

DIGITAL REPOSITORIES –MAKING AFRICA’S INTELLIGENTSIA VISIBLE?

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This article reviews a relatively new phenomenon of African universities’ Open Access institutional repositories for research materials, explains why they are so important a game changer in the continent’s intellectual landscape, and introduces a new initiative by the International African Institute to find out what is happening on the ground. These repositories are being set up to store, and make available on-line, the full texts of research theses, as well as other research outputs, submitted in fulfilment of Doctoral and/or Masters degree requirements at African universities and related institutions. The article sets out how these digital repositories are beginning to make the work of African countries’ research communities more visible and accessible both locally and internationally. And it looks forward to where the rapidly growing digital repository movement in Africa is likely to go as it tackles the key challenges ahead.

Africa’s Unheard Intellectuals

We are living through a strange moment in the African continent’s history. Half a century on from Independence and in what is supposed to be the Information Age where with a few clicks of a mouse the world’s knowledge is instantly accessible, Africa’s own intellectuals and researchers remain largely invisible. As John Paul Anbu K at the University of Swaziland has pointed out:

in African universities dissemination of one’s research findings is a major concern because of publishing and access inabilities.... most African scholarship is either unpublished or delayed ... [and] the visibility of African scholarship is kept to a minimum.¹

¹John Paul Anbu K., “Institutional Repositories: Time for African universities to Consolidate the Digital Divide” *Leiden: African Studies Centre* [online resource] <http://www.ascleiden.nl/Pdf/elecpublconfanbu.pdf> (accessed 01 November 2016).

Kgomotso Moahi (University of Botswana) makes the point even more graphically: “although knowledge is generated in [African] universities and research centres, it is either disseminated in expensive international journals, or gathers dust in the offices and computers of the generators, as well as those that have funded or commissioned the research.”²

African researchers, as a result, are largely invisible to people outside Africa because so few of them are able to publish their work in international scholarly journals or in books produced by the world’s leading monograph publishers. But they are also invisible in their own countries—which is much more serious since the processes of domestic policy making are too often starved of the evidence and analysis that local scholars have produced and could bring to bear.

This situation is all the more extraordinary when one bears in mind the huge growth in higher education in Africa.³ Webometrics lists over 900 HE institutions in Sub-Saharan Africa, plus 156 research centres. The number of students, supposedly fewer than 200,000 forty years ago, is possibly some 10 million today.⁴ Of these some 9% are enrolled in Masters and PhD programmes. Just imagine the volume of research that all these post-grads may be producing! Yet, as Abubakar Mohammed of Ahmadu Bello University says of his own country,

Nigeria, with a higher number of universities and research institutions compared to any other country in Sub-Saharan Africa, produces a large volume of research outputs that are of paramount value to the scholarly community. Unfortunately these outputs gather dust in various departmental offices and institutional libraries without being accessed

²Kgomotso H. Moahi, “Institutional Repositories: Towards Harnessing Knowledge for African Development,” presented at the First International Conference on African Digital Libraries and Archives (ICADLA-1), Addis Ababa, Ethiopia, 1st-3rd July 2009 [online resource] <http://wiredspace.wits.ac.za/bitstream/handle/10539/8950/35%20Moahi.pdf?sequence=1&isAllowed=y> (accessed 01 November 2016).

³*Ranking Web of Universities* [online resource] http://www.webometrics.info/en/Ranking_africa/Sub_saharan_Africa (accessed 01 November 2016).

⁴Irene Friesenhahn, “Making Higher Education Work in Africa—Facts and Figures” [online resource] *SciDev.Net* <http://www.scidev.net/global/education/feature/higher-education-africa-facts-figures.html> (accessed 01 November 2016).

and consulted [my italics]. Some [may] eventually get published in a local journal that has minimal circulation due to poor distributorship, marketing or prestige. In consequence these researches die at institutional level.⁵

Africa's researchers and scholars face a double barrier, not to mention the periodic constraints posed by dictatorial regimes or violent conflicts and wars. Within their own countries, the small size of the economy and limited size and purchasing power of the middle class mean there is almost always too small a market for non-fiction, let alone scholarly, book publishers to thrive.⁶ This is in stark contrast with the publishing scene today in the biggest and most thriving developing countries like India, Brazil or China where discourse is dominated by their own intelligentsias. And the second barrier is the difficulty of publishing one's work internationally in either the world's leading journals or the lists of the big scholarly publishers. The quickest of glances at journals' contents pages and publishers' catalogues will show up how few African scholars overcome the multitude of obstacles that exist and see their work in print.

