

Navigating the Digital Divide: Challenges and Opportunities in Research Publishing for African Scholars

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From ancient times, African civilization has participated in knowledge production and dissemination. The nature of research production and publishing in Africa varied throughout the years according to the influences and infrastructures present at each point in time. The colonization era was a landmark in the evolution of research practice and research publishing in Africa. It had consequences that lasted long after independence and contributed to the underdevelopment of research production and publishing systems in Africa. Currently, Africa is lagging behind in terms of its contribution to global research. An increase in African research output and an improvement of its visibility are needed. The digitization of research publishing holds great opportunities for the enhancement of scholarly publishing systems in Africa, yet it is faced with challenges. This article identifies the major challenges faced by governments, institutions, and scholars in digitizing research publishing in Africa. These challenges include limited funding, poor infrastructures, low research output, language barriers, difficulties in establishing quality assurance, copyright issues, data-management issues, and lack of policies and regulations. Addressing these challenges in local contexts is necessary to enhance digital research publishing in Africa.

Introduction

In the current millennium, a number of voices have stressed the need to foster increased research publishing by African scholars. The first argument is that it will

serve as a tool to advance the knowledge and scholarship needed to accelerate Africa's academic and socio-economic development. In this way it will facilitate the dissemination of the continent's newly produced science, innovative solutions, and local insights and thereby contribute to the enrichment of the academic and professional disciplines (Ondari-Okemwa 2007).

Second, research production and publishing are crucial in order to address pressing societal challenges such as healthcare disparities, food security, and climate change adaptation with a lens more focused on African communities (World Bank 2014). Research publications are means to provide policymakers with evidence-based knowledge that helps them design more personalized and effective solutions (Porteous 2022).

Third, it is argued that increased research publishing by African scholars is important to foster innovation and entrepreneurship, which contribute to overall economic development. It creates a knowledge-driven economy that attracts investments and drives the technological advancements crucial to the advancement of economies in Africa and beyond (Szirmai *et al.* 2011). By translating research findings into practices, the professional industries can enhance their outcomes. It also serves as a means of capacity building and education for an opportunity to learn from and engage with local and global academic industries. In addition, knowledge sharing enhances the performance of commercial, public, and educational institutions (Al-Kurdi *et al.* 2018).

Fourth, research publishing is expected to enhance the global visibility of Africa's research output. Collaborations on research projects between African and non-African scholars will provide an opportunity to strengthen the capacity and reputation of African research institutions (ISJEM n.d.). Research communication promotes interdisciplinary learning and cross-cultural understanding. Supporting research practice, research communication, and the access to research publications is vital for Africa's future prosperity (Bgoya and Jay 2013).

In order to increase the research publishing of African scholars, digitization is indeed an opportunity. It will enhance the global visibility of African research outputs as online-published research papers are more likely to be cited. This increases the impact and recognition of African scholars and institutions. Digital research publishing will make scholarly content more accessible to a broader audience by removing physical and financial accessibility barriers. This will enable researchers, students, and policymakers across Africa and the world to access African research more conveniently (Branin and Case 1998; Ngoben 2010).

Another advantage of digital publishing is that it will reduce the costs associated with traditional printed publishing. Institutions can allocate resources more efficiently and direct funds toward research and capacity building. Through digital publishing, researchers can share their work with the global audience in real time. This accelerates the exchange of knowledge, fosters interdisciplinary research, and encourages faster responses to critical issues (Steele 2006).

Moreover, digitization will provide affordable, quick, flexible, collaborative, and more accessible modes to disseminate research findings (Stojanović 2014). They will

also help in ensuring the long-term preservation and archiving of research outputs in areas of African interest, such as cultural heritage. This makes historical research content secure and available to future generations (Perera 2023).

Against the above backdrop, this article aims at identifying and analysing the different challenges of digital research publishing faced by scholars, institutions, and publishers in Africa. It aims to foster a deeper understanding of Africa's unique challenges in disseminating and accessing research digitally. The article first provides a historical background regarding research in Africa. Then it explores the contemporary challenges of (1) limited funding, (2) poor infrastructure, (3) low research output, (4) language barriers, (5) difficulties of quality assurance and peer review, (6) copyright and intellectual property issues, (7) data management, and (8) policies and regulations.

