Afr. J. Lib. Arch.& Inf. Sc. Vol. 33, No.2 (October 2023) 115-129
https://dx.doi.org/10.4314/ajlais.v33i2.1

The Open Access Movement and its March in Africa

Idowu Adegbilero-Iwari,
Afe Babalola University
Ado-Ekiti, Nigeria
adegbileroii@abuad.edu.ng

'Niran Adetoro
Department of Library and Information Science,
Tai Solarin University of Education,
Ijagun, Ijebu-Ode, Nigeria
adetoroaa@tasued.edu.ng

and

Ibiwumi Khadijat Salawu
Nigerian Stored Products Research Institute (NSPRI),
Ilorin, Nigeria.
ibiwumi.salawu@yahoo.com

Abstract

The past two decades have witnessed growing call and actions for free and immediate access to published scholarship online without technological, monetary or legal barriers from around the world. The phenomenon described as open access (OA) has been strengthened by the possibilities of digital network technologies represented in the ubiquitous Internet. While the goal of the OA movement remains good, it appears the epistemic disbalance in global knowledge creation and access has not abated. However, the promise of OA, the motivation on which it stands, its consequence and current state are reviewed in this paper with particular focus on the contribution of Africa to the global OA movement. It has been reported that the emergence of OA on the continent is albeit slow but with a mixed fortune of both progress and challenges. Notwithstanding, open access is seen as a development imperative for Africa that offers tremendous opportunities to the continent to actively contribute to global knowledge. It was reported that a number of universities and research institutions in Africa have adopted open access policies that require their researchers to publish their work in open access journals or repositories. The paper presented a number of open access initiatives and platforms that are actively being deployed to achieve OA mandate in the continent and concluded with recommendations.

Keywords: Open Access, Predatory Publishing, Article Process Charges, Predatory Journal, Gold OA, Green OA, Africa

Introduction

The open access (OA) movement emerged as a result of a couple of internecine events in the research community. These events are the "serials crisis"- widespread cancellations of libraries' subscriptions to journals, occasioned by the rising cost of journal subscription and the downward steep in library budgets (Beall, 2013a; Eve and Priego, 2017) ditto the evolution of digital capabilities of the ICT as evidenced in increasing network connectivity and high production of information in diverse formats on the internet (BOAI, no date; Beall, 2013a). The movement that started in the 1990s got consolidated through declarative statements and mandates of the early 2000s such as: "Budapest Open Access Initiative" (2002) (BOAI, no date), the "Bethesda Statement on Open Access Publishing" (2003) (Bethesda Statement BS, 2003), and the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" (2003) (Jurchen, 2020). These documents while defining OA set the

framework on which the movement continue to thrive and evolve.

Twenty years on, the OA movement has shaken the academia and scholarly communication landscape with growing gravitation towards achieving the mandates of making Open the default in access to and reuse of academic research outputs on the Internet. Whereas the proposition for OA was seen as compliant with the goal of science itself, which is to serve as public good(BOAI, no date), however, the economics of it has remained a debated issue since the onset of the OA movement. Changing from the traditional pay-to-read practice mostly through library subscriptions to toll-free access through the Internet spawned the question of who covers the publication costs (Beall, 2013a).

Finding answer to this onerous question paved the way for the now abused pay-to-publish model and its corresponding shift of cost burdens from readers to authors. Interestingly, apart from huge financial turnover benefitted by prestigious traditional publishers from pay-to-publish(Rizor and Holley, 2014), several other illegitimate business entities have emerged with false claims of asking authors to pay for scholarly services such as peer-review they did not render(Beall, 2013b). These sets of new publishers have been described as predatory publishers (Beall, 2013a, 2015).

Predatory publishing has become so pervasive that it is conflated with Open Access by some actors in the sector (Beall, 2012; Krawczyk and Kulczycki, 2021).This view portend a potential damage to OA itself as the predatory label is used in certain contexts (Eve and Priego, 2017). However, there is no denying the notion that predatory publishing is "an unintended consequence of the open access movement" (*Is Open Access the same as Predatory Publishing?*, no date). These, in the view of some scholars, have consequently rendered both open access and the "validation of scientific knowledge" the two critical challenges in scholarly publishing confronting science in this era of information and communication technology (ICT)(Krawczyk and Kulczycki, 2021).

Notwithstanding, the response to the OA movement is not even from around the world, itself a shadow of the already existing global techno-economic inequality (Ola, 2018). While the movement has gained the most prominence from the resource-endowed global north especially Western Europe and North America from where it emanated, the global South seems to be playing a catchup albeit at disproportionate pace. Within the global South, Latin America nations are taking the leadership in propagation of the OA ideals with large scale projects such as the SciELO (Velterop, 2015). Africa and Asia, traditionally seen as peripheral producers of scholarly knowledge, have been reported to be the largest participants in the predatory publishing industry seen as outcome of the OA movement (Beall, 2013a; Ajuwon and Ajuwon, 2018). Despite this, researchers and institutions from the African continent are making strides to change the narratives of OA and scholarly outputs despite the peculiar circumstances of the region.

It is on these accounts that this article reviews literature to assess the origin and current state of the OA movement, the internecine emergence of the pseudo-publishers plus the harm they do to scholarly publishing and measures taken in the scholarly community to mitigate the damage of predatory practices, ensure quality and preserve credible scholarly communication practices and the sanctity of scientific records even in this era of open access and ubiquitous internet. The article reviewed the state of open access in Africa and updated existing scientific record on the subject.

The Open Access Movement: What is Open Access?

According to BOAI (2012), OA to peer-reviewed literature means:

> its free availability on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers, other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should give authors control over the integrity of their work and the right to be properly acknowledged and cited.

A concise definition was captioned in Suber's seminal book on OA in which he described OA as "digital, online, free of charge, and free of most copyright and licensing restrictions" (Suber, 2012, p. 4).

While pressing the argument for OA, BOAI further highlighted the following fundamental truths about OA:

- OA benefits research and researchers, and the lack of OA impedes them.
- OA for publicly-funded research benefits taxpayers and increases the return on their investment in research. It has economic benefits as well as academic or scholarly benefits.
- OA amplifies the social value of research, and OA policies amplify the social value of funding agencies and research institutions.
- The costs of OA can be recovered without adding more money to the current system of scholarly communication.
- OA is consistent with copyright law everywhere in the world, and gives both authors and readers more rights than they have under conventional publishing agreements.
- OA is consistent with the highest standards of quality.

