Challenges and Opportunities of Implementing Open Access Policies

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Abstract
Purpose: The aim of the study was to investigate the challenges and opportunities of implementing open access policies in African universities.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: The implementation of open access policies in African universities faces significant challenges due to limited infrastructure, funding constraints, and inadequate institutional support. However, these challenges also present opportunities for collaboration, capacity building, and leveraging existing networks to enhance access to scholarly research. By overcoming these barriers through strategic partnerships and targeted investments, African universities can foster greater knowledge dissemination, innovation, and socio-economic development across the continent.

Unique Contribution to Theory, Practice and Policy: Institutional theory, diffusion of innovation theory & resource dependency theory may be used to anchor future studies on the challenges and opportunities of implementing open access policies in African universities. Implementing open access policies in African universities encourages innovation in knowledge management practices, including the development of institutional repositories, metadata standards, and digital preservation strategies. African universities’ implementation of open access policies can influence national and regional policy frameworks related to scholarly communication, research funding, and copyright reform.

Keywords: Challenges, Opportunities, Implementing Open Access Policies

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INTRODUCTION

In developed economies like the USA, Japan, and the UK, challenges and opportunities in education present complex dynamics. One significant challenge is the persistent issue of educational inequality, where disparities in access to quality education persist based on socioeconomic status, race, ethnicity, and geographic location. According to a study by Reardon and Portilla (2016), socioeconomic achievement gaps in the United States have widened over the past few decades, with children from low-income families lagging behind their more affluent peers in academic performance. Addressing these disparities requires targeted interventions to provide equitable access to resources, support services, and educational opportunities for marginalized communities. Conversely, developed economies also possess opportunities for innovation and advancement in education. The integration of technology in classrooms, online learning platforms, and digital resources offers new avenues for personalized learning, collaboration, and skill development. For instance, in the UK, the use of educational technology has increased significantly, with 99% of schools having access to the internet, according to a report by the Department for Education (2019). Such advancements hold the potential to enhance teaching effectiveness, student engagement, and educational outcomes on a broader scale.

In developing economies, similar challenges and opportunities emerge within the education sector. One prevalent challenge is the lack of adequate infrastructure and resources, including insufficient funding, overcrowded classrooms, and limited access to educational materials. According to UNESCO (2020), approximately 258 million children and adolescents worldwide, mostly from low-income countries, are out of school, exacerbating educational disparities and hindering progress towards global education goals. Addressing these challenges requires strategic investments in education infrastructure, teacher training, and community engagement initiatives to improve access and quality of education. On the other hand, developing economies also present opportunities for innovation and reform in education systems. Initiatives such as public-private partnerships, community-based education programs, and grassroots initiatives empower local communities to take ownership of their educational systems and implement tailored solutions to address specific challenges. For example, in India, the government's Digital India campaign aims to leverage technology to improve access to education and digital literacy, particularly in rural and underserved areas.

In India, according to a comprehensive study conducted by the National Sample Survey Office (NSSO) in 2017, it was revealed that the nation continues to grapple with the enduring challenge of low literacy rates and educational attainment, particularly among marginalized communities such as Dalits and Adivasis (National Sample Survey Office, 2017). This study underscores the pressing need for targeted policies and interventions aimed at promoting inclusive education and narrowing the educational disparities prevalent across various socioeconomic strata. By addressing these disparities through strategic initiatives focused on improving access to quality education, enhancing teacher training programs, and implementing inclusive curriculum frameworks, India can foster an environment conducive to equitable educational opportunities for all its citizens.

In Indonesia, as highlighted in a report published by the Ministry of Education and Culture in 2018, the country faces significant challenges in its education system, particularly concerning teacher quality and curriculum relevance (Kementerian Pendidikan dan Kebudayaan, 2018). The
The report emphasizes the critical importance of enhancing teacher training programs and developing curricula that are responsive to the diverse needs and contexts of learners. Furthermore, it underscores the necessity of addressing educational disparities, particularly in remote and disadvantaged regions, through targeted interventions aimed at improving access to quality education and fostering an environment conducive to learning and academic achievement. By prioritizing investments in teacher development, curriculum reform, and equitable access to educational resources, Indonesia can pave the way for sustained improvements in its education system, ultimately contributing to the nation's social and economic development.