Research in Africa

Research Practices

Africa has a heritage of indigenous knowledge that predates colonialism. Research practice in Africa dates to many centuries before Christ. Ancient African civilizations, such as those in Egypt and sub-Saharan Africa, contributed to mathematics, astronomy, medicine, and other scientific fields. Those early forms of knowledge production and communication laid the foundation for subsequent scholarly pursuits. This reflects the continent's rich intellectual heritage and its ancient evolution of knowledge production systems (Gerdes 1994; Akinyemi and Ogunniyi 2020).

The colonial era of Africa marked a significant shift in the continent's research practice. Colonial powers controlled the African academic landscape by imposing Eurocentric research agendas that often disregard indigenous knowledge and local needs. Research practice during this era often served the colonial interests and contributed to the processes of resource extraction and societal subjugation (Crawford *et al.* 2021).

After the independence movements in the mid-twentieth century, African nations began to build and reform their research practices and policies. The newly independent states started investing more in education and research, which contributed to the growth and development of local scholarship. Despite this progress, the African research landscape continued to face various challenges such as limited funding, inadequate infrastructure, and a brain drain. Efforts to address and solve these challenges came with collaborations, research networks, and initiatives aimed to strengthen the research practices and capacity on the continent (Ondari-Okemwa 2007).

Today, African societies are experiencing strong growth in terms of policymaking and investments in education, science, and technology. Initiatives such as the African Union's Agenda 2063 and the Partnership for Applied Science, Engineering and Technology (PASET) convene the continent's stakeholders to prioritize research and innovation as key drivers of Africa's development. The rapid increase in African

scholarly input into global research output reaffirms the continent's position as an important contributor to the global wealth of knowledge (World Bank 2014; African Union 2015).

Research Publishing

The rich history of knowledge sharing practices in Africa reflects the continent's long-standing traditions of research practice and knowledge dissemination. Different knowledge sharing systems thrived within African societies, ranging from simple systems – such as oral communication – to more complex systems – such as the sharing of manuscripts. Such forms of knowledge dissemination existed on the continent long before the introduction of printed research journals (Bgoya and Jay 2013). The evolution of research-publishing practices on the continent from ancient civilizations to modern days shows Africa's continuous attention to knowledge production and dissemination. It also demonstrates the impact of colonizers on Africa's scholarly landscape during and after the colonization era.

Ancient civilizations in the Nile Valley, western, and coastal eastern Africa engaged in scholarly pursuits as proved by the finding of written texts. The origins of research publishing in Africa can thus be traced back to the early civilizations that emerged on the continent. African societies were centres of scholarship, and their knowledge was documented on various mediums, including papyrus and manuscripts (Bgoya and Jay 2013).

However, with the beginning of colonialism in Africa, research publishing on the continent took a different turn. The colonial era brought significant changes to the research publishing landscape of Africa by imposing the colonizers' own agendas. Indigenous knowledge, languages, sharing traditions, and academic needs were often sidelined or suppressed during the colonial era (van den Bersselaar 2006).

The imposition of colonizers' languages as the medium of instruction and research had long-lasting consequences for African scholarly production and communication systems. Most of the indigenous African languages were marginalized, which compromised the process of knowledge dissemination among local populations. The common use of European languages in the publishing of research findings limited the knowledge accessibility for Africans (Ngobeni 2010). Through these linguistic constraints and others, the European colonizers controlled the landscape of knowledge-production and knowledge-dissemination systems, harnessing them to serve colonial interests (Bgoya and Jay 2013).

The mid-twentieth century witnessed an increase in African research practice and publishing as African nations began growing their citizens' literacy levels after independence. African scholars and intellectuals recognized the importance of documenting their own narratives and research findings. This era marked the establishment of academic journals and publishing houses dedicated to African research, particularly during the 1970s and early 1980s (Bgoya and Jay 2013).

In the late twentieth century, pan-African initiatives aimed to support research and foster collaboration among African scholars were being established. These

initiatives included The Council for the Development of Social Science Research in Africa (CODESRIA), which was established in Senegal in 1973. CODESRIA aims to contribute to the development of a scholarly publishing culture in the continent as well as to promote excellence in publishing (Bgoya and Jay 2013).

The legacy of colonialism continues to affect the research publishing landscape of Africa, influencing its accessibility practices, language choices, and research priorities. African scholars and publishing systems continue to grapple with the legacy of colonialism with the aim of reconstructing their scholarly publishing systems to meet their local needs and interests (Zegeye and Vambe 2006). Understanding this historical context is essential for the proper addressing of challenges and the promotion of a more inclusive and equitable research landscape on the continent.