Apart from this, several organisations and efforts are emerging to further drive home the point for open access. On the African continent, a group of researchers and stakeholders in the scholarly communication have come together to set a ten-point declarative agenda for Open Access on the continent and are working on infrastructures to support Open Access(AfricArXiv, no date). Also, several other infrastructures are emerging to help achieve the open access mandates. The open journal system (OJS), the DOAJ, DataCite are few of the many.

Arguments for OA

OA proponents like Peter Suber argued for the need to make publicly funded research available to the generality of the scientific community and the larger society (Suber, 2012, p. 14). This is in part due to how the ubiquitous Internet revolutionised communication and publishing leading to reduction in costs per article and redundancy in print articles (Tennant *et al.*, 2016). The other related basis for OA is the impracticable possibility of individual libraries or researchers or even a group subscribing to all published article in the face of fast-paced publication technologies and exponentially growing numbers of researchers and the concomitant rise in research outputs coupled with dwindling library budgets, the scenario popularly known as the Serials crisis (Beall, 2013a).

Furthermore, the damning realisation that continued lockup of research articles will not only impede scientific advancement, harm the promise of research but also have consequences for researchers and funders due to nonuse by the majority of the stakeholders who cannot afford access under the subscription-based model. Furthermore, Tennant et al presented a moral argument for open access to research in line with the United Nations Declaration of Human Rights that "everyone has the right… to share in scientific advancement and its benefits" (Tennant *et al.*, 2016, p. 4).

Given the foregoing, scholars, researchers, librarians and other stakeholders in the academia and scholarly communication began to come together at the turn of the millennium to host events and declare mandates in support of OA. Some of the declarative statements and mandates of the early 2000s include the "Budapest Open Access Initiative" (2002) (BOAI, no date), the "Bethesda Statement on Open Access Publishing" (2003) (Bethesda Statement BS, 2003), and the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" (2003). Of these, the BOAI has become the most used and instructive with tremendous relation to the theme of this paper.

The BOAI declaration was not a mere speculation of ideals but an affirmative statement with actionable guides to achieving the OA mandate. The initiative prescribed author self-archiving and open-access journals as the ways to achieve and sustain open access to peer reviewed literature. These two would later be known as Green and Gold routes to OA respectively (Suber, 2012; Hooley, 2013; Tennant *et al.*, 2016).

The Green OA route stipulates that authors self-archive their research in institutional repositories and

similar infrastructures such as preprint servers while the Gold OA route is the journal's/publisher's approach to sustaining OA to published literature. This way authors are mandated to pay an article processing fee (APC) aimed at recovering cost that were covered by subscriptions in the traditional practice. Journals too use the Hybrid OA approach where publishers make some articles OA and some others subscription-access (Suber, 2012; Else, 2020; Jurchen, 2020). There are some other routes not so commonly used such as Black OA, Diamond/ Platinum OA and Bronze OA (Jurchen, 2020).

The APC-based model (Gold) seems to have proven to be the most economically acceptable option for subscription-based journals but with corresponding burden and barrier shift where access barrier has become substituted with publishing barrier. This is due to the exorbitant cost of publishing put at $1,500 to $6,000 (Pooley, 2019; Jurchen, 2020) and most recently a $11,390 proposed to take effect from 2021 for papers published in *Nature* and 32 other journals owned by the European publishing giant Springer-Nature (Else, 2020). These charges are basically out of reach for researchers in developing countries of the Global South. These are people already described as sitting on the periphery of knowledge (Omobowale *et al.*, 2014) and have been the most predated upon by a group of pseudo-journals currently benefiting from the APC model to make profit at the expense of the authors (Ajuwon and Ajuwon, 2018).

Green Open Access and the Repositories Technologies

No sooner the realization of the capabilities of the emergent internet technologies like institutional repositories that allow for self-archiving and publishing (Green OA route) than scholars began to make case for change in the ownership, management and distribution of research outputs(Crow, 2002). To this end, the institutional repository was recognised as a critical scholarly infrastructure for the management of research outputs of researchers in institutions and across subject domains (Lynch, 2003).It was suggested that with the institutional repositories all the five components of the scholarly communication lifecycle, viz, registration, certification, awareness, archiving and rewarding hitherto handled by publishers, libraries and other stakeholders, can now be singly managed with the repositories (MacColl, Jones and Andrew, 2006).

It is not thus a sheer coincidence to see the development of this type of infrastructure rise along the timeline of open access movement with the first institutional repositories, Eprints and Dspace, launched in 2002 and 2003 respectively which themselves were response to the rising popularity of ArXiv, a subject repository for physicists (MacColl, Jones and Andrew, 2006).These were also the periods that the aforementioned declarative and assertive statements to shape the direction of the OA movement were made.

There has been sharp increase in the adoption and deployment of open access institutional repositories by many academic and research institutions across the world. From a paltry scores in the early 2000s, the number of open access repositories across the world today stands at staggering 10,000s with the continent of Africamaking progress albeit slow(Pinfield *et al.*, 2014; OpenDOAR, 2023). African share of global repositories (265) is shown in Figure 1 below.

Additionally, several subject and regional repositories have emerged as storehouses of research. A major success story is the ArXiv, the foremost subject repository that allows researchers in the fields of Physics, Astronomy, Mathematics, Computer science among others to immediately share their research- preprints, and receive feedbacks ahead of formal publication in a journal. Started as an email list serve in 1989, ArXiv, with over two million papers, has grown to become one of the most important sources of scholarly information for researchers in the cognate fields (Garisto, 2022). Preprints which are "the author's original manuscript before submission to a journal" have been suggested to play a larger role in the scholarly communication landscape (Luther, 2017, p. 1). Examples of other preprints servers that have been inspired by the success of ArXiv are: *Wellcome Open Research,* bioRxiv, *F1000 Research, The Winnower,*Preprints.org, PsyArXiv, AgriXiv, SocArXiv and engrXiv, Social Science Research Network (SSRN), AfricArXiv(Luther, 2017; Ahinon *et al.*, 2020).

