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The Current State and Building of Institutional Repository in the Library of Alex Ekwueme Federal University Ikwo, Nigeria

EMMANUEL CHIDIADI ONWUBIKO

FEDERAL UNIVERSITY NDUFU - ALIKE, IKWO,, onwubikoemma@yahoo.com

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Abstract

Institutional repository (IR) is the channel through which an academic institution showcases her research power to the world. To this, academic libraries are under obligation to provide access to both print and electronic resources especially those generated within the university in order to increase access to information resources and visibility of their institutions as a measure of prestige and recognition internationally. It is in view of the above that this study on 'the current state and building of institutional repository in the library of Alex Ekwueme Federal University Ikwo, Nigeria' is carried out. The study investigated the state of the IR; the content; the software in use in managing the IR and the digital preservation strategies. The study also identified certain challenges that have hindered the building of the university's IR. Tables, figures and percentages were employed in analyzing both quantitative and qualitative data collected.

Key words: Institutional repository; Alex Ekwueme federal University; Academic library; University librarian; Content; Preservation Strategies; OpenDOAR

Introduction

Institutional repository (IR) which according to New world Encyclopedia (2018) is an online locus for collecting, preserving, and disseminating, in digital form, the intellectual output of an institution, particularly a research institution has the potential of increasing the visibility, prestige, ranking and public value of researchers and universities. Just few years ago, Universities in Nigeria for example, have started to heed to the call made by the National Universities Commission in 2007, which encouraged academic libraries to provide access to both print and electronic resources especially those generated within the university in order to increase access to information resources and visibility of their institutions as a measure of prestige and recognition internationally (NUC, 2007). This is because the idea of an institutional repository is a current theme in tertiary institutions that have seen it as a necessity for making available their institutional resources, thereby increasing their visibility and better performance in the ongoing web ranking of world universities in particular. The AE-FUNAI established in 2011, has a dream of being a world class university considering the fact that making her institutional resources available will increase her visibility and web ranking as a world class university

It is sad to note that only few universities have their presence in OpenDOAR (OpenDOAR, 2018). The African universities (except South African universities) have not made their presence in OpenDOAR simply because they lack visibility as many of them have not created institutional repositories to showcase their research power to the world. OpenDOAR is an authoritative directory of academic open access repositories worldwide. Regrettably, in the web ranking of the best 100 universities in the world, only few African universities are

ranked along with their peers (UniRank, 2018). This ranking together with other factors is based on a visible institutional repository. In the same vein, the Centre for World University Ranking CWUR, (2018) in its 2018 rankings of the top 1000 universities reveals that only 14 universities from Africa made the list, with University of Ibadan from Nigeria in 991st position. Among the 14 Africa universities that made the list, seven universities from South Africa, four from Egypt and one each from Uganda and Tunisia. According to CWUR, (2018) CWUR's rankings grade universities on seven factors. They are: quality of teaching, alumni employment, quality of faculty, research output, quality publications, influence, and citations. The methodology has been enhanced this year, with research now accounting for 70 per cent of the score CWUR, 2018).

It is essential to note that quite a number of studies on IRs that have been conducted in Africa are mostly related to electronic theses and dissertations, challenges to institutional repositories, digital preservation, etc. The existing literature shows that no single study has been conducted by LIS professionals on development of institutional repositories in Nigerian universities. The current study aims to fill the gap using AE-FUNAI library as a case in point.

Statement of the problem

Despite the potential benefits associated with the use of institutional repositories (IRs) by universities, observations have shown that most universities in Nigeria have not keyed into this laudable innovation. This could be as a result of some factors like low level of awareness and unfavorable perception of IRs on the part of the management of universities, coupled with lack of fund, and lack of policy statements on submissions and restrictions, issues of copyright and preservation.

It also appears that the daily research outputs from universities such as research papers, theses and dissertations, projects, and other valuable library information resources from Nigeria are not widely communicated to users and researchers all over the world. Therefore, a well developed institutional repository is the answer to their visibility and accessibility. This study is aimed ascertaining the state of AE-FUNAI IR as she dreams of becoming a world class university.