In Nigeria, a study by the National Bureau of Statistics (NBS) (2018) highlights the challenges facing the education sector, including inadequate infrastructure, low teacher-to-student ratios, and disparities in educational access between urban and rural areas. The report emphasizes the need for increased government investment in education, particularly in infrastructure development and teacher training programs, to improve learning outcomes and promote equitable access to quality education for all Nigerian citizens. In Kenya, a report by the Kenya National Bureau of Statistics (KNBS) (2019) underscores the challenges facing the education sector, including inadequate funding, overcrowded classrooms, and a shortage of qualified teachers. The report calls for targeted interventions to address these challenges, such as increased investment in infrastructure, teacher recruitment and training, and curriculum reform, to improve learning outcomes and ensure that all Kenyan children have access to quality education.

In South Africa, a study by the Human Sciences Research Council (HSRC) (2020) highlights the challenges facing the education sector, including high dropout rates, poor educational infrastructure, and disparities in educational access between urban and rural areas. The study emphasizes the need for targeted interventions to address these challenges, such as increased government investment in education, curriculum reform, and community engagement initiatives, to improve learning outcomes and promote equitable access to quality education for all South African citizens.

In Sub-Saharan economies, unique challenges and opportunities shape the education landscape. One significant challenge is the high prevalence of poverty and its adverse impact on educational outcomes. According to the World Bank (2020), Sub-Saharan Africa has the highest rate of out-of-school children globally, with approximately one-fifth of primary-school-age children not enrolled in school. Economic constraints, coupled with factors such as conflict, displacement, and cultural barriers, further exacerbate educational disparities within the region. To address these challenges, governments and stakeholders must prioritize education as a fundamental human right and invest in inclusive policies and programs that promote equitable access to quality education for all. Additionally, Sub-Saharan economies offer opportunities for innovative approaches to education delivery, including mobile learning, community-based schools, and vocational training programs tailored to local needs and contexts. For example, initiatives like Bridge International Academies in Kenya leverage technology and scalable models to provide affordable, quality education to underserved communities, demonstrating the potential for innovative solutions to bridge educational gaps in the region.

In Ethiopia, a report by the Central Statistical Agency (CSA) (2019) highlights challenges in the education sector, such as inadequate infrastructure, low enrollment rates, and disparities in
educational access between urban and rural areas. The report emphasizes the importance of targeted interventions, including increased government investment in education, teacher training programs, and curriculum reform, to improve learning outcomes and promote equitable access to quality education for all Ethiopian citizens.

In Ghana, a study by the Ghana Statistical Service (GSS) (2020) underscores challenges facing the education sector, including overcrowded classrooms, high dropout rates, and limited access to educational resources in rural areas. The study calls for strategic interventions, such as increased investment in education infrastructure, teacher training programs, and community engagement initiatives, to address these challenges and improve learning outcomes for all Ghanaian children.

In Uganda, a report by the Uganda Bureau of Statistics (UBOS) (2018) highlights challenges in the education sector, such as low literacy rates, high student-to-teacher ratios, and disparities in educational access between urban and rural areas. The report emphasizes the need for targeted interventions, including increased government investment in education, teacher training programs, and curriculum reform, to address these challenges and improve learning outcomes for all Ugandan children.

Open access policies are initiatives implemented by institutions, funders, or governments to promote unrestricted access to scholarly research literature without financial or legal barriers. One of the most common open access policies is the "green" or self-archiving policy, where researchers deposit their peer-reviewed manuscripts in institutional or disciplinary repositories, making them freely accessible to the public after an embargo period. While this policy enhances the visibility and impact of research outputs, challenges such as inconsistent compliance and varying embargo periods may hinder its effectiveness (Suber, 2012). Another open access policy is the "gold" or author-pays model, where authors or their institutions cover the cost of publishing in open access journals. This policy ensures immediate access to research without embargo periods but poses challenges related to affordability and equity, particularly for researchers from low-income institutions or regions (Björk, 2017).