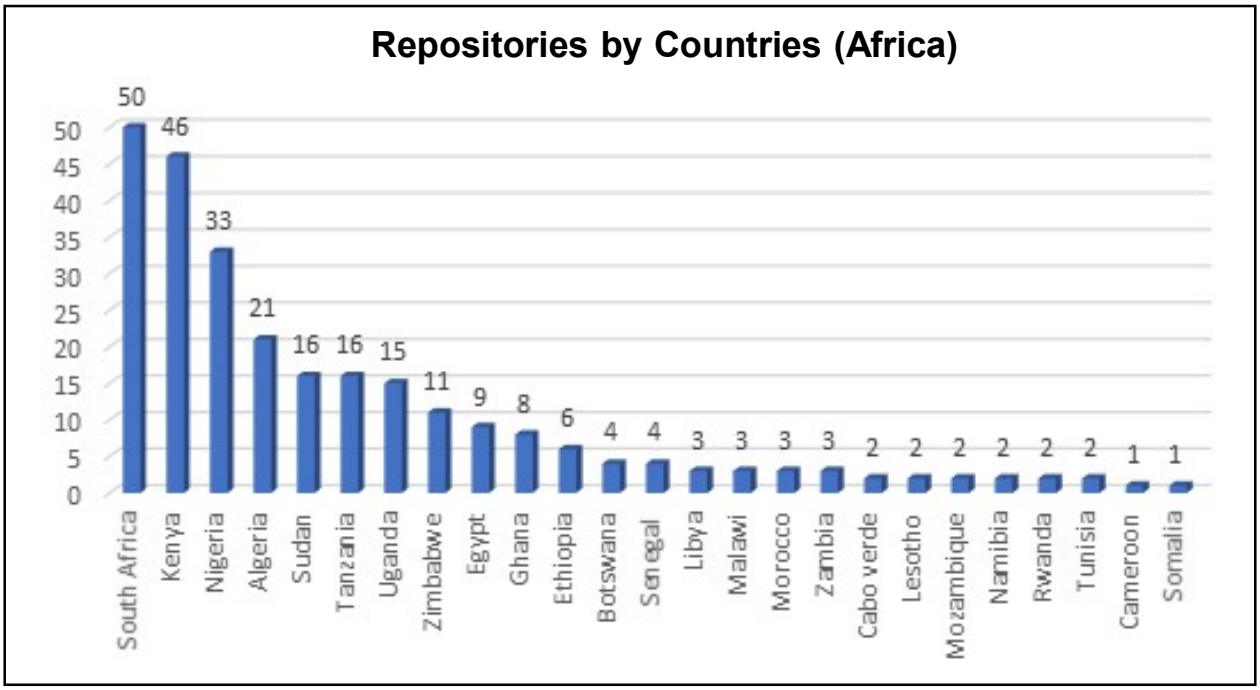

Figure 1: Repositories in Africa by Countries

Source: OpenDOAR (2023)

The Gold OA and Article Processing Charges (APC)

Whereas the repositories and other authors' self-archiving platforms have been coded the Green OA, the publishers' own contribution to OA is the gold route. Through this approach, publishers, existing and new ones, have the mandate to ensure open access to all their published scholarly literature. Given the economics of the publishing business, achieving this implies that publishers devise means of recovering the costs of their operations as well as maintain their profit bottom line. Whereas many approaches have been proposed and practised, the charging of authors for the publication of their accepted peer-reviewed manuscripts has proved to be the most frequently used approach so far. (Jurchen, 2020). This amount paid by authors is widely known as the Article Processing Charge (APC).

With the APC, many traditional publishers who hitherto had survived on subscriptions and toll-access are either transitioning to OA publishing with their existing journals or starting off new journals that purely operates this model. In other cases, some publishers purely set out on the Gold OA route. The Public Library of Science (PLOS) and BioMedCentral (BMC) now an imprint of Sage were the leading pure OA publishers that started out entirely as APC-funded publishers (Jurchen, 2020). Reported average range of APC is put between $1,500 and $6,000 (Pooley, 2019; Jurchen, 2020) for big trustworthy journals whereas the charge may be as low as $100 for predatory and deceptive journals(Xia, 2015). It is thus not farfetched to know why some thinkers conflate OA with predatory publishing.

Predatory Publishing

Not only have technologies and the OA movement enhanced the accessibility of research findings, spinoff businesses have also regrettably emerged with it to the detriment of good science. The Gold OA route whereby authors pay publication charges to make their works OA has been particularly taken advantage of with far-reaching consequences on the entire spectrum of activities surrounding scientific inquiries and communication of scholarship. For instance, published bad research procedure or

methodology lacking in evidence is either unsuitable for further academic advancement or become precedent for future studies with attendant consequences. Publishing outfits with this behaviour have been described by different names prominent among which is the protested "predatory" publisher/ journal coined by American librarian, Jeffrey Beall (Beall, 2015). Protested because some see such term as "accusatory" against publications from the Global South (Eve and Priego, 2017).

There are two or more shades of predatory publishing. There is the escapist group that believed the instances where authors are not aware of the dubious practices of these publishers, ignorantly submit papers to them and are thus considered to be predated upon(Xia *et al.*, 2015). There is also a school of thought that believes that some authors deliberately publish with these journals because of less rigour and cheaper publication fees. In this case, the authors are not preys and the publishers are regarded as "pseudo-journals" (Laine and Winker, 2017). Indicating the harm they cause for researchers in resource poor countries, Clark and Smith (2015) described predatory journals as "publications taking large fees without providing robust editorial or publishing services".

Irrespective of the name they are called, predatory journals or publishers exhibit some peculiar attributes which have been well reported by researchers and international scholarly societies and organisations (Beall, 2015; Rich, 2016; Laine and Winker, 2017; Ajuwon and Ajuwon, 2018; AMWA, EMWA and ISMPP, 2019; Murphy, 2019). These attributes clearly distinguish them from traditional scholarly publishers. According to studies, predatory journals scout for manuscripts through vigorous marketing and spam emails, promising quick review, rapid publication as open access for an amount lower than those of credible APC-funded journals(Clark and Smith, 2015; Laine and Winker, 2017). Their motive is financial gain, and they are corrupting the communication of science. Most appallingly, some goes to the extreme of collecting article publication fees without publishing the article on their website as promised (Laine and Winker, 2017).