Research Output

The recent increase in numbers of scientific research papers produced by African scholars is a good sign of progress on the continent. Between 2003 and 2012, the annual number of research papers published in scientific journals doubled in sub-Saharan Africa. The sub-Saharan African total share of global scholarly content has increased from 0.44% to 0.72%. In this increase, the regions of West and Central Africa recorded faster growth compared with the region of Southern Africa (World Bank 2014).

In the decade between 2003 and 2012, research in health sciences accounted for an average of 45.2% of sub-Saharan Africa's scholarly output, making it the most highly researched scientific area. For South Africa, physical sciences and STEM research comes as the main scientific area of focus, with 44.7% of the country's total research output, compared with only 25% in the other regions of sub-Saharan Africa (World Bank 2014).

The digitization of research publishing and the implementation of open access publishing contributed significantly to the increase of African research output. Digital platforms made it easier for African scholars to access global research, collaborate with international peers, and publish their research findings more widely. Open access initiatives and institutional repositories have also contributed to an enhancement of the visibility of African research outputs (Ngobeni 2010; Schemm 2013).

Infrastructures Supporting Digital Research Publishing

Digital research publishing requires the acquisition of supporting infrastructure that includes human, technical, and organizational components. Digital research publishing in Africa can benefit from the establishment of supporting infrastructures such as digital repositories and archives that serve as central platforms for the preservation and dissemination of scholarly content and datasets. Such platforms

help enhance the visibility and accessibility of African research outputs (Chiwere and Becker 2018).

The incorporation of Digital Object Identifiers (DOIs) and other digital identifiers in the research-publishing systems of Africa can enhance the traceability and citability of research publications. Digital identifiers provide the published materials with unique and persistent alphanumeric strings to help identify and link readers with scholarly works (Paskin 2009). Furthermore, the use of effective content management systems such as WordPress and Drupal are essential for organizing and presenting research materials more effectively. This offers customization flexibilities to help meet the specific needs and requirements of digital research-publishing journals and platforms (Patel *et al.* 2011a, 2011b).

A number of initiatives and platforms were established to help bridge the gaps in research-publishing infrastructures in Africa. They support the growth of digital publishing cultures and enhance the visibility of African research outputs through the implementation of open access principles in research publishing. Such platforms include African Journals Online (AJOL), which offers a vast collection of African research journals, making them more visible and accessible to the global audience (Rotich 2011).

The collaboration with other African institutions and international entities is also integral to the advancement of research infrastructures in Africa. Regional research and education networks, such as the UbuntuNet Alliance, provide eastern and southern African research and academic institutions with high-speed internet connectivity as well as other services to facilitate collaborations in research and education (Ndebvu 2019).

Organizations, library consortia and developers of content management systems often support digital research publishing in Africa and beyond. Content management systems such as DSpace and EPrints are available as open software systems for free and open use by institutions everywhere. Organizations such as eIFL (Electronic Information for Libraries) work with a number of African countries to provide support and empower libraries across Africa to manage and disseminate digital content more openly and effectively (EIFL n.d.).

Capacity building is of significant importance to African digital research-publishing systems and infrastructures. Organizations such as the African Academy of Sciences (AAS) invest in developing programs to help enhance the research knowledge and skills of African scholars. This enhances scholars' abilities to produce and publish African scholarly content that contributes to the global wealth of knowledge (AAS n.d.).

Data management is also of significant importance in digital research publishing. Infrastructures supporting the collection, organization, dissemination, and preservation of data are largely needed across the continent. Initiatives such as the African Open Science Platform (AOSP) were established with the aim of enhancing research data management for African scholars. This helps in fostering more transparency and collaboration within the scientific research communities in Africa and worldwide (AOSP n.d.).

Challenges of Digital Research Publishing in Africa

Limited Funding

Despite the continent's recent increase of investments in research and development, the areas of research and development are still lacking sufficient funding and support in many African countries. As a result, digital research-publishing systems on the continent also lack sufficient funding. This lack of funding affects the ability of scholars and institutions to conduct research, cover publication costs, and promote positive publication practices. In addition, the absence of financial incentives for researchers to conduct research and participate in peer review processes lowers Africa's research output and discourages open publishing practices (Ondari-Okemwa 2007).

With the limited financial support and the expensive subscription fees of international journals and databases, many African scholars and research institutions find themselves unable to explore and disseminate research content. Limited access to research content can reduce the quality of African research output. Funding for research and research publication in Africa is often unevenly distributed across the institutions and regions. Significant disparities in academia are often seen between scholars and institutions with different access-to-funding and financial profiles (Rotich 2011).