Objectives of the study

The main objective of this study is to investigate the development of institutional repositories in Alex Ekwueme Federal University, Ndufu, Alike, Ikwo, Ebonyi State, Nigeria .

Other objectives include:

- I. To know the type of content submitted to the IRs in Alex Ekwueme Federal University library
- II. To know the type of software used to manage content in the IRs.
- III. To know the digital preservation strategies to guide long-term or short-term preservation of content in the IR.
- IV. To know the challenges encountered in developing institutional repositories.

Research Questions

The following research questions acted as a guide towards realizing the objectives of this study:

- i. How far has AE-FUNAI gone in the development of IR?
- ii. What types of contents are submitted to the IR of AE-FUNAI?
- iii. What type of software is used to manage the IR?
- iv. What are the digital preservation strategies to guide long and short terms preservation of the content in the IR?
- v. What are the challenges encountered in developing the IR?

Literature review

Conceptual and Theoretical overview of Institutional repository

According to UNN (2019), Institutional repository represents a concise and coordinated warehouse of intellectual resource, books, journals, research materials, academic volumes, and manuscripts. However, by no means is it restricted to the above-listed. It is a condensed tip of the educational contributions of past and present academia, broadening to include scholarly enterprise, literary achievements, hypothetical reasoning and an array of intellectual gifts from the University to anyone whose search for answers and solutions brings them to the doorsteps of the library. It comprises mainly of Thesis, Dissertations and Projects

According to Prabhakar and Manjula-Rani (2017), an institutional repository in latest concept for collecting, managing, preserving and disseminating scholarly works created in a digital form by staff and students in individual universities and colleges. The repositories also serve as a comprehensive publications database of the parent organization, which in turn facilitate better management of research knowledge better visibility and wider access, rapid communication of research, long term preservation. Library and information Science Academic Blog (2018), states that an Institutional Repository consists of formally organized and managed collections of digital content generated by faculty, staff and students at an institution. This is the collective intellectual output of an institution, recorded in a form that can be preserved and exploited. New world Encyclopedia (2018) defines IR form the online angle as an online locus for collecting, preserving, and disseminating, in digital form, the intellectual output of an institution, particularly a research institution. It explains that for a university, this would include materials such as research journal articles, peer reviews, and digital versions of theses and dissertations, but it might also include other digital assets generated by normal academic life, such as administrative documents, course notes, or learning objects. The above explanation substantiates the fact that IR is not restricted to only digital materials. The New World encyclopedia further states that an institutional repository is published online and is basically open to the public. While most academic journal articles are available only to subscribers and not retrievable by general search engines, such as Google, research papers in an institutional repository are fully accessible by the public free of charge and are accessible by general search engines. Popular software such as DSpace, EPrints, and Bepress are also open sources. Explaining the features of IR, Adewumi and Ikhu-Omoregbe (2016) posit that an IR platform can either be open source or proprietary.

When it is open source, it can be downloaded and in-stalled out of the box free of cost. The codes that make up the platform are also publicly available and institutions intending to use such a platform can customize the plat-form to suit their purpose. On the other hand, when it is proprietary, the proprietor has the sole right to the plat-form and its codes and will only install and administer for institutions at a cost.

This implies that institutional repositories could contain theses, dissertations, projects, course notes, seminar papers, conference proceedings, administrative documents, learning objects and other forms of grey literature from the institution. **According to Lynch, (2003), IRs emerged as a new strategy that allows universities to apply serious systematic leverage to accelerate changes taking place in scholarship and scholarly communication. He further states that many technology trends and development efforts came together to make the strategy possible. Among the factors include: the significant drop in online storage costs, the affordability of repositories; and the establishment of standards like open archives metadata harvesting protocol** Singeh, Abrizah and Karim (2013) reported that for repositories to be successful and sustainable, they must be populated with scholarly works of enduring value. One key criterion that is used to measure the quality of a university is the quality and quantity of research output (Anenene, Alegbeleye and Oyewole, 2017). The situation where the totality of the research output emanating from a particular university cannot be ascertained will make it very difficult to evaluate the university output and could also impede the collation and onward transmission of the researches that can benefit different segments of the society to the parties concerned. This reveals the need for the establishment or development of institutional repositories in universities to make the intellectual output visible globally.