Ajuwon and Ajuwon (2018) presented a tabularised summary of commonly cited features of predatory journals in the literature:

"Characteristics of Predatory Publishers and Journals" by Ajuwon and Ajuwon (2018)

1	The journal has a title with disjointed scope, e.g. Journal of Education, Management and Philosophy
2	The website of the journal has spelling and grammatical errors
3	The website of the journal has distorted/fuzzy images
4	The journal does not provide information on manuscript handling processes
5	Journals send unsolicited emails requesting for submission of manuscripts
6	Journals request for submission of manuscripts using email addresses instead of online submission process
7	Journals use non-professional or journal affiliated email addresses for correspondence
8	Journals do not provide information on retraction, digitization and copyright policies
9	The website of the journal does not provide sufficient information about members of editorial boards or include fake names as members
10	The website does not reveal the physical address of the publisher/journal or uses an incorrect address
11	The journal does not make full disclosure of fees to be paid for processing of articles
12	Journals make unrealistic promise of rapid time-frame of peer review and publication

Source: Ajuwon and Ajuwon (2018)

Impact of Predatory Journals Among African Scholars and Beyond

Predatory publishing has come to exert significant load of negative impacts on scholarly communication and scholars from around the world especially in regions like Africa where they have been reported to be prevalent. Broadly, these publications accord OA publishing in general unwarranted negative publicity (Shen and Björk, 2015) making some people to disparage the entire OA cause (Beall, 2012). This is one of the reasons some scholars like Jeffrey Beall are critical of the entire OA movement. Beall, contended that OA is a breeding ground for predatory publishing practices (Beall, 2013b). Predatory publishing is not only consequential for authors but to the entire scientific community and the scholarly communications sector in particular (Cukier *et al.*, 2020).

The damaging effect on authors' reputation can be quite enormous. According to (AMWA, EMWA and ISMPP, 2019) authors suffer reputation damage by unwittingly publishing in and/or listed in the editorial boards of predatory journals. They may become "trapped" due to inability to withdraw manuscripts or retract published papers after discovering that the journal is predatory. Usually, these journals do not have retraction policy and often deny authors from withdrawing or retracting papers.

Apart from this, there is the danger of block damage done to institutions, geographical regions and countries in particular(Ayeni and Adetoro, 2017). Literature have well reported the prevalence of predatory publishing practices among early careers and unmentored graduate students and researchers from Africa and developing countries (Truth, 2012; Omobowale *et al.*, 2014; Nwagwu and Ojemeni, 2015; Xia *et al.*, 2015; Rich, 2016; Ajuwon and Ajuwon, 2018). Particularly, researchers from three developing countries: India, Pakistan and Nigeria in the continents of Asia and Africa, have been reported to be the most contributors to predatory OA journals (Xia *et al.*, 2015; Ajuwon and Ajuwon, 2018). African Scholars' fields of study are diversifying, and as a result, they require ongoing access to high-caliber manuscripts in order to do their research. However, the existence of predatory journals has a significant negative impact because of the lack of scientific merit, the poor quality of the peer review process, and the lack of adequate editorial oversight.

While his study confirmed that African, especially Nigerian, authors patronised predatory journals, Adeyinka Tella highlighted a cause-effect analysis of the practice. Tella (2020) reported the causes to be "desperation at the thought of missing out on promotion, long waits for reviews from reputable journals, deficient information literacy, and inadequate knowledge of the journals in their specific subject area". These results in unpleasant implications for researchers in the region such as rising interest in low quality research and loss of confidence by scholars outside Africa "in the ability of Nigerian academics to conduct quality research" (Tella, 2020). Moreover, these researchers risk participating in ethical international scholarly duties such as not be invited to serve as reviewers or international panelists at prestigious conferences and meetings, nor being invited to serve as external examiners at universities overseas (Ayeni and Adetoro, 2017).

Mouton and Valentine (2017) noted the growth of predatory journals in South Africa since 2011 and the probable loss of millions of rands based on South African reward system to institutions whose authors publish articles in accredited journals. They feared that "predatory publishing poses a serious challenge to science in South Africa. If it continues to increase at the rate of growth seen in the past 5 years, predatory publishing may well become accepted practice in some disciplines and at some universities" which according to them will erode public's trust in scientific research.

Relatedly, Eve and Priego (2017) evaluated the harms to different groups within the scholarly communication sector. They reported that academic authors suffer reputational damage and loss of institutional reward. They added that academic hiring, promotion, and tenure committees suffer misjudgment and loss of labour time while the general public suffer poor understanding of science. The damage, according to them, extends to librarians who suffer loss of gained grounds in their support for the bid to make open access default to knowledge, cut soaring library budget, halt the serials crisis among others. Funders, learned societies and traditional academic publishers are other groups within the sector they argued are harmed by predatory practices.

Although, predatory journals have been generally known to have harmful effects, some scholars however share contrary opinion (Eve and Priego, 2017). Their argument stemmed from the flawed system of peer review to which some other scholars have agreed needed to be reviewed(Kassirer and Campion, 1994; Smith, 2006). These authors contended that it is possible for good academic artefacts to be lodged in a bad container for which they argued that predation could have been said to occur thus supporting article-level metric. This could be the case for many scholarly outputs from African published in the so-called predatory journals due to reasons already discussed above.

While their point is encouraging scholars to read published literature critically rather than use publication venue to judge predation or bad science, they however dissociated from the deceptive practices of predatory journals when they "claim to provide a service when such service is not provided" (Eve and Priego, 2017). They reiterated that the glamour or reputation of journals does not always correlate with non-predatory practices especially if predatory is viewed as the absence of peer review.

Efforts to Curtail Predatory Practices and Assure Quality of Scientific Records

To address the problem of predatory publishing, there have been a number of initiatives to raise awareness about the issue and to provide guidance to researchers and institutions on how to identify and avoid predatory publishers. These have been reported by relevant studies (Beall, 2015; Rich, 2016; Ayeni and Adetoro, 2017; Laine and Winker, 2017; Pooley, 2019; Cukier *et al.*, 2020; Jurchen, 2020).

However, Julie Murphy in her paper titled "Predatory Publishing and the Response from the Scholarly Community" highlighted a couple of the approaches taken by the scholarly community to solve the predatory publishing crisis. She grouped the approaches under three broad headings, viz, Blacklists, Whitelists and Educational efforts (Murphy, 2019).