The extraordinary situation exists, consequently, where intellectual discourse about Africa is still dominated by non-African scholars. Indeed it may not be an exaggeration to say that Africans, whether university teachers or students, still have to rely on books authored by non-Africans whose understanding and perspectives have been shaped by living outside the Continent. In no way am I suggesting some conspiracy theory on the part of Western scholars.⁷ Nor is this the place to explore in detail the obstacles African authors face in getting published at home or abroad. But the fact remains: the principal lens held up to the continent today is still fashioned by outsiders.

⁵Abubakar Mohammed, "Institutional Digital Repository: An Option for Scholarly Communication in Nigeria" *International Journal of Education and Research* 1, 6 (June 2013).

⁶South Africa remains the principal exception.

⁷To cite one example to the contrary, a number of Western journal editors have in recent years run special workshops to help African researchers get published.

Institutional Repositories in African Universities—A Way out of this Impasse?

In the 21st century, digital storage of research material, published and unpublished, has taken off exponentially. This is impacting in all sorts of contexts. Few academics now take out individual subscriptions to scholarly journals. Few go to their university library to read articles there in hard copy. Instead, journal articles are more and more being read on-line. And some libraries, as they come under increasing storage space pressure, are moving towards taking out journal subscriptions in digital form only.

In the field of books, most monographs are now published both digitally and in hard copy. Whether hard copy editions are likely to become a thing of the past remains to be seen.

Yet another development is the requirement by more and more universities around the world that research theses not only be submitted in digital form, but that post-graduate students agree to their being stored in the university's institutional repository.

And another milestone in the direction of digital travel is the Open Access movement where big research funders, like the Wellcome Trust and governments who see taxpayers' money financing research, are insisting that the written up results should be accessible on the Internet to all comers free of charge.

The critical question is how far these new technological capacities that are just becoming available in African countries open up an opportunity for African-authored research material, both what will be undertaken in the years ahead and what has already been written up in past decades, to be placed in digital repositories that are easily accessible, rapidly searchable, and open to being aggregated by a country-wide repository and internationally.

The key point needs stressing: such repositories in African universities, particularly if they are able to go back in time and digitise research theses from the pre-computer era that exist in hard copy only, could hold out the promise of bringing to light for the first time in history two generations of currently unavailable, unknown and unused African scholarship. This holds out the prospect of utterly transforming the world of African Studies. The continent, from being largely only the object of investigation, would henceforth become the primary author of its own understanding. Only in this way

will the current crass intellectual imbalance between Western outsider and African insider be ended.

One note of caution, of course, must be sounded. Digital repositories are not libraries where staff apply their minds to the likely quality of acquisitions they are considering. Repositories are more like warehouses, and in the minority of cases where university staff and post-graduate students are allowed to self-archive (rather than submitting their research writings to the repository manager for uploading), they become simply a kind of intellectual self-storage facility! This article is exploring the warehousing nature of African university repositories, not making judgements about the possible quality of research work that is eventually stored in them. Like all higher education institutions around the world, the quality of research outputs in African universities will vary hugely. But I do suggest that the mere existence of repositories may in the long term have a positive impact on standards. As they facilitate researchers' writings becoming more readily and widely visible to their peers, it seems reasonable to expect this.

*Why Digital Repositories for storing research materials are so important*⁸

In addition to correcting the ongoing imbalance just referred to in accessible research about Africa authored by African and Western scholars, institutional repositories in African universities could provide the following gains:

1. As the number of theses submitted by students in African universities and placed in their repositories grows, the sum total of henceforth accessible empirical information and analytical perspectives and conclusions about Africa in every field of scholarship will grow hugely in quantity.