According to Grundy (2017) one of the prominent indicators for university ranking is research productivity. That is, it looks at a university's reputation for research excellence among its peers. Another important criterion is the research influence (citations). The research influence indicator looks at university's role in spreading new knowledge and ideas, i.e. the number of times a university's published work is cited by scholars globally. For example, Shoeb, (2010) reported that the Cybermetrics Lab listed Independence University, Bangladesh in their ranking of top 100 universities (in Bangladesh, first among all private universities, third among all universities after Bangladesh University of Engineering and Technology (BUET) and Dhaka University (DU) and 75th position on the Indian-subcontinent in their January 2009 ranking. This ranking according to Shoeb (2010), was based on research activities, visibility of the university nationally and internationally, volume of scholarly document created and published, and size and impact of its web presence. The fruits of research from the formal research programs of conventional universities and academic research institutions in Nigerian universities are under-utilized as the access to the theses and dissertations is very limited to users outside the university (Ezeani and Ezema, 2011; Baro and Otiode, 2014).

In many African countries, the development of institutional repositories have faced serious problems ranging from low Internet connectivity; software and hardware challenges; lack of

highly skilled personnel; inadequate power supply; low bandwidth; legal copyright laws; poor funding; lack of organizational infrastructure and policies; project sustainability and many others (Ezeani and Ezema, 2011). Omeluzor (2014) stated that both institutions and contributors benefit from IR. Institutions benefit from IR as it; serves as tangible indicator of an institution's quality, thus increasing its visibility, prestige, and public value; increases the ranking of an institution both at local and international level; enhances learning, online teaching and research especially in universities; and presents an institution's intellectual capital to a whole lot of scholars.

When digitized or born-digital materials are put on the web, they tend to increase the library's visibility as the users all over the world access the materials. One major challenge of African scholarship is poor visibility of research findings coming out of the continent (Ezema, 2010). For example, Ezema, (2010); Baro and Otiode, (2014); Bako, (2005) have reported the poor visibility of Nigerian scholarship thereby giving low impact to published works and other valuable information resources coming out from the country. In addition to this, these studies revealed that the quality papers from the country lack readership outside the country. In Nigeria, for example, research outputs in form of theses and dissertations are completely buried in individual university libraries to the extent that it is only very few researchers in the university community that are aware of the existence of these materials (Ezema, and Ugwu, 2013).

3.0 Research Methodology

The study applied descriptive survey research design which according to Nworgu (2015) is a type of study which aims at collecting data on and describing in a systematic manner the characteristics features and facts about a given population. This type of study is only interested in describing certain variables like dependent and independent variables in relation to the population.

3.1. Area of Study

Alex Ekweme Federal University Ndufu – Alike, Ikwo, Ebonyi State, Nigeria is one of the nine Federal Universities that were set up by Former President of Nigeria, Dr. Goodluck Ebele Jonathan (GCFR) on February 26, 2011 in order to expand access to quality education to all parts of Nigeria and to produce knowledge that will support the nation's economy and its industries. According NUC (2018), the University has student population of 5237 and staff strength of 1338. The university focuses on **Excellence and Integrity and a vision to be 'world Class University'**. It is located in South-eastern part of Nigeria. The university Library was established alongside the parent institution – AE-FUNAI. It has staff strength of 110 comprising 5 professional Librarians including the University Librarian, 10 library officers while others are junior library staff. The library collection presently stood at 20,302 volumes of books and 2,751 volumes of professional journals. The library operates an integrated system powered by ADLIB software.