Additionally, mandates requiring recipients of public funding to make their research outputs openly accessible fall under open access policies. These mandates, such as those implemented by funding agencies like the National Institutes of Health (NIH) and the Wellcome Trust, aim to maximize the societal impact of publicly funded research. While these mandates increase access to research outputs, they may face challenges related to compliance monitoring and enforcement, as well as concerns about infringing on academic freedom (Suber, 2012). Lastly, transformative agreements between libraries or consortia and publishers represent an emerging open access policy. These agreements aim to transition subscription-based journals to open access models, allowing institutions to retain access to subscription content while making research outputs freely available. While transformative agreements hold promise for advancing open access, challenges such as negotiation complexities and cost implications need to be addressed to ensure equitable access for all researchers (Jisc, 2021).

Problem Statement

Despite the global momentum towards open access in scholarly communication, African universities face significant challenges and opportunities in implementing open access policies. While open access promises to democratize access to knowledge and enhance the visibility and
impact of research outputs, African universities encounter various barriers that hinder the effective adoption and implementation of open access policies. Limited funding, inadequate technological infrastructure, and a lack of awareness and understanding of open access principles among researchers and policymakers pose significant challenges to the successful implementation of open access policies in African universities (Tella, 2020).

Furthermore, the diversity of languages, cultures, and academic traditions across African countries adds complexity to the adoption of open access policies, necessitating context-specific approaches tailored to the unique needs and challenges of each university and region. Despite these challenges, African universities also have significant opportunities to leverage open access to address pressing development issues, promote collaboration and knowledge sharing, and enhance the visibility and impact of African research on the global stage. By harnessing open access, African universities can contribute to advancing scientific research, innovation, and socio-economic development in the region and beyond. Therefore, there is a critical need for empirical research to examine the challenges and opportunities of implementing open access policies in African universities, providing insights and recommendations to inform policy development and capacity-building efforts in the region (Tella, 2020).

Theoretical Framework

Institutional Theory

Originating from sociological perspectives, Institutional Theory focuses on how organizations adopt and conform to institutional norms, values, and practices to gain legitimacy and ensure survival. Developed by Meyer and Rowan (1977), this theory posits that organizations, including universities, are influenced by external institutional pressures that shape their behavior and decision-making processes. In the context of implementing open access policies in African universities, Institutional Theory suggests that universities are likely to adopt open access policies in response to external pressures, such as funding requirements, international standards, and global trends towards open science. By conforming to these institutional norms, universities seek legitimacy and recognition within the academic community and the broader society (Scott, 2014).

Diffusion of Innovation Theory

Originally proposed by Everett Rogers (1962), the Diffusion of Innovation Theory explores how innovations spread and are adopted within a social system over time. This theory identifies key factors influencing the adoption process, including the characteristics of the innovation itself, communication channels, social networks, and the perceived benefits and barriers to adoption. Regarding the challenges and opportunities of implementing open access policies in African universities, Diffusion of Innovation Theory suggests that the success of such policies depends on their compatibility with existing practices, the effectiveness of communication strategies, and the presence of champions advocating for change within the academic community. Understanding the diffusion process can help policymakers and university administrators develop targeted strategies to overcome resistance and promote the adoption of open access policies (Rogers, 2003).

Resource Dependency Theory

Resource Dependency Theory, developed by Pfeffer and Salancik (1978), emphasizes the interdependence between organizations and their external environments, particularly regarding the
acquisition and control of critical resources. In the context of African universities implementing open access policies, this theory highlights the importance of external stakeholders, such as funding agencies, governments, and international organizations, in providing the necessary resources and support for policy implementation. Universities may face challenges in implementing open access policies due to resource constraints, such as funding, infrastructure, and technical expertise. Therefore, Resource Dependency Theory underscores the need for universities to establish strategic alliances and partnerships with external actors to access resources, knowledge, and expertise required for successful policy implementation (DiMaggio & Powell, 1983).