2. Scholars in any particular African country will much more easily be able to find out who else in their country, or indeed elsewhere in Africa, is doing, or has in the past done, research on a particular topic of interest to them, and to read on-line what they have written. What's more, digital repositories will be able to facilitate African scholars getting in touch with one another across national borders and building African research networks.

⁸Cf. Robert Molteno, "Why Digital Repositories for Storing Research Writings are so Important" [online resource] *African Digital Research Repositories* <http://www.internationalafricaninstitute.org/repositories/why.html> (accessed 01 November 2016).

3. As African institutional repositories increase in number and their holdings grow, a younger generation of African scholars and researchers will see the fruits of their work becoming accessible and known to their colleagues locally, in Africa as a whole, and to a global audience. This ought greatly to raise morale and make original research feel not just a hoop they have to jump through in order to get a higher degree, but something that will gain them public recognition, and on occasion make a practical difference.

Moahi sums up trenchantly: “[Only] the development of institutional repositories can ensure the connection of Africans to their own knowledge and information.”⁹

African Institutional Repositories—A Very Brief History

The story starts in democratic South Africa. At the very beginning of the century, in the year 2000, the University of Pretoria set up the first repository in Africa. It was mainly for theses and dissertations.¹⁰ Six years later, it expanded to include all staff’s newly published output as well as digitising some historical and archival materials. Other South African universities followed in Pretoria’s footsteps and, as of July 2016, there are at least 22 university repositories in the country. In the rest of Sub-Saharan Africa repositories began to take off at least ten years ago. By the end of 2006, there were seven. This grew to 12 by late 2007 and 19 in 2008, of which 13 were in South Africa and the others in Egypt, Kenya, Namibia, Uganda and Zimbabwe.¹¹ At this time, 78% of all institutional repositories were located in Europe and North America, and African repositories comprised only 1% of the total

⁹Moahi, “Institutional Repositories.”

¹⁰Brenda van Wyk and Janneke Mostert’s “African Institutional Repositories as Contributors to Global Information: A South African Case Study” *Mousaion* 32 (2014): 98-114 [online resource] http://journals.co.za/docserver/fulltext/mousaion/32/1/mousaion_v32_n1_a6.pdf?expires=1477987956&id=id&acc-name=57780&checksum=002B9924F752F6AC341833BC9D0EA3E0 (accessed 01 November 2016).

¹¹Priti Jain, Gemma Bentley and M. Tunde Oladiran, “The Role of Institutional Repository in Digital Scholarly Communications” [online resource] Paper presented at the 2nd African Digital Scholarship & Curation Conference, held at CSIR Conference Centre, Pretoria, South Africa, 12-14 May, 2009. See http://www.library.up.ac.za/digi/docs/jain_paper.pdf (accessed 01 November 2016).

number. What is more, their holdings were tiny, mostly with fewer than 500 items.



The situation has leapt forward since then. By one count¹² Sub-Saharan African countries today (2016) have 34 institutional repositories, in addition to South Africa's 22. (This total compares with 903 in Europe.) Nigeria leads the field with 11; Kenya follows with 8, and a number of countries, including notably Botswana, Ethiopia, Ghana, Namibia, Senegal, Tanzania, Uganda, Zimbabwe, have at least one. The International African Institute (IAI) records (including universities and a small number of other repositories) Sub-

Saharan countries having 71 and South Africa 36. If one includes the 15 the IAI has tracked down in five North African countries, the total comes to 122.¹³ Yet another source, OpenDOAR, which is probably the most reliable of current databases in this field, lists, as of August 2016, a significantly larger number of repositories than either of the above sources. It records Sub-Saharan Africa having 82 repositories (Kenya leading the field with 23, followed by Nigeria with 18 and Tanzania with 11), and South Africa having 31 and North Africa 27.¹⁴ OpenDOAR, however, records not only institutional repositories but also subject-specific and government repositories.

What is exciting is how fast this dimension of Africa's digital landscape is expanding. In assessing the situation, however, a couple of startling facts stand out. No repositories exist in 27 African countries (over half the total number in Sub-Saharan Africa).¹⁵ A second fact relates to the other end of

¹²*Ranking Web of Universities. Ranking Africa* [online resource] http://www.webometrics.info/en/Ranking_africa (accessed 01 November 2016).