The blacklists approach were efforts taken by concerned scholars to use a set of self-developed criteria to identify and name publishers and journals they presume to be engaging in unethical publishing practices. Examples are the famous but now discontinued Beall's list published and updated for about five years on http://scholarlyoa.com/by librarian Jeffrey Beall who was the first scholar to coin the term "predatory journals"(Beall, 2013a). Though discontinued in 2017,Beall's list was succeeded by a couple of platforms that continued from the last update of Beall. Two notable of such lists according to Murphy are: "Beall's List of Predatory Journals and Publishers" available at https://beallslist. weebly. com/ and "Stop Predatory Journals" available at https://predatoryjournals.com/(Murphy, 2019).The other blacklist reported by Murphy is Cabell's Scholarly Analytics (Cabell's Blacklist) initially called Directory of Publishing Opportunities.

Additionally, Whitelists emerged from the background that it was not just enough to name journals and publishers with unethical publishing practices but to guide authors with lists of those doing the right things. Some of the reported whitelists according to Murphy are the Cabell's Whitelist which "provides complete contact and publication information including method of access, submission, review and publication process information, peer review data, impact factor, Clarivate analytics, "Cabell's Classification Index" journal rankings derived from Scopus information, and Altmetric reports" (Murphy, 2019, p. 3).

The other Whitelists reported by Murphy are: Directory of Open Access Journals (DOAJ) which described as "the most respected OA-specific whitelist", and the Open Access Scholarly Publishers Association (OASPA), established in 2008 with stringent membership criteria to promote best practices in OA publishing. The DOAJ has also been seen as a screening hub for authors to confirm the authenticity of OA journals. This is as a result of the discrete guidelines a journal must meet to get accepted into the directory. This way, it is expected that all journals indexed in DOAJ are trustworthy (Kisely, 2019).

On the educational efforts, Murphy reported some of the community driven initiatives in the academia. They include: "Think.Check.Submit." Operational at http://thinkchecksubmit.org to guide authors with a checklist to consider before submitting their research to an OA journal. The potential of this initiative to help authors against predatory publishers has been reported by other scholars (Tennant *et al.*,

2016). Other educational efforts reported by Murphy are: Project Cupcake, TRANsparency in Scholarly Publishing for Open Scholarship Evolution (TRANSPOSE) and the Journal Publishing Practices and Standards (JPPS) (Murphy, 2019).The JPPS is a quality assurance mechanism for journals published in the Global South developed by African Journals Online_(AJOL) and International Network for the Availability of Scientific Publications (INASP).

Specifically for the Nigerian research environment with its peculiar "personal and structural challenges", Ajuwon and Ajuwon (2018) made some far-reaching recommendations on measures to adopt for curbing predatory practices. They range from improved funding for research including article processing charges, change of emphasis on quantity but quality of papers in the assessment of researchers and scholars for appointment and promotion, education of early career researchers about credible publishing venues, to support from the Nigerian National University Commission to local credible publishers towards online presence and improved peer review process.

Open Access and Africa

The state of open access in Africa today is a mixed one, with progress being made in some areas but challenges remaining in others. Notwithstanding, open access has been described as a development imperative for Africa that offers tremendous opportunities to the continent to actively contribute to global knowledge (Nwagwu, 2013). Access to quality research is before now a herculean task for African researchers and students but as the ubiquitous Internet technology continue to facilitate access to information getting access from every corner of the world becomes less of a burden to the extent that Africans were seen as passive downloaders of knowledge. It thus appear, the access inequity has been replaced with contribution inequity as the share of Africa's contribution to global research outputs stood at awful less than 1% (Ngongalah *et al.*, 2018) and Nigeria's contribution was in particular seen as low (Alordiah *et al.*, 2021). It is to this effect that the open access movement is perceived as a good chance for Africa to reduce the inequity caused by the invisibility of its research outputs.

On the positive side, there has been a growing recognition of the importance of open access in Africa, and many initiatives and policies have been developed to promote it. For example, a number of universities and research institutions in Africa have adopted open access policies that require their researchers to publish their work in open access journals or repositories(Nwagwu, 2013). In addition to this, a multi-stakeholder group of people in the academia and scholarly communications have come together develop principles and infrastructure to drive open access on the continent. The declarative statement, named "Principles for Open Access in Scholarly Communication in and about Africa", averred as quoted below:

(1) Academic Research and knowledge from and about Africa should be freely available to all who wish to access, use or reuse it while at the same time being protected from misuse and misappropriation.

(2) African scientists and scientists working on African topics and/or territory will make their research achievements including underlying datasets available in a digital Open Access repository or journal and an explicit Open Access license is applied.

(3) African research output should be made available in the principle common language of the global science community as well as in one or more local African languages.

(4) It is important to take into consideration in the discussions indigenous and traditional knowledge in its various forms.

(5) It is necessary to respect the diverse dynamics of knowledge generation and circulation by discipline and geographical area.

(6) It is necessary to recognise, respect and acknowledge the regional diversity of African scientific journals, institutional repositories and academic systems.

(7) African Open Access policies and initiatives promote Open Scholarship, Open Source and Open Standards for interoperability purposes.

(8) Multi-stakeholder mechanisms for collaboration and cooperation should be

established to ensure equal participation across the African continent.

(9) Economic investment in Open Access is consistent with its benefit to societies on the African continent – therefore institutions and governments in Africa provide the enabling environment, infrastructure and capacity building required to support Open Access

(10) African Open Access stakeholders and actors keep up close dialogues with representatives from all world regions, namely Europe, the Americas, Asia, and Oceania

Source: (AfricArXiv, no date) at https://info.africarxiv.org/african-oa-principles/

On open scholarly infrastructure, a number of open access repositories (green OA route) and platforms have been developed to make African research more visible and accessible. These include:

The AfricArXiv- a community-led regional or continental digital repository for African scholarly outputs(Ahinon *et al.*, 2020).The archive aims to improve the citability and discoverability of African scholarly works and thus accepts research outputs of diverse forms such as "manuscripts, datasets, presentations, posters, code, proposals" (AfricArXiv, no date).

African Journals Online (AJOL), established in 1998 is the premier digital platform of scholarly journals published on the Africa continent. It is currently the single largest aggregator of African-published journals (with 675 journals) 55% (372) of which are open access journals. The goal of the AJOL project is"to increase global and continental online access, awareness, quality and use of African-published, peer-reviewed research" (AJOL, no date). Nigeria (278), South Africa (102), Ethiopia (45), Kenya (38), Ghana (37) and Tanzania (32) are the countries with most participating journals of 30 or more.