The dependence on external funding sources to support research projects and publications threatens the sustainability of research practice and research publishing on the continent. External funding may impose mandates to follow research topics of limited relevance to African communities. It may also come with restrictions on certain publishing practices such as open access publishing and open research data sharing (Ngobeni 2010).

Gaining access to funding to cover the costs of research conduction and research publication is often a complicated and bureaucratic process. This results in administrative delay, which affects the research practice and the timely dissemination of research findings (Oppenheim *et al.* 2000). Moreover, the African continent is a youthful continent, and therefore the limited funding for research and research publication costs will mostly affect the early-career researchers who are struggling to find themselves a place in the scientific research communities.

Poor Infrastructure

Africa faces a range of challenges when it comes to the infrastructures needed to support research publishing in Africa. These challenges influence the dissemination of the continent's scholarly output and the development of robust research ecosystems. The multifaceted nature of the challenges of infrastructure in Africa make it a complicated area for effective diagnosis and intervention. The challenges include, in addition to the lack of funding, maintenance, development, expertise, and supporting policies. They contribute to the creation of gaps and disparities in research infrastructure across the continent.

The scholarly systems in Africa often suffer from inadequate infrastructures needed to support their scholarly output. Scholars and institutions on the continent often fail to acquire state-of-the-art equipment, maintain facilities, and support research projects effectively. Many research communities in Africa still grapple with issues related to internet connectivity, electricity, and Information and Communication Technology (ICT) infrastructures, which ultimately hampers research production, publication, and access to research content (Ondari-Okemwa 2007).

The poor living and working conditions caused by various factors in Africa and the better opportunities and incentives in other regions have led experts from different fields to migrate from Africa. This brain drain has affected the scholarly publishing systems on the continent, causing a lack in the number of experts in research, ICT infrastructures, and scholarly communication. This lack of expertise comes as a persisting challenge that can only be resolved by addressing the migration causes and by enhancing the living and working conditions on the continent (Ondari-Okemwa 2007).

The fragmentation of research institutions in Africa has also been a contributor to the poor research infrastructural conditions of the continent. Research institutions in Africa partake only in limited collaborations between them. This lack of collaboration stands in the way of rapid development of research infrastructures, interdisciplinary research, and knowledge-sharing systems in Africa. In addition, the limited access to international research collaborations and networks tends to isolate African researchers and research institutions from the global scientific discourse (Joseph 2015; Cerdeira *et al.* 2023).

Moreover, political instabilities, conflicts, and security concerns in some regions of Africa can disrupt the continent's research-publishing systems and threaten the safety of researchers and infrastructures. Support from African governments and stakeholders for scholarly publishing systems is often inadequate (Ondari-Okemwa 2007; Cerdeira *et al.* 2023).

Low Research Output

The low research output of Africa has been a concern for African scholars and research institutions for many years. Despite the continent's huge potential, Africa has not been able to match other regions in terms of research and innovation in the modern day. This leads to serious implications for the continent's medical, social, political, and economic development (Simpkin *et al.* 2019).

Despite the doubling of annual research output in sub-Saharan Africa, the region's contribution to the world's research output remains minor. According to a report examining the research enterprise in sub-Saharan Africa over a decade from 2003 to 2012, published by the World Bank, the region's research output accounts for less than 1% of the world's research output. Meanwhile, the region's population accounts for 12% of the global population (World Bank 2014).

The low research output of Africa can be linked to multiple causes. These include the lack of funding, lack of supporting infrastructures, lack of expertise, absence of governing policies, poor education, language barriers, and a brain drain. Efforts to expand research practice to increase the continent's research output are often under-prioritized by governments and stakeholders (Ondari-Okemwa 2007).

Language Barriers

Africa is celebrated for its racial and linguistic diversity. The continent has a remarkable number of languages – estimated to range from 1500 to 2000 languages (Tirosh 2021). Africa holds one third of the world's languages, with its population only accounting for less than a seventh of the world's population. Language diversity in Africa comes with opportunities in cultural richness and with challenges in education and communication. This reflects the need for linguistic research as well as infrastructures to support the use of local languages in scholarly publishing.