¹³For a full list of repositories the International African Institute (IAI) has tracked down, including a list of African countries which still have no repositories, see *African Digital Research Repositories* [online resource] <http://www.internationalafricaninstitute.org/repositories.html> (accessed 01 November 2016).

¹⁴*OpenDOAR. Directory of Open Access Repositories* [online resource] http://www.open_doar.org/find.php?format=charts (accessed 01 November 2016).

¹⁵*Ibid.*

the scale. The most important country, Nigeria, claims to have 223 higher education institutions, of which 122 call themselves universities. Yet only a quarter of these, 30, are members of the Association of Commonwealth Universities.¹⁶ And only 12 currently have institutional repositories. Indeed one of the country's most eminent universities, Ibadan, still does not have a functioning repository, although plans are in hand to build one.

The International African Institute (IAI)'s Project to contact and map existing Repositories in Africa

The International African Institute is a very small, but long-standing, charitable organization that focuses mainly on encouraging anthropological research in Africa.¹⁷ It has a vigorous publications programme, including its well reputed journal, *Africa*; its annual *Africa Bibliography* listing monographs, book chapters and journal articles; and several book series published with Cambridge University Press, Zed Books, and Indiana UP.

As part of its commitment to encouraging African research, the IAI has launched a small-scale, but original, project to get a better sense of the rapidly changing landscape of institutional repositories in Africa. The intention is a practical one—to explore what role, if any, the IAI might usefully play in promoting and engaging with these repositories, and/or encouraging other organizations both within Africa and beyond to do so.

In order to guide the project, leading figures in the field from a variety of countries and institutions in Africa and elsewhere have been asked to join an Expert Advisory Panel.¹⁸ Additional librarians and relevant scholars may be



¹⁶Personal communication from Stephanie Kitchen, Editorial Director, IAI.

¹⁷For further details, see the website of the *International African Institute* [online resource] <http://www.internationalafricaninstitute.org/index.html> (accessed 01 November 2016).

¹⁸For the list of members of this panel see *African Digital Research Repositories. Expert Advisory Panel* [online resource] <http://www.internationalafricaninstitute.org/repositories/experts.html> (accessed 01 November 2016).

invited to become members in future. The first step was to try and establish, in an up-to-date fashion, what repositories currently are in effective existence. This has required making personal contact with relevant staff responsible for each repository. This itself has not always been easy, in part because contact details posted on repository sites can often be out of date. The next step was to prepare a detailed questionnaire. This and a survey report based on the first 18 repositories to reply in detail will be available on the IAI website in late 2016. The Managing Editor of the IAI has already written on the preliminary findings.¹⁹

The Findings

Of the 50 repositories approached, effective contact has only been established with the eighteen which responded to the IAI's Questionnaire. The information that follows cannot therefore be regarded as necessarily representative of the whole. Nevertheless, the initial findings are fascinating.

All of them have Open Access policies, although three do allow limited time embargoes, and one doesn't enable actual downloads of material. All the university repositories store theses, usually at both Masters and Doctoral level, and in addition a great variety of other research outputs are also often stored. Most institutions have policies in place relating to students sending their theses to the repository, and in many cases such submission is a requirement of getting one's degree. Staff numbers at these repositories are usually modest, often involving only a couple of full-timers or Full-time Equivalents.

There is widespread interest in going beyond just storing newly written theses, and digitising in addition materials that pre-date the setting up the repository. This is in order that a repository's holdings embrace the research output of African scholars from earlier years, including hard copy theses that pre-date the computer era. Inevitably the process of digitising this material is laborious and costly. But this retrospective expansion of a repository's holdings is absolutely essential for the full range of research undertaken in African universities to become available and the realization of the potential of their repositories to transform the terrain of African Studies. But the high

¹⁹Stephanie Kitchen, "African Digital Research Repositories" Association of Commonwealth Universities Research Newsletter, *Realising Research*, forthcoming.

costs and staff complements required by this expansion mean that very few African repositories have made much progress in this regard. The Université Cheikh Anta Diop of Dakar is the only one to have completed the task; it now holds an extraordinary 6,569 theses dating back to the University's beginnings in 1957.