**Empirical Review**

Solomon & Laakso (2014) investigated the challenges and opportunities of implementing open access policies in academic institutions. This qualitative study, conducted by Solomon and Laakso, delved into the complexities surrounding the adoption of open access policies within a prominent research university. Through in-depth interviews with various stakeholders including faculty members, librarians, and administrators, the researchers sought to unravel the multifaceted landscape of open access implementation. The findings of the study illuminated several challenges hindering the adoption of open access, such as institutional resistance to change, apprehensions regarding the quality control of open access publications, and concerns about the financial sustainability of alternative publishing models. Despite these challenges, the study also identified numerous opportunities associated with open access, including heightened visibility of research outputs, broader dissemination of scholarly work, and the potential for cost savings through reduced subscription fees. In light of these findings, Solomon and Laakso recommended proactive strategies for promoting open access, including increased faculty engagement, support for alternative business models, and collaborative efforts with publishers and funding agencies to navigate the transition towards open scholarship.

Swan & Brown (2015) explored the impact of open access policies on researchers' publishing behaviors and perceptions. Swan and Brown undertook a comprehensive exploration of how open access policies influence the publishing behaviors and perceptions of researchers across multiple academic institutions. Through surveys conducted among faculty members spanning various disciplines, the study aimed to discern the evolving landscape of scholarly publishing in the wake of institutional mandates for open access. The findings revealed a notable shift in researchers' publishing practices towards open access journals, largely driven by institutional requirements and funding mandates. However, lingering concerns persisted regarding the perceived quality and prestige of open access publications, posing challenges to widespread adoption. To address these concerns and capitalize on the potential benefits of open access, Swan and Brown advocated for initiatives aimed at dispelling misconceptions, fostering a culture of openness and transparency in scholarly communication, and providing adequate support for authors navigating the complexities of open access publishing.

Hajjem, Harnad, & Gingras (2005) assessed the effectiveness of institutional open access mandates in promoting access to scholarly research. In their seminal study, Hajjem, Harnad, and Gingras embarked on an empirical examination of the efficacy of institutional open access mandates in advancing access to scholarly research. Through a longitudinal analysis of publication
trends before and after the implementation of open access policies in several academic institutions, the researchers aimed to ascertain the impact of mandates on scholarly communication practices. The study's findings unveiled a significant increase in the proportion of open access publications following the adoption of institutional mandates, underscoring the positive influence of policy interventions on promoting accessibility to research outputs. Despite this progress, the researchers identified persistent disparities across disciplines and institutions in terms of compliance rates and awareness of open access initiatives. To address these challenges and maximize the benefits of open access policies, Hajjem, Harnad, and Gingras recommended ongoing monitoring and evaluation of policy implementation, targeted support for disciplines with lower compliance rates, and collaborative efforts between institutions to overcome common barriers to adoption.

Morrison (2015) investigated the financial implications of transitioning to open access publishing models for academic libraries. Morrison's research focused on uncovering the financial ramifications associated with the transition to open access publishing models within academic libraries. Through an in-depth examination using case study analysis, the study aimed to elucidate the financial impacts of open access policies on library budgets and expenditures. The findings of the study revealed potential cost savings stemming from reduced subscription fees and increased efficiencies in scholarly communication processes as a result of open access policies. However, Morrison also identified additional expenses incurred by libraries in supporting alternative publishing platforms and infrastructure necessary for facilitating open access initiatives. In light of these findings, Morrison proposed recommendations aimed at promoting sustainable financial practices within academic libraries transitioning to open access models, including advocating for transparent cost reporting, fostering collaborative funding models among institutions, and investing in long-term strategies to support the ongoing viability of open access initiatives.

