułów w lokalnych i międzynarodowych czasopismach recenzowanych i jest autorką kilku rozdziałów w książkach. Jej obszary specjalizacji obejmują technologie informacyjne i komunikacyjne (ICT),

e-zasoby, umiejętność korzystania z informacji, edukację użytkowników zasobów bibliotecznych oraz wyszukiwanie i wyszukiwanie informacji. Z dr Onobrakporem można się skontaktować pod adresem uonobrakpor@uniuyo.edu.ng.

Słowa kluczowe: repozytoria otwartego dostępu; repozytoria afrykańskie; afrykańska komunikacja naukowa; widoczność dorobku naukowego; OpenDOAR; repozytoria cyfrowe

Abstrakt

Cel: Niniejszy artykuł jest badaniem porównawczym repozytoriów w Afryce pod kątem globalnej widoczności afrykańskiej komunikacji naukowej. Ma na celu przedstawienie szczegółowego opisu i porównania repozytoriów w Afryce według regionu, kraju, typu repozytorium, roku założenia, typu treści, typu oprogramowania i języka treści.

Projekt/metodologia/podejście: Korzystając z metodologii systematycznego przeglądu treści i techniki całkowitego enumeratywnego doboru próby, dokonano przeglądu łącznie 259 afrykańskich repozytoriów pobranych z bazy danych Directory of Open Access Repositories w ciągu jednego tygodnia.

Wyniki: Badanie wykazało, że spośród 5 905 wymienionych repozytoriów, 259 pochodzi z Afryki. Repozytoria są rozmieszczone w 24 z 54 krajów tworzących kontynent, co stanowi 44% reprezentacji afrykańskiej komunikacji naukowej przez kraje w przestrzeni globalnej. W podziale na regiony, Afryka Wschodnia miała największą liczbę repozytoriów (101 (39%)), niezmiennie stając się regionem afrykańskim o najbardziej widocznej komunikacji naukowej, podczas gdy Afryka Środkowa miała najmniejszą liczbę repozytoriów (1) (0,4%). W podziale na kraje Republika Południowej Afryki znalazła się na czele innych krajów z 51 (20%) repozytoriami, podczas gdy Kamerun miał ich najmniej (1 (0,3%)). Afrykańska komunikacja naukowa z największą widocznością to nauki społeczne (223), podczas gdy najmniej zarchiwizowanym przedmiotem jest matematyka (176). Afrykańska komunikacja naukowa udostępniana w przestrzeni globalnej jest w większości generowana przez instytucje edukacyjne, ponieważ badanie pokazuje, że 243 (94%) OAR w Afryce to repozytoria instytucjonalne.

Oryginalność/wartość: Badanie ujawniło niewielki wkład afrykańskich repozytoriów w zapewnienie globalnej widoczności afrykańskiej komunikacji naukowej. Ujawnia to słabość kontynentu afrykańskiego w badaniu potencjału OAR w szerszym rozpowszechnianiu ich komunikacji naukowej. Afryka ma drugą co do wielkości populację na świecie i powinna generować więcej komunikacji naukowej w przestrzeni globalnej. W związku z tym w badaniu zaleca się m.in., aby instytucje afrykańskie zobowiązały się do ustanowienia i utrzymania OAR, jeśli afrykańska komunikacja naukowa będzie widoczna w przestrzeni globalnej.

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Die Untersuchung der globalen Sichtbarkeit der afrikanischen wissenschaftlichen Kommunikation: eine Vergleichsanalyse von Open-Access-Repositorien in Afrika