DSpace is very much the preferred software. But there is widespread frustration over how to customise it to suit a particular institution's library requirements, as well as how to obtain and handle upgrades. As for the level of interest in accessing a repository's digital holdings, Addis Ababa University reported 476, 485 item views (the precise time interval was not specified) and the University of South Africa, which has one of the largest holdings with 17,000 items, reported they had logged nearly 10 million full text views in 2015. Figures like these show just how dramatic the impact of digital repositories may prove to be in making African scholarship visible.

Many problems make the work of Africa's repository managers difficult and frustrating. These include intermittent electricity supplies (Nigeria being a particular offender in this regard), poor Internet connectivity and inadequate broadband capacity, lack of on-line storage capacity as repositories grow in size, a lack of training and specialist IT expertise among librarians, and a lack of funds to finance the digitisation of earlier materials. These obstacles confirm the findings of one or two earlier researchers. Abubakar Mohammed pointed to the existence of all of them, including in an inimitable phrase "epileptic power supply" in his own country, Nigeria.²⁰

Turning to practical things that might be done in order to support repository managers, many of them welcomed the IAI Questionnaire's idea of setting up a blog that would connect them with one another, and where they could air their problems, seek informed advice and generally be kept abreast of technical and policy developments.

²⁰Mohammed, "Institutional Digital Repository," 6.

Looking to the future—Challenges and Opportunities

1. Encouraging African Universities with no repositories to set them up

This is the No. 1 task. With over 1,000 universities, other higher education institutions and research centres in Sub-Saharan Africa, but only some 50 or 60 currently operational institutional repositories (apart from South Africa), there is a huge way to go. As Chimezie Patrick Uzuegbu puts it, Africa’s institutional repositories remain “very poor in number, content category and size”²¹ with the result that “millions of educators and researchers, students ... and others are without affordable access to quality research information” in Africa.²² Encouraging the process cannot be undertaken by any single organization; but there is a place for all sorts of possible initiatives. Within the more sizeable African countries, each university with a repository could link up with one other institution and mentor it in setting up its own repository.

In the French-speaking countries, the Universite Cheikh Anta Diop of Dakar, with its sizeable repository of 9,000 items (including over 6,500 theses) and experience of digitising theses going back to the 1950s, may be best placed to take the lead. Another long established institution in Dakar is CODESRIA, the Council for the Development of Social Science Research in Africa, which operates in both English and French across the continent. Although not yet with a repository of its own, it is interested in Open Access issues and is well placed to help spread more awareness about repositories in the scholarly community.

In English-speaking Africa, the Association of Commonwealth Universities (ACU) has nearly 100 universities in Africa which are members, including 30 in Nigeria, 24 in East Africa, 10 in Ghana, and a dozen in Central

²¹Chimezie Patrick Uzuegbu, “Academic and Research Institutions Repository: a catalyst for access to development information in Africa,” Paper to World Library and Information (IFLA) Congress, 2012 [online resource] <http://www.ifla.org/past-wlic/2012/191-uzuegbu-en.pdf> (accessed 01 November 2016).

²²Iryna Kuchma, “The State of Open Access Publishing and Open Access Repositories.” Lecture delivered (and filmed) at the “Africa Day for Librarians,” Nordic Africa Institute, 9 November 2010 [online resource] <http://nai.diva-portal.org/smash/record.jsf?pid=diva2%3A372919&dsid=3059> (accessed 01 November 2016).

Africa. The ACU is much concerned with the research activities of its university members in Africa. It led, for example, the Development Research Uptake in Sub-Saharan Africa (DRUSSA) Project in 2014.²³ Its links with universities at Vice-Chancellor level could be very useful in achieving buy-in if it decided to play a part in encouraging its African members to build repositories.



Association of African Universities
Association des universités africaines
رابطة الجامعات الأفريقية

play a role. And internationally, there are various organizations like OpenDOAR that are highly relevant to the further development of repositories in Africa.