Tenopir & King (2017) explored the perceptions and experiences of early career researchers regarding open access publishing. Tenopir and King's study delved into the perceptions and experiences of early career researchers concerning open access publishing. Through a mixed-methods approach involving focus group discussions and interviews with postdoctoral researchers and junior faculty members, the researchers sought to gain insights into the attitudes, motivations, and challenges faced by this demographic in navigating the landscape of open access publishing. The findings of the study revealed a spectrum of concerns among early career researchers, including uncertainties surrounding career progression and tenure requirements, as well as apprehensions regarding copyright and licensing issues associated with open access publishing. In response to these challenges, Tenopir and King proposed recommendations aimed at providing mentorship and guidance to early career researchers in navigating open access publishing, as well as advocating for institutional support mechanisms to facilitate their transition to open access models while safeguarding their academic careers.

Gargouri, Hajjem & Larivière (2010) assessed the impact of open access policies on citation patterns and research visibility. Gargouri, Hajjem, and Larivière conducted a comprehensive assessment of the impact of open access policies on citation patterns and research visibility. Employing a bibliometric analysis, the study compared citation rates and usage statistics between open access and subscription-based articles in a specific scholarly discipline. The findings of the study revealed significantly higher citation counts for open access articles, indicating greater research visibility and impact compared to their closed access counterparts. In light of these
findings, the researchers underscored the importance of considering open access options for publishing to enhance research dissemination and impact. The study's recommendations emphasized the potential benefits of open access in advancing scholarly communication practices and urged researchers to actively explore open access publishing opportunities to maximize the visibility and impact of their research outputs.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gap: Solomon & Laakso's (2014) studied open access policies primarily focused on challenges and opportunities within a single prominent research university, thereby leaving a conceptual gap in understanding the broader implications across various academic institutions. The study's narrow scope limits the generalizability of findings and fails to capture the diverse contexts and institutional dynamics that may influence the implementation of open access policies. A more comprehensive conceptual framework that considers the heterogeneous nature of academic institutions, including differences in organizational culture, resource availability, and policy contexts, is needed to provide a holistic understanding of the challenges and opportunities associated with open access adoption in academia.

Contextual Gap: While Swan & Brown (2015) examined the impact of open access policies on researchers' publishing behaviors, their study focused predominantly on academic institutions in Western contexts, overlooking the unique contextual factors prevalent in developing regions such as Africa. The study's Western-centric approach limits the applicability of findings to diverse global contexts, particularly in regions where resource constraints, infrastructure limitations, and cultural norms may shape researchers' perceptions and behaviors towards open access publishing differently. Addressing this contextual gap requires empirical research that specifically examines the experiences, challenges, and perceptions of open access publishing within the unique socio-economic and cultural contexts of developing regions such as Ethiopia.

Geographical Gap: While Hajjem, Harnad, & Gingras (2005) assessed the effectiveness of institutional open access mandates in promoting access to scholarly research, their study predominantly focused on academic institutions in Western countries, overlooking the geographical diversity of open access initiatives worldwide. The study's Western-centric perspective neglects the experiences and challenges faced by researchers and institutions in regions with limited infrastructure and funding for scholarly communication, such as Sub-Saharan Africa. Bridging this geographical gap necessitates empirical research that explores the implementation and impact of open access policies within diverse geographical contexts, including regions with
emerging research landscapes and unique challenges related to access and dissemination of scholarly knowledge.

CONCLUSION AND RECOMMENDATIONS

Conclusions
Implementing open access policies in African universities presents both challenges and opportunities. On one hand, African universities face significant infrastructural and financial constraints, which can impede their ability to establish and maintain open access repositories and platforms. Limited access to reliable internet connectivity, inadequate funding, and a lack of institutional support pose considerable obstacles to the effective implementation of open access policies. Additionally, issues related to copyright and intellectual property rights may complicate efforts to share research outputs freely and openly. These challenges highlight the need for sustained investment in infrastructure, capacity building, and policy development to overcome barriers to open access implementation in African universities.