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Dr. Okeoma Chinelo Ezechukwu ist eine hervorragende Bibliothekarin mit reicher Erfahrung in öffentlichen und akademischen Bibliotheken. Sie hat einen Bachelorabschluss in Bibliothekswissenschaft / Anglistik der Nnamdi Azikiwe Universität in Awka, einen Masterabschluss im Fachbereich Bibliotheks- und Informationswissenschaft der Universität in Ibadan sowie einen Doktortitel im Fachbereich Bibliotheks- und Informationswissenschaft der Nnamdi Azikiwe Universität in Awka. Sie arbeitete als Leiterin der eLibrary und Katalogisierer in in der Prof. Kenneth Dike State Central eLibrary (Anambra State Library Board), Awka, und derzeit ist sie Leiterin der Abteilung für Dokumentenkonservierung und des institutionellen Repositoriums an der Universitätsbibliothek Uyo. Abgesehen von ihren administrativen Aufgaben hat Dr. Ezechukwu wesentlich zu diesem Fachbereich beigetra-

gen, indem sie mehrere Artikel in lokalen und internationalen Fachzeitschriften veröffentlicht hat. Zudem ist sie Dozentin im Lehrstuhl für Bibliotheks- und Informationswissenschaft der Uyo Universität in Nigeria. Ihr Forschungsinteresse umfasst digitale Bibliothekswissenschaft, Bibliometrie und Zitationsanalyse sowie Dienstleistungen öffentlicher Bibliotheken. Ihre Leidenschaft besteht darin, moderne Technologien mit Bibliotheks- und Informationsdiensten zu integrieren. Sie besitzt ein Zertifikat des Nigerianischen Bibliotheksregistrierungsrats (Librarians' Registration Council of Nigeria, LRCN), ist aktives Mitglied des Verbands der Nigerianischen Bibliotheken (Nigerian Library Association, NLA) und seiner Sektion für Informationstechnologie. Dr. Ezechukwu ist per E-Mail unter der Adresse okeomaezechukwu@uniuyo.edu.ng erreichbar.

Dr. Egbe Adewole-Odeshi ist eine erfahrene Bibliothekarin mit über zehn Jahren Berufserfahrung. Ihre akademische Laufbahn umfasst einen Bachelorabschluss in Ökonomieder Delta Bundesuniversität in Nigeria, einen Masterabschluss im Fachbereich Wissenschaftliche Information der Universität Ibadan in Nigeria sowie einen Doktortitel im Fachbereich Bibliothekswissenschaft und Informationswissenschaft von der Universität Calabar in Nigeria. Sie arbeitete als Systembibliothekarin und Spezialistin für Ressourcen im Zentrum der Bildungsressourcen an der Universität Covenant Ota in Nigeria. Dr. Adewole-Odeshi ist eine zertifizierte Bibliothekarin im Nigerianischen Bibliotheksregistrierungsrat (Librarians' Registration Council of Nigeria, LRCN), arbeitet derzeit als Leiterin der Sektion E-Ressources and Automation in der Universitätsbibliothek Uyo. Zusätzlich unterrichtet sie als Dozentin im Lehrstuhl für Bibliotheks- und Informationswissenschaft und betreut Studierende im Diplom-, Bachelor- und Aufbaustudium. Dr. Adewole-Odeshi ist ein aktives Mitglied des Verbands der Nigerianischen Bibliotheken (Nigerian Library Association, NLA), Bundesabteilung Akwa Ibom. Sie hat sowohl zu lokalen als auch internationalen Fachzeitschriften einen großen Beitrag geleistet. Ihr Spezialgebiet umfasst: elektronische Bibliotheksressourcen, Bibliotheksautomatisierung und Digitalisierung. Sie verfügt über Fähigkeiten in der Online-Katalogisierung, der Nutzung von Turnitin zur Plagiaterkennung, der Online-Indexierung von Zeitschriften und der Verwaltung von Websites. Sie kann unter egbeodeshi@uniuyo.edu.ng kontaktiert werden.

Dr. Ufuoma Dymphna Onobrakpor hat einen Bachelorabschluss der Delta Bundesuniversität, Abraka, einen Masterabschluss in Informationsverwaltung von der Ahmadu Bello Universität, Zaria, sowie einen Doktortitel im Fachbereich Bibliothekswissenschaft und Wissenschaftliche Information von der Michael Okpara Universität für Landwirtschaft, Umudike, Nigeria. Sie ist eine zertifizierte Bibliothekarin im Nigerianischen Bibliotheksregistrierungsrat (Librarians' Registration Council of Nigeria, LRCN). Dr. Onobrakpor ist eine akademische Bibliothekarin in der Universitätsbibliothek Uyo und Direktorin von American Space: Uyo Window on America. Zudem unterrichtet sie als Dozentin an der Fakultät für Bibliotheks- und Informationswissenschaft der Uyo Universität. Sie ist auch ein aktives Mitglied der Abteilung desVerbands der Nigerianischen Bibliotheken (Nigerian Library Association, NLA), Bundesabteilung Akwa Ibom, der IT-Sektion desselben Verbands und des Nationalverbands der Bibliotheks- und Informationswissenschaftlichen Ausbilder (National Association of Library and