2. *Building Links among Managers of existing African Repositories*

Librarians and others involved can often feel isolated both within their own universities and cut off from their counterparts in other institutions. The IAI's preliminary study has revealed a widespread desire for more training, including how to handle the highly technical software issues involved in any digital repository. Putting African Repository managers in touch on a regular basis with one another, as well as with other knowledgeable persons in the digital repository world, could be useful so that problems can be discussed and possible solutions pointed to. The lead in this regard might be taken by one of the more established and better financed university repository-

²³See the DRUSSA Policy and Programmes Unit report, "Managing research-related Information in African Universities," May 2015 [online resource] <https://www.acu.ac.uk/publication/download?id=541> (accessed 01 November 2016).

²⁴For more details, see *Database of African Theses and Dissertations (DATAD)* [online resource] <http://www.aau.org/page/database-african-theses-and-dissertations-datad> (accessed 01 November 2016).

ries in Africa. A training workshop for both personnel in universities wanting to set up their repositories and existing repository managers would be costly to organise, but could make a substantial contribution to the process.

3. Aggregation and Subject-specific Repositories

Building aggregation and subject-specific repositories at country level, or beyond, involve complex processes of “harvesting” the contents of universities’ individual repositories. But aggregation, in particular, is essential. John Paul Anbu K. argues:

The next step is to form a network of these repositories across the continent which will further enhance the academic and research capabilities of the continent. With a number of repositories inter-connected in gathering ... and disseminating scholarly communications, there is no doubt that the research and development capabilities of African universities will gain momentum. Such a consortium of repositories will not only serve for better research capabilities, it will also open the visibility of African scholarship to global level.²⁵

The Jesuit Historical Institute in Africa’s Africa Thesis Bank in Nairobi is a well presented and organised subject repository.²⁶ Its focus is on the development of Christianity in Africa, but its holdings range more widely than that and it has ambitious hopes for significant expansion. Inevitably, a subject-specific repository also involves a harvesting function bringing materials together which may be originally located elsewhere, even if, in the case of the Africa Thesis Bank, it is not in technical terms an aggregating repository that can harvest content from other repositories in an automated manner.

Three African countries are in the forefront of setting up country-wide systems of aggregation. South Africa’s National Research Foundation is already starting on this ambitious path. In Zimbabwe the Research Council of Zimbabwe has set up a National Research Database that is aggregating 7 universities, 2 colleges and 3 other research units. And in Ethiopia, a National

²⁵Anbu K, “Institutional Repositories,” 5.

²⁶See *Jesuit Historical Institute in Africa. Thesis Bank* [online resource] thesisbank.jhia.ac.ke (access attempt on 01 November 2016 unsuccessful).

Institutional Repository has been created, but is still at the development stage.²⁷

In addition, an African Studies aggregating repository has been set up by the African Studies Centre Leiden in the Netherlands called Connecting-Africa.²⁸ Started in 2006, it has the ambitious and very helpful aim of making, in its own words, “all worldwide Africanist research material and information accessible through one community portal on the Internet” on an Open Access basis. It currently provides access to digital resources located in about 90 institutional repositories located both outside Africa and within the continent.

4. *The Search Function—the special cases of Google and Google Scholar*

A university setting up its own repository for theses and other research outputs by its staff is only one step on the road to globally accessible research knowledge. Academics do not have the time to search every institution’s site when trying to find out what already exists on a particular topic. Google, and more specifically for scholars Google Scholar, are the crucial aids in this regard because of Google’s pre-eminence as a search tool and the fact that scholars can use both of them for free. But they are only useful in African Studies to the extent that they actually trawl the rapidly expanding number of African university repositories. This is an issue Hans Zell drew attention to a decade ago when Google Scholar was still in its infancy.²⁹