The breakdown of both students and staff shows:

Table 1

Students

Sex	Undergraduates	Postgraduates
Male	2677	40
Female	2507	13
Total	5184	53

Source: NUC (2018)

Table: 2

Staff

Sex	Academic Staff	Non-Teaching Staff
Male	416	460
Female	123	339
Total	539	799

Source: NUC (2018)

Methods for Data Collection

The study covers AE- FUNAI Library. The study was carried out in four parts: first, OpenDOAR database was searched to identify if AE-FUNAI Library was listed in the database. Secondly, questionnaire was designed to collect data from the university librarian; the librarian in-charge of the IR (System Librarian) in the University Library. and the System manager from the university's ICT directorate. Thirdly, the librarian in-charge of the IR in AE-FUNAI library was engaged in an interview to collect other detailed information relating to policy statements and finally, the Researcher personally accessed the IR types and volumes. The quantitative and qualitative data collected were analyzed by tables, charts, and percentages where necessary,

4.0 Presentation of Data

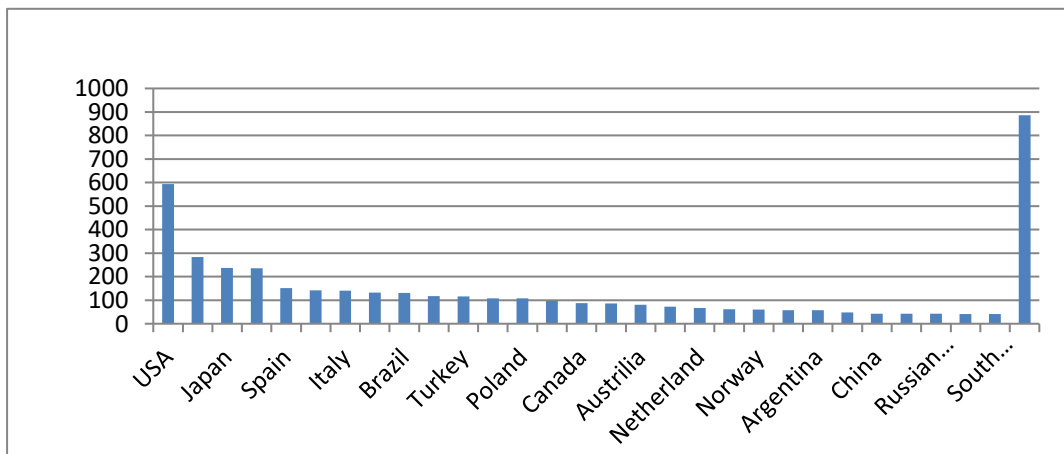
Research question 1.

How far has AE-FUNAI gone in the development of IR?

OpenDOAR 2019 repositories by Country

USA	593
Uk	283
Japan	237
Germany	236
Spain	152
France	142
Italy	141

Peru	132
Brazil	131
Croatia	118
Turkey	116
Indonesia	108
Poland	108
Ukraine	97
Canada	87
India	86
Austrilia	81
Columbia	72
Netherland	67
Taiwan	61
Norway	60
Portugal	58
Argentina	57
Sweden	48
China	43
Mexico	43
Russian Federation	43
Hungary	41
South Africa	41
Other	886



Source: Sherpa (2019)

Figure 1: OpenDOAR Institutional repository by countries

FURA: Institutional Repository

There shall be a Research Archive named FURA (FUNAI Research Archive), to serve as the Institutional Repository for all academic publications of Federal University, Ndufu-Alike, Ikwo. (AE-FUNAI, 2016)

The above figure 1 and the follow up data show that AE-FUNAI is not listed in OpenDOAR database but has built an institutional repository known as FURA.

Research Question 2:

What types of contents are submitted to the IR of AE-FUNAI?