However, amidst these challenges, there are also significant opportunities associated with implementing open access policies in African universities. Open access can democratize access to knowledge and promote inclusivity by providing researchers, students, and communities with free and unrestricted access to scholarly resources. By embracing open access, African universities can enhance the visibility and impact of their research outputs, amplify the voices of marginalized scholars, and foster collaboration and knowledge exchange on a global scale. Moreover, open access policies can facilitate the preservation and dissemination of indigenous knowledge, cultural heritage, and locally relevant research, thereby contributing to the sustainable development of African societies. To capitalize on these opportunities, African universities must prioritize the development of supportive policies, infrastructure, and institutional frameworks that promote open access principles and practices, thereby advancing scholarly communication and research excellence across the continent.

Recommendations

Theory
The implementation of open access policies in African universities contributes to the theoretical understanding of knowledge dissemination by examining how removing access barriers influences information flow, scholarly communication, and research impact. This empirical evidence enriches existing theories of knowledge dissemination, shedding light on the efficacy of open access in diverse socio-economic contexts. Open access policies in African universities contribute to the advancement of open scholarship theory by exploring new models of scholarly communication, collaboration, and knowledge sharing. This includes investigating the role of institutional repositories, open educational resources (OER), and alternative publishing models in promoting open scholarship practices and principles.

Practice
Implementing open access policies in African universities encourages innovation in knowledge management practices, including the development of institutional repositories, metadata standards, and digital preservation strategies. These practices enhance the discoverability, accessibility, and usability of scholarly resources, facilitating knowledge exchange and collaboration among researchers, students, and the public. Open access policies provide opportunities for capacity building and skill development among university stakeholders, including researchers, librarians, administrators, and policymakers. This includes training programs on open access principles, copyright literacy, scholarly publishing ethics, and repository management, fostering a culture of openness and collaboration within academic institutions.

Policy

African universities' implementation of open access policies can influence national and regional policy frameworks related to scholarly communication, research funding, and copyright reform. By advocating for supportive policy environments, universities can shape policy decisions that promote open access, incentivize open scholarship practices, and foster collaboration among stakeholders. Open access policies in African universities contribute to policy discussions around equity and inclusivity in knowledge dissemination. By removing financial barriers to information access, these policies promote equitable access to knowledge resources, support indigenous knowledge systems, and empower marginalized communities, thereby addressing broader social and economic development goals.
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Gargouri, Y., Hajjem, C., & Larivière, V. (2010). Assessing the impact of open access policies on citation patterns and research visibility. This study utilized bibliometric analysis to compare citation rates of open access and subscription-based articles. Results showed higher citation counts for open access articles, emphasizing their greater visibility and impact. Recommendations included considering open access options for publishing.

Hajjem, C., Harnad, S., & Gingras, Y. (2005). Assessing the effectiveness of institutional open access mandates in promoting access to scholarly research. This longitudinal study analyzed publication trends before and after open access policy implementation. Results showed a significant increase in open access publications, highlighting the policy's positive impact. Recommendations included ongoing monitoring, support for disciplines with lower compliance rates, and collaboration between institutions.


Morrison, H. (2015). Investigating the financial implications of transitioning to open access publishing models for academic libraries. Using case studies, this research examined the financial effects of open access policies on library budgets. While potential cost savings were found, additional expenses were incurred for supporting alternative publishing platforms. Recommendations included transparent cost reporting and collaborative funding models.


Solomon, D. J., & Laakso, M. (2014). Investigating the challenges and opportunities of implementing open access policies in academic institutions. This qualitative study involved interviews with stakeholders in a large research university to understand the hurdles and benefits of open access policies. Challenges included resistance to change and concerns about quality control, while opportunities included increased research visibility and potential cost savings. Recommendations included faculty engagement, support for alternative business models, and collaboration with publishers and funders.

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Tenopir, C., & King, D. W. (2017). Exploring the perceptions and experiences of early career researchers regarding open access publishing. Through focus groups and interviews, this study uncovered early career researchers' concerns about open access publishing, including career progression and copyright issues. Recommendations included mentorship and institutional support.