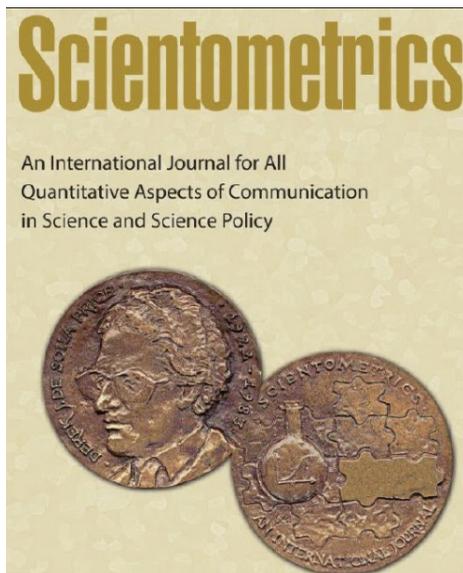
Much more recently, an alarming picture has emerged in relation to Latin American repositories where Google is proving grossly inadequate as a search

²⁷Information contained in the Survey Report of IAI’s African Digital Research Repositories, forthcoming.

²⁸For further details, see *African Studies Centre Leiden (ASCL). Connecting-Africa* [online resource] <http://www.connecting-africa.net/about.htm> (accessed 01 November 2016).

²⁹Hans Zell, “Using Google Scholar for African Studies Research” (“extract from the revised and updated version of “Using Google for African studies research: a guide to effective Web searching” ... Chapter 25 in 4th edition of *The African Studies Companion: A Guide to Information Sources* (print and online) (Lochcarron, Scotland: Hans Zell Publishing, 2006). Accessible online via *Indiana University Bloomington* [online resource] <http://www.indiana.edu/~libsalc/african/google-scholar.html> (accessed 01 November 2016).

tool.³⁰ Enrique Orduna-Malea investigated “the web presence and visibility of Latin American repositories in Google and Google Scholar.”



Based on a sample of 137 repositories using two indicators, “page counts” and “web mentions,” he concluded that “the indexing ratio is low in Google, and [surprisingly] virtually non-existent in Google Scholar” and that there was “a complete lack of correspondence between the repository records and the data produced by these two search tools.” The result is “they do not represent the actual scale of Open Access content available on Latin American repositories.”³¹

The implications for African repositories are serious. Part of the problem may relate to software used by some sites that Google is not able to relate to. But it may also be that African countries have to persuade Google at a political level to take seriously trawling the growing number of African university repositories.

5. Spreading the word in African scholarly communities about the existence of African Institutional Repositories

It hardly needs saying that a repository cannot exist without the active cooperation of its university staff and post-graduate students. And it will only be as good as the willingness of researchers to post their work on the site allows. And it will only be useful to the extent that scholars in other institutions use repositories actively to seek out the work of their colleagues.

³⁰Enrique Orduña-Malea, “The Dark Side of Open Access in Google and Google Scholar: The case of Latin American repositories” *Scientometrics* 102, 1 (January 2015,): 829-846.

³¹Orduña-Malea, “The Dark Side,” 829.

The situation currently, to take Nigeria as an example, is that:

the knowledge of Open Access institutional digital repositories is very low among the major stakeholders including lecturers, researchers, librarians and students. Effective advocacy and promotion is crucial for successful implementation of ... repositories.³²

Several of the repositories—in other African countries including Kenya, Tanzania, South Africa and Zimbabwe—that responded to the IAI Questionnaire mentioned a similar lack of support among academic staff. One argued that “strong resistance” to Open Access journals and institutional repositories has come “from within the institutions’ faculties, mainly because of inexperience with the open archiving and open access concepts” and academics also fearing “intellectual theft.”³³ Work needs to be done by African repository managers, university administrations and leaders, as well as via scholarly journals, to spread understanding amongst academics of the potential benefits of repositories. And worries need to be allayed that placing their work in a repository might make it more difficult for them subsequently to publish their research, as well as fears about plagiarism and the particular concern that non-African researchers might plunder African-authored research for their own career purposes. Repositories really do hold out the promise of transforming the visibility of African scholars in the research work they undertake.³⁴

³²Mohammed, “Institutional Digital Repository,” 6.

³³Anbu K., “Institutional Repositories,” 3.

³⁴I thank all those who kindly commented on this article in draft, in particular Stephanie Kitchen, Managing Editor at the IAI.