The other initiatives are the African Academy of Sciences' Open Research platform that employs the transparent peer review method to publish the scholarly works of researchers funded by and affiliated with the African Academy of Sciences(The AAS, no date).Also, the Scientific Electronic Library Online **(**SciELO) SA is South Africa's foremost open access searchable full-text journal database in service of the South African research community. However, SciELO SA is limited to a selected collection of peer-reviewed scholarly journals from South Africa(SciELO, 2023).

Whereas most of the OA initiatives are driven largely by people and institutions from and/or in South Africa (Nwagwu, 2013), Nigeria is gradually rising to the occasion with the recent launch of the National Repository of Nigeria (NRN) by the National Library of Nigeria. The repository's aims are to: "preserve in electronic format the intellectual and cultural resources of Nigeria for posterity; increase the visibility of the Nigerian knowledge storehouse and its scholarly, literary and cultural heritage; and increase the availability and accessibility of local Nigerian content to the global community" (National Library of Nigeria, 2023).

Furthermore, Arab and Francophone African countries, driven by cognitive justice and fairness, are also making strides to achieve open access to research outputs. They are addressing the inequity issue by breaking the English-dominated culture of scholarly communication through the use of multilingual approach to present the journals they propagate on their platforms. Grenier des savoirs and DICAMES are two of their most prominent open access initiatives and platforms and they are both supported by the Association Science Afrique.

Grenier des savoirs, translated as "Attic of Knowledge", is a journal platform that "publishes and distributes several dozen African and Haitian scientific journals in open access to fight against the invisibility and low accessibility of African and Haitian knowledge in the academic world or in society in general"(The Attic of Knowledge, no date, p. 1). Journals participating in the Grenier des savoirs abide by a set of conditions which include: "free full access under CC BY-SA license, absence of publication fees requested from authors and cognitive justice, multidisciplinarity, epistemological pluralism, multilingualism, fight against sexism in science, social relevance of articles" (The Attic of Knowledge, no date, p. 1).

DICAMES is a regional repository hub of the African and Malagasy Council for Higher Education (CAMES). DICAMES is the other pan-African collaborative project of the Association Science Afrique that "aims to preserve and disseminate all

the scientific production of universities in the CAMES area" freely (DICAMES, no date).

These platforms and many others have been instrumental in promoting open access to African research and facilitating collaboration among African researchers.

Notwithstanding, there are still challenges that need to be addressed. One of the biggest challenges is the lack of reliable and affordable Internet connectivity in many parts of Africa, which can limit access to open access resources(Nwagwu and Ahmed, 2009). In addition, there is a lack of awareness and understanding of open access among some researchers and institutions, which can make it difficult to promote and implement open access policies(Nwagwu, 2013).

Furthermore, while there has been some progress in promoting open access in Africa, there is still a significant gap between African research output and its visibility and impact on the global stage. This highlights the need for more support and investment in open access initiatives in Africa. Nwagwu (2013) has called on the participation of governments and their agencies in the bid to sustain the progress made in promoting open access in Africa.

Another recent worrying challenge for Africa researchers is the humongous and practically unaffordable article processing charges of elite journals to publish Gold OA. Many scholars and observants of open access have described this as a disincentive (Nwagwu, 2013), promoter of inequalities (Asubiaro, 2022), a clog in the wheel of progress (Nabyonga-Orem *et al.*, 2020) and a dilemma for African researchers (Mekonnen *et al.*, 2022). Although, some of the journals provide APC reduction or waivers to scholars from certain countries based on some economic indicators but this has been notably criticized (Gardner Jr *et al.*, 2021; Nwagwu, 2023).

Conclusion

The movement for the free and immediate access without the restrictions of policies and rights but with full attribution of authors is a just and desirable cause that should be supported by everyone that seek the general good of human society and that see research as a public good for the sustainability and improvement of man and his environment. This phenomenon described as open access has been strengthened by the possibilities of digital networked technologies represented in the ubiquitous Internet. Though a desirable global cause finding a sustainable economic model for OA has been a thorny issue that the APC-based model of the Gold OA route has further complicated with the undesirable outcome of the emergence of profit-oriented and science-destroying publishers called vanity presses, pseudo-journals or better known as predatory journals and publishers. Some of the efforts to curtail the bad OA practice were reported in this paper with the greater hope that a better model beyond the APC would emerge to make OA default for all published research in the nearest future.

On the African continent, however, OA is emerging albeit slowly but with a mixed fortune. While progress is being made in some areas but challenges remain in others. Notwithstanding, open access has been described as a development imperative for Africa that offers tremendous opportunities to the continent to actively contribute to global knowledge. To this end, the paper reported that many initiatives and policies have been developed to promote open access on the continent. We noted that a number of universities and research institutions in Africa have adopted open access policies that require their researchers to publish their work in open access journals or repositories. The paper presented a number of open access initiatives and platforms that are actively being deployed to achieve OA mandate for and in the continent.

It is recommended that the OA initiatives on the continent be given more aggressive support by African governments, institutions, multilateral organisations on the African continent and scholars themselves. Serious educational programmes and carrot-and-stick approaches should be considered to tackle the predatory publishing problem prevalent among African scholars so as to mitigate its unpleasant implications.

References

AfricArXiv (no date) *African Principles for Open Access in Scholarly Communication*. Available at: https://info.africarxiv.org/african-oa-principles/ (Accessed: 25 January 2022).Ahinon, J. S. *et al.*(2020) 'AfricArXiv–the pan-African Open Scholarly Repository'. AfricArXiv. doi: https://doi.org/10.31730/osf.io/56p3e.

AJOL (no date) *African Journals Online: Welcome to AJOL*, *African Journals Online*. Available at: https://www.ajol.info/index.php/ajol (Accessed: 3 April 2023).

Ajuwon, G. A. and Ajuwon, A. J. (2018) 'Predatory Publishing and the Dilemma of the Nigerian Academic', *African Journal of Biomedical Research*, 21(1) 1–5.

Alordiah, C. O. *et al.*(2021) 'Nigeria'S Low Contribution to Recognized World Research Literature: Causes and Remedies', *Accountability in Research*, 28(8) 471–491. doi: 10.1080/08989621.2020.1855984.

AMWA, EMWA and ISMPP (2019) 'American Medical Writers Association, European Medical Writers Association, and International Society for Medical Publication Professionals', *Current Medical Research and Opinion*, 35(9)1657–1658. doi: 10.1080/03007995.2019.1646535.