Table 3: AE-FUNAI IR Content

S/No	Content	Volume	Percentage
	Pre print of articles or research reports submitted for publishing the text of journals articles accepted for publication.	17	4.23
2	Revised text of published work with comments from academic readers	23	5.72
3	Conference papers.	10	2.49
4	Teaching materials.	112	27.9
5	Student’s projects..	195	48.51
6	Doctoral thesis and dissertations	10	2.72
7	Database resulting from research projects	00	0
8	Committee papers, administrative papers	27	6.71
9	Computer software work of art	00	0
10	Photographs and video recordings.	00	0
11	Inaugural lectures	08	2.00
	Total	402	100

Research Question 3:

What type of software is used to manage the IR?

AE-FUNAI Research Archive or Institutional Repository (AE-FURA) is supported by Dspace software. (DSpace is a platform that allows you to capture items in any format — in text, video, audio, and data. It distributes it over the web. It indexes your work, so users can search and retrieve your items.) It preserves your digital work over the long term. DSpace provides a way to manage your research materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time.

It gives access to academic outputs created by AE-FUNAI staff and researchers. Where available, AE-FURA contains open access full text of unpublished works (pre-prints) and the author’s version of published works (post-prints). FURA is located at <http://dspace.funai.edu.ng/xmlui/>- it has a well-designed interface and is easy to use. FURA is open to anyone to search, however, only FUNAI staff and researchers can contribute material. (AE-FUNAI, 2016)

Research Question 4:

What are the digital preservation strategies to guide long and short terms preservation of the content in the IR?

Table 4: Digital preservation strategies

S/No	Item	VHE	HE	NIU	LE	VLE
1	Data redundancy			✓		
2	emulation and migration			✓		
3	Creation of metadata	✓				

Key: VHE=Very High Extent, HE=High Extent, NIU=Not in Use, LE=Low Extent
VLE= very Low Extent

The ticked scales show that the respondents collectively agreed on them accordingly. So the above table shows that creation of metadata is the sole strategy in use in preservation of data in the university IR

Research Question 5:

What are the challenges encountered in developing the IR?

Table 5

S/No	Items	SA	A	D	SD
1	They affect the balance of institutional power as some departments proceed faster than the others.				✓
2	They rely on unproven methods for long term digital preservation			✓	
3	They may needs quick wins to sustain institutional support.		✓		
4	Initial costs may be high as contributors perceive high risks and duplicate effort to reduce them.	✓			
5	Absence of a well defined institutional policy is a serious constraint for IR development in academic libraries.	✓			
6	IR being a new development in academic libraries, there is serious lack of IR expertise	✓			
7	The management and the authors concerned about forms a serious bottleneck in building the content of an I.R.	✓			
8	Allocation of insufficient funds for IR	✓			
9	Apathy of authors towards time consuming and lengthy deposition procedure.	✓			
10	Absence of appropriate literacy program		✓		

Table 5 shows the accepted challenges as ticked by all the respondents as major factors militating against operational efficiency and effectiveness of the university's IR.

5.0 Data Analysis and discussion of results

The derived list of countries listed in openDOAR and figure 1 indicate that there is no country in Africa let alone the universities were mentioned. The implication is that Alex Ekwueme Federal University (AE-FUNAI) is not in OpenDOAR database. This proves why universities in Nigeria have low global recognitions as the research works of their academics are not globally accessed as to establishing their worth and applicability. In the case of AE-FUNAI, it calls for concern and serious attention if she is to realize her vision of being 'world class' university. The obvious is that the essence of open access IR is to improve an institution's visibility globally. On the side, the follow up data, prove that AE-FUNAI has built an IR known as FURA.

On the types of contents that are submitted to the IR of AE-FUNAI which form research question 2, table 3 shows that the highest volume of the content of the physical IR of the university which is 195 came from the undergraduate project works, followed by teaching materials 112 and 23 of revised text of published work with comments from academic readers. Others are: Committee/administrative papers- 20; Pre print of articles and research reports submitted for publishing and the text of journals articles accepted for publication and published.-17 titles; conference papers-10, Doctoral thesis and dissertations.10 and inaugural lectures -8 . From the above analysis, one can deduce that the contents of AE-FUNAI institutional repository include: undergraduate project works; teaching materials; revised text of published work with comments from academic readers; committee/administrative papers; Pre print of articles and research reports submitted for publishing and the text of journals articles accepted for publication and published; conference papers, doctoral thesis and dissertations. and inaugural lectures.