Information Science Educators, NALISE). Sie hat an mehreren nationalen und internationalen Konferenzen teilgenommen und Beiträge in lokalen und internationalen Fachzeitschriften und als Buchkapitelveröffentlicht. Ihre Fachgebiete umfassen Informations- und Kommunikationstechnologien (ICT), elektronische Ressourcen, Informationskompetenz, Benutzerschulung in Bibliotheksressourcen sowie Informationssuche und -beschaffung. Dr. Onobrakpor kann unter der Adresse uonobrakpor@uniuyo.edu.ng kontaktiert werden.

Schlüsselworte: Open-Access-Repositorien; afrikanische Repositorien; afrikanische wissenschaftliche Kommunikation; Sichtbarkeit von Forschungsergebnissen; Katalog der Open-Access-Repositorien (OpenDOAR); digitale Repositorien

Zusammenfassung

Ziel: Der vorliegende Artikel ist eine Vergleichsanalyse von afrikanischen Repositorien im Hinblick auf die globale Sichtbarkeit der afrikanischen wissenschaftlichen Kommunikation. Sein Ziel ist, die Repositorien in Afrika nach den folgenden Kriterien: Region, Land, Typ des Repositoriums, Gründungsjahr, Inhaltstyp, Softwaretyp, Inhaltssprache, umfassend zu beschreiben und miteinander zu vergleichen.

Projekt / Methodologie / Zugang: Durch die Anwendung der Methodologie der systematischen Inhaltsübersicht und der Technik der vollständigen Stichprobenauswahl wurden innerhalb einer Woche insgesamt 259 afrikanische Repositorien aus dem Katalog der Open-Access-Repositorien überprüft.

Forschungsergebnisse: Die Studie zeigte, dass 259 der 5905 genannten Repositorien aus Afrika stammen. Sie sind auf 24 der 54 Länder des Kontinents verteilt, was insgesamt 44% der Repräsentation der afrikanischen wissenschaftlichen Kommunikation auf globaler Ebene ausmacht. Nach Region hatte Ostafrika die größte Anzahl an Repositorien, 101 (39%), und ist damit die Region in Afrika mit der sichtbarsten wissenschaftlichen Kommunikation, während Zentralafrika die geringste Anzahl an Open-Access-Repositorien (OAR) aufweist, 1 (0,4%). Nach dem Landeskriterium hatte die Republik Südafrika die meisten Repositorien mit 51 (20%), während Kamerun am wenigsten hatte, 1 (0,3%). Die am sichtbarsten vertretene wissenschaftliche Disziplin in Afrika sind die Sozialwissenschaften auf Platz 223, während das am wenigsten archivierte Fach Mathematik auf Platz 176 liegt. Die wissenschaftliche Kommunikation in Afrika, die global zugänglich ist, wird überwiegend von Bildungseinrichtungen generiert, da die Studie zeigt, dass 243 (94%) der OAR in Afrika institutionelle Repositorien sind.

Originalität / Wert: Die Untersuchung hat gezeigt, dass afrikanische Repositorien nur einen geringen Beitrag zur globalen Sichtbarkeit der afrikanischen wissenschaftlichen Kommunikation leisten. Sie offenbart die Schwäche des afrikanischen Kontinents bei der Erschließung des Potenzials von Open-Access-Repositorien (OAR) zur breiteren Verbreitung ihrer wissenschaftlichen Kommunikation. Afrika hat die zweitgrößte Bevölkerung der Welt und sollte daher mehr wissenschaftliche Kommunikation im globalen Raum generieren.