Asubiaro, T. V. (2022) 'How Authorship Position, Journal Prestige and Author Processing Charges Impact Inequalities in COVID-19 Research with Authors from Sub-Saharan African Countries', *African Journal of Library, Archives and Information Science*, 32 (2)45–159.

Ayeni, P. O. and Adetoro, N. (2017) 'Growth of Predatory Open Access Journals: Implication for Quality Assurance in Library and Information Science Research', *Library Hi Tech News*, 34(1) 17–22. doi: 10.1108/LHTN-10-2016-0046.

Beall, J. (2012) 'Predatory Publishers are Corrupting Open Access', *Nature*, 489(7415), p. 179. doi: 10.1038/489179a.

Beall, J. (2013a) 'Predatory Publishing is just one of the Consequences of Gold Open Access', *Learned Publishing*, 26(2), pp. 79–84. doi: 10.1087/20130203.

Beall, J. (2013b) 'The Open-Access Movement is Not Really about Open Access', *triple C:* Communication, Capitalism and Critique. Open Access Journal for a Global Sustainable *Information Society*, 11(2) 589–597. doi: 10.31269/triplec.v11i2.525.

Beall, J. (2015) 'Criteria for Determining Predatory Open-Access Publishers For', *Journal of Chemical Information and Modeling*, pp. 1–6. doi: 10.1017/CBO9781107415324.004.

Bethesda Statement BS (2003) *Bethesda Statement on Open Access Publishing*. Available at: https://dash.harvard.edu/handle/1/4725199 (Accessed: 1 February 2022).

BOAI (2012) *Prologue: Budapest Open Access Initiative After 10 Years*. Available at: https://www.budapestopenaccessinitiative.org/boai10/ (Accessed: 24 January 2022).

BOAI (no date) *Read the Declaration – Budapest Open Access Initiative*. Available at: \https://www.budapestopenaccessinitiative.org/read/ (Accessed: 25 January 2022).

Clark, J. and Smith, R. (2015) 'Firm Action Needed on Predatory Journals', *BMJ/ : British Medical Journal*, 350, p. h210. doi: 10.1136/bmj.h210.

Crow, R. (2002) 'The Case for Institutional Repositories: a SPARC Position Paper', *ARL Bimonthly Report 223*.

Cukier, S. *et al.*(2020) 'Checklists to Detect Potential Predatory Biomedical Journals: A Systematic Review', *BMC Medicine*, 18(1), pp. 1–20. doi: 10.1186/s12916-020-01566-1.

DICAMES (no date) *DICAMES: the Open Scientific Archive of CAMES*, *DICAMES*. Available at: https://dicames.online/jspui/ (Accessed: 3 April 2023).

Else, H. (2020) 'Nature Journals Reveal Terms of Open-Access Option', *Nature*, 588(3), pp. 19–20.

Eve, M. P. and Priego, E. (2017) 'Who is Actually Harmed by Predatory Publishers?', *Open Access Journal for a Global Sustainable Information Society*, 15(2)755–770. Available at: https://www.triple-c.at/index.php/tripleC/

article/view/867/1042 (Accessed: 24 January 202' 2).

Gardner Jr, U. G. *et al.*(2021) 'Article processing Charge Waiver Policies as a Barrier to Oncology Scholarship in Low-and Lower-Middle-Income Countries', *JCO Global Oncology*, 7.

Garisto, D. (2022) *ArXiv.org Reaches a Milestone and a Reckoning*, *Scientific American*. Available at: https://www.scientificamerican.com/article/arxiv-org-reaches-a-milestone-and-a-reckoning/# (Accessed: 25 January 2022).

Hooley, T. (2013) 'The Digital Scholar: How Technology is Transforming Scholarly Practice', *British Journal of Guidance and Counselling*, 41 (3) 345–347. doi: 10.1080/03069885.2013.778013. *Is Open Access the same as Predatory Publishing?* (no date). Available at: https://predatory-Publishing.com/is-open-access-the-same-as-predatory-publishing/ (Accessed: 15 January 2022).

Jurchen, S. (2020) 'Open Access and the Serials Crisis: The Role of Academic Libraries', *Technical Services Quarterly*, 37(2)160–170. doi: 10.1080/07317131.2020.1728136.

Kassirer, J. P. and Campion, E. W. (1994) 'Peer Review: Crude and Understudied, but Indispensable', *Jama*, 272(2) 96–97.

Kisely, S. (2019) 'Predatory Journals and Dubious Publishers: How to Avoid being their Prey', *BJPsych Advances*, 25(2)113–119. doi: 10.1192/bja.2018.56.

Krawczyk, F. and Kulczycki, E. (2021) 'How is Open Access Accused of being Predatory? The Impact of Beall's Lists of Predatory Journals on Academic Publishing', *The Journal of Academic Librarianship*, 47(2)102271. doi: 10.1016/J.ACALIB.2020.102271.

Laine, C. and Winker, M. A. (2017) 'Identifying Predatory or Pseudo-journals', *Biochemia Medica*, 27(2)285–291. doi: 10.11613/BM.2017.031.

Luther, J. (2017) *The Stars are Aligning for Preprints*, *The Scholarly Kitchen*. Available at: https://scholarlykitchen.sspnet.org/2017/04/18/stars-aligning-preprints/ (Accessed: 25 January 2022).

Lynch, C. A. (2003) 'Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age', *Portal: Libraries and the Academy*, 3(2), pp. 327–336. doi: 10.1353/pla.2003.0039.

MacColl, J., Jones, R. D. and Andrew, T. (2006) 'The Institutional Repository in the Digital Library', in. Chandos (Oxford) Publishing Ltd. Available at: https://www.era.lib.ed.ac.uk/handle/1842/858.

Mekonnen, A. *et al.* (2022) 'Can I Afford to Publish? A Dilemma for African Scholars', *Ecology Letters*, 25 (4) 711–715.

Mouton, J. and Valentine, A. (2017) 'The extent of South African Authored Articles in Predatory Journals', *South African Journal of Science*, 113(7–8)1–9. doi: 10.17159/SAJS.2017/20170010.

Murphy, J. A. (2019) 'Predatory Publishing and the Response from the Scholarly Community', *Serials Review*, 45 (1–2)73–78. doi: 10.1080/00987913.2019.1624910.

Nabyonga-Orem, J. *et al.* (2020) 'Article Processing Charges are Stalling the Progress of African Researchers: a Call for Urgent Reforms', *BMJ global health*, 5(9). e003650.