Research published in languages other than English, which is common in some African countries, often has limited options for publication channels, low visibility, and less accessibility. African scholars also face an increased probability of seeing their publications rejected due to weaknesses in English in their submitted manuscripts (Salager-Meyer 2008). Language barriers restrict the communication of African research output, resulting in a loss of opportunities for collaboration and knowledge exchange.

The dominance of the English language in research publishing contributes to building inequalities in knowledge production and dissemination. Native English scholars and scholars with good English language skills often enjoy more advantages in scholarly publishing. In addition, the translation of research papers written in a local African language for dissemination in research journals can diminish the quality and authenticity of the scholarly material (Ondari-Okemwa 2007; Salager-Meyer 2008).

Non-English language publications are less likely to be cited by other scholars, which leads to a reduction in the impact and recognition of African research by global academic communities. African scholars face challenges in the accessibility of, and the publication in, prestigious English-language journals due to their strict language requirements. Early-career researchers in Africa, who tend to be less fluent in English, may face more obstacles in publishing their research findings due to these language barriers (Ngobeni 2010).

Difficulties of Quality Assurance and Peer Review

The incorporation of quality assurance tools and practices into Africa's scholarly communication systems is vital to ensure the credibility and rigor of the scholarly content produced. The process of peer review plays an important role in quality assurance through the screening of research papers by colleagues from the same domain (Ocholla 2011). Many African research communities find it difficult to

sustain peer-review practices due to the lack of interest by qualified scholars to peer review. This can negatively affect the overall quality of research publications on the continent, resulting in citizens' mistrust in science.

Despite the advantages of peer review in quality assurance, peer review can also introduce some issues affecting the quality of the produced papers. Such issues include biases brought by the reviewers, whether conscious or unconscious. This renders the scholarly publishing systems more vulnerable to issues of fairness and justice. In addition, the process of peer review raises other concerns regarding the reviewers' acquisition of adequate knowledge about the submitted topics and their local contexts (Nentwich 2005; Ocholla 2011).

Language diversity in Africa introduces language-related challenges during peer-review processes, especially when manuscripts are submitted in non-English languages. This can potentially limit the pool of qualified reviewers and compromise the understanding of topics. Training opportunities in peer reviewing are lacking in many African countries, which hinders the development of a generation of skilled and diverse reviewers. The lack of institutional support and recognition for peer-review practices can discourage African scholars from participating in this necessary process (Ngoben 2010).

Challenges in quality assurance and peer review may push some scholars and institutions to engage in predatory practices. Bypassing quality assurance practices and proper peer review to expedite publication can compromise the quality and integrity of Africa's research outputs. African journals and publishers often face a shortage of resources, which makes it challenging to implement robust quality assurance and peer review systems. Therefore, discussions around south-south collaborations and sustainable quality assurance tools should be prioritized.

Copyright and Intellectual Property Issues

Areas of copyright and intellectual property laws in scholarly publishing seem to be underdeveloped for most African countries. The challenges in copyright and intellectual property laws and regulations in Africa are often complex, as they are influenced by legal frameworks, cultural norms, and economic status. This lack in formal intellectual property laws and regulations affects not only the communication of newly produced research, but also the communication of already existing indigenous knowledge and cultural heritage.

Collaborative research projects involving African and international scholars may involve complex negotiations over intellectual property rights. This might affect the distribution of ownership in terms of research and data, leaving African scholars and institutions with fewer benefits, owing to the underdeveloped copyright and intellectual property systems in Africa. In addition, the establishment of preprint repositories and archives on the continent can help African scholars and readers overcome research ownership issues (Oppenheim *et al.* 2000).

Open access publishing continues to grow within African research communities, promoting better accessibility and visibility of African research outputs. The

implementation of open access publishing in Africa requires addressing the copyright and intellectual property related gaps on the continent. Digital publishing and the implementation of openness in scholarly publishing have the potential to accelerate the development of scholarly publishing systems in Africa and beyond (Oppenheim 2008; Shavell 2010).

Data Management

The political and financial circumstances of many African countries have imposed challenges related to data management in research production and digital publishing. These unique circumstances and limitations resulted in issues regarding data collection, organization, dissemination, and preservation. Data management issues can significantly affect the quality and accessibility of African research outputs (Lages *et al.* 2015). Determining data ownership and intellectual property rights, especially concerning indigenous knowledge and cultural heritage, is also a key issue on the continent.

Funding and support in research data management infrastructures and capacity building is often neglected in many African countries. Hence, many digital repositories and archives in Africa face serious sustainability issues that might threaten the long-term preservation of African research data. The fragmented efforts and lack of coordination among African countries and institutions hinder the development of effective data-management plans and strategies (Chiwara and Becker 2018).