National Library of Nigeria (2023) *National Repository of Nigeria*. Available at: https://nigeriareposit.nln.gov.ng/home (Accessed: 3 April 2023).

Ngongalah, L. *et al.* (2018) 'Research Challenges in Africa – An Exploratory Study on the Experiences and Opinions of African Researchers', *bioRxiv*. Cold Spring Harbor Laboratory, p. 446328. doi: 10.1101/446328.

Nwagwu, W. (2023) 'Editors Quit Brain Research Journals to Protest Against Fees Nature', *The Open Scholarship Initiative Listserv*. Available at: https://mail.google.com/mail/u/0/#inbox/FMfcgzGsmNPzcZGPrGmPPLzVMSVQwRZB (Accessed: 2 May 2023).

Nwagwu, W. E. (2013) 'Open Access Initiatives in Africa - Structure, Incentives and Disincentives',

Journal of Academic Librarianship, 39 (1)3–10. doi: 10.1016/j.acalib.2012.11.024.

Nwagwu, W. E. and Ahmed, A. (2009) 'Building Open Access in Africa', *International Journal of Technology Management*, 45 (1–2) 82–1 01. doi: 10.1504/ijtm.2009.021521.

Nwagwu, W. E. and Ojemeni, O. (2015) 'Penetration of Nigerian Predatory Biomedical Open Access Journals 2007–2012: A Bibliometric Study', *Learned Publishing*, 28(1)23–34.

Ola, K. (2018) 'Theories of Open Access', *Journal of Open Access to Law*, 6 (1) 1–42. Available at: https://ojs.law.cornell.edu/index.php/joal/article/view/75.

Omobowale, A. O. *et al.*(2014) 'Peripheral Scholarship and the Context of Foreign Paid Publishing in Nigeria', *Current Sociology*. Edited by F. Beigel, 62(5)666–684. doi: 10.1177/0011392113508127.

OpenDOAR (2023) *OpenDOAR*. Available at: https://v2.sherpa.ac.uk/view/repository_by_country (Accessed: 2 May 2023).

Pinfield, S. *et al.* (2014) 'Open - Access Repositories Worldwide , 2005 - 2012/ : Past Growth , Current Characteristics and Future Possibilities', *Journal of the Association for Information Science and Technology*, 65 (12) 2404–2421. doi: 10.1002/asi.

Pooley, J. (2019) *The Library Solution: How Academic Libraries Could End the APC Scourge – Items*, *items*. Available at: https://items.ssrc.org/parameters/the-library-solution-how-academic-libraries-could-end-the-apc-scourge/ (Accessed: 24 January 2022).

Rich, T. S. (2016) 'Predatory Publishing, Open Access, and the Costs to Academia', *PS - Political Science and Politics*, 49 (2)265–267. doi: 10.1017/S1049096516000172.

Rizor, S. L. and Holley, R. P. (2014) 'Open Access Goals Revisited: How Green and Gold Open Access Are Meeting (or Not) Their Original Goals', *http://dx.doi.org/10.3138/jsp.45.4.01*, 45 (4) 321–335. doi: 10.3138/JSP.45.4.01.

SciELO (2023) *SciELO - Scientific Electronic Library Online*. Available at: http://www.scielo.org.za/ ' (Accessed: 3 April 2023).

Shen, C. and Björk, B.-C. (2015) ''Predatory'open Access: A Longitudinal Study of Article Volumes and Market Characteristics', *BMC medicine*, 13 (1)1–15.

Smith, R. (2006) 'Peer Review: A Flawed Process at the Heart of Science and Journals', *Journal of the Royal Society Of Medicine*, 99 (4)178–182.

Suber, P. (2012) *Open Access*. Cambridge: The MIT Press. doi: 10.18527/2500-2236-2017-4-1-ii-iv.

Tella, A. (2020) 'Nigerian Academics Patronizing Predatory Journals: Implications for Scholarly Communication', *Journal of Scholarly Publishing*, 51(3)182–196. doi: 10.3138/jsp.51.3.02.

Tennant, J. P. *et al.*(2016) 'The Academic, Economic and Societal Impacts of Open Access: An Evidence-based Review', *F1000Research*. doi: 10.12688/f1000research.8460.1.

The AAS (no date) *The AAS Open Publishing*, *The African Academy of Sciences*. Available at: https://www.aasciences.africa/aas-open (Accessed: 3 April 2023).

The Attic of Knowledge (no date) *About the Attic of Knowledge*, *Grenier des savoirs*. Available at: https://www.revues.scienceafrique.org/about/ (Accessed: 3 April 2023).

Truth, F. (2012) 'Pay Big to Publish Fast: Academic Journal Rackets.', *Journal for Critical Education Policy Studies (JCEPS)*, 10 (2).

Velterop, J. (2015) 'The Fenced-off "Nice" Publication Neighbourhoods of Jeffrey Beall', *SciELO in Perspective*. Available at: https://blog.scielo.org/en/2015/08/01/the-fenced-off-nice-publication- neighbourhoods-of-jeffrey-beall/#.YmvTI9rMLIV (Accessed: 29 April 2022).

Xia, J. (2015) 'Predatory Journals and their Article Publishing Charges', *Learned Publishing*, 28 (1) 69–74. doi: 10.1087/20150111.

Xia, J. *et al.*(2015) 'Who Publishes in "Predatory" Journals?', *Journal of the Association for Information Science and Technology*, 66 (7)1406–1417. doi: https://doi.org/10.1002/asi.23265.

Idowu Adegbilero-Iwari is the Science/Scholarly Communications Librarian of Afe Babalola University, Ado-Ekiti. He priorly worked as digitisation consultant at the library of IITA, Ibadan and Library Coordinator at Elizade University, Ilara-Mokin, Nigeria.

'Niran Adetoro is Professor of Library and Information Science and was Director, Academic Planning, Quality and Assurance (DAPQA), Tai Solarin University of Education,(TASUED),Nigeria. He was pioneer Head, Department of Library and Information Science, TASUED. Prof Adetoro holds a PhD in Library and Information Science from the University of Ibadan, Nigeria.

Ibiwumi K. Salawu is a research librarian at the Nigerian Stored Product Research Institute, Ilorin, Nigeria. She is a doctoral student at Tai Solarin University of Education, Ijebu-Ode, Nigeria.