Sharing research data openly has numerous potentials for the advancement of research and publication in Africa and beyond. Despite its huge advantages, open data sharing raises concerns about data safety and the privacy of individuals. This brings a need for the creation of effective data management laws and regulations, which brings another layer of complexity to research data management in Africa. A culture of ethical research data sharing practices should be encouraged in Africa. Safeguarding research data from cybersecurity threats and ensuring the integrity of the data is also another growing concern in Africa (Kahn *et al.* 2014; Elisha and Mathe 2015).

Policies and Regulations

Digital research publishing in Africa often lacks supportive policies and regulations (Rotich 2011). The lack of understanding of digital research publishing and its needs in Africa from the local governments and policymakers has contributed to the neglect of support and investment in scholarly publishing in the continent. In addition, policies obstructing the advancement of African digital publishing systems are still in use, such as language-diversity-restrictive policies (Bgoya and Jay 2013).

Policies to support the development and advancement of digital research publishing infrastructures – such as institutional repositories and open access journals – are still insufficient across the continent. In addition, policies related to

funding and governmental and institutional support for digital research publishing are often neglected, hindering the success of initiatives and actions aimed toward improving the scholarly publishing systems and promoting research excellence (Tijssen and Kraemer-Mbula 2018).

The lack of policies and their uniformity and consistency among African research communities can lead to confusion and hinder collaborations. The absence or inconsistency of policies, guidelines, and ethical standards in research publication practices and quality assurance can affect the quality and credibility of African research output. Policies aimed toward improving the open sharing of research and research data are often missing in Africa. Many African governments and institutions have yet to invest in the development of policies and regulations to support research practice and digital research publishing (Gaillard 1992).

Conclusions

Research publishing is crucial for the acceleration of Africa's educational and socio-economic development. It will enable the dissemination of Africa's research output, which includes indigenous knowledge, cultural heritage, and innovative solutions for local challenges. The digitalization of research publishing in Africa offers numerous advantages that include enhanced visibility, accessibility, cost efficiency, and collaboration opportunities.

Research publishing in Africa has accomplished multiple milestones throughout history. Knowledge sharing practices varied according to the continent's circumstances and influences during ancient, colonial, and post-colonial eras. Africa's journey in the production of scholarly content has ranged from indigenous knowledge systems to pre-colonial scholarship and post-independence scholarly endeavours. Despite the many historical disruptions in Africa's scholarly systems, the continent has continued to stride forward with growing investments in education, science, research, and technology.

This article has addressed the major challenges faced by research publishing communities in Africa. The first challenge is limited funding. Research publishing in Africa is often under-funded. This affects the development and sustainability of the infrastructures needed to support publishing systems. In addition, limited funding contributes to the brain drain and affects the publishing system's accessibility to needed support and expertise.

The second challenge is the lack of infrastructures needed to support digital research publishing. Many African scholars and institutions face infrastructure-related issues, including electricity, internet connectivity, and ICT infrastructures.

The third challenge is the low research output of Africa. The continent doubled its annual research output in the decade between 2003 and 2012, but the overall percentage of Africa's research output to the global output is still minor. This often results in the marginalization of research publishing by stakeholders in the continent.

The fourth challenge is language barriers. African scholars still struggle with legacies of colonialism that include the suppression of the use of African indigenous languages in research practice and publication. Scholars on the continent are often left disadvantaged and with fewer opportunities for research access and dissemination.

The fifth challenge is quality assurance and peer review. African research publishing systems often struggle to implement and sustain quality assurance practices owing to their limited resources. Engaging African scholars in the peer review process is a concern due to limited incentives.

The sixth challenge is building proper copyright and intellectual property systems. Many African countries lack policies and regulations in the areas of copyright and intellectual property, which makes it challenging for the research-publishing systems to operate in such an environment.

The seventh challenge is effective data management. African scholars and institutions often lack the resources and expertise needed to build and maintain proper data-management systems.

The eighth challenge is the lack of policies and regulations needed to govern the funding, support, quality, copyright, and practice of research publishing in Africa.

Addressing these eight challenges is crucial for the enhancement of digital research publishing in Africa. Further research in digital research in Africa is needed to provide practical solutions and policy recommendations to support the governments, institutions, scholars, and publishers in their efforts to contribute to global knowledge and address local challenges.

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