AE-FUNAI institutional repository (IR) is powered by DSpace software (AE-FUNAI 2016). The observation of the researcher is that at the time of this report, the site was out of use.. This state of the FURA is no doubt a dent on the wheel of progress for an institution whose vision is to be 'world class' university.

Table 4 shows that only Creation of metadata (that is much information as possible is gathered when they are created) is in use for digital preservation strategy while Data redundancy (making sure there are many copies of important files.) and

emulation and migration (Emulation involves using a program that imitates the original, obsolete hardware or software to render a digital object. and in emulation, the original bit stream (the information that comprises the file) is saved and not to be use, have not applied. The University Librarian and System librarian in an interview revealed that the other .digital

preservation strategies will be incorporated as time goes on. The above therefore provides the answer to research question 4

Table 5, shows the various challenges that have hindered the existence and building of AE-FUNAI institutional repository also known as FURA. The respondents (University Librarian, System Librarian and System Manager) agreed that the challenges facing FURA or institutional repository existence and total development include: high cost of running the system; absence of a well defined institutional policy for IR development in the university; IR being a new development in academic libraries, there is serious lack of IR expertise; the management and the authors concerned about forms a serious bottleneck in building the content of an I.R; allocation of insufficient funds for IR, apathy of authors towards time consuming and lengthy deposition procedure and absence of appropriate literacy program.

The above challenges corroborated some of the observations of the researcher as it was noticed that there is this lack of synergy between the university library and the institute's directorate of ICT as both seem to lack the fore-sight to make the IR work optimally. There is this indicator that the university management does not live up to expectations in the area of fund release in which case, the system operation suffers tremendous set back.

It was also observed as indicated that there is no strong policy enforcing the academic into submitting their unpublished and published works. The situation is that most lecturers prefer to have their works published in 'Google Scholar' and Search Gate sites as they assume that makes them more visible in an era of 'publish or you perish' based promotion and recognition. The situation is even worse by the fact that most staff publish without using the university's personalized e-mail address for communication and identifications. Another ugly situation is that most lecturers are not even aware of the existence of FURA. .

5.1 Conclusion and Recommendations

A synthesis of data collected through questionnaires, observations and interviews exposed one fact and that is: the University IR under the name FURA is in existence but at time of this research is non-functional as efforts by the researcher to login were greeted with 'sorry, the site is temporary unavailable'. To this end, one may deduce that the electronic IR as projected by the university exists only on paper and not in practice for now. The truth is that institutional repositories are essential tool for academic institutions. It fulfils number of roles in academic institutions which AE-FUNAI is one. Open access repositories would broaden the usage. Inasmuch as Knowledge may be expensive to generate, it should not be expensive to use. AE-FUNAI library needs to take positive initiation in developing the institutional repository of the university in order to widely disseminate the intellectual output of the institution. In the competitive education market, institutional repositories provide a platform on which a university can showcase its higher education and this no doubt, is a window for AE-FUNAI to market her academic prowess and intellectual sagacity of her academics. It is pertinent to state that formulating collection policy, standardization of bibliographic details, management financial and moral support and persuading faculty members to deposit their

publications were the major challenges observed in this study. Success of institutional repository depends on the willingness of authors to deposit their work. Librarians need to continue to educate them about the importance of institutional repository. Its maintenance must be an institutional and university management sole responsibility. In the candid opinion of the researcher, an institution that has an academic staff strength of 539, student population of over 5200 and has graduated 1348 students in the past four years with a total volume of 402 physical IR has done abysmally poor. From the observations of the researcher, this may be attributed to lack of commitment on the part of the university management in general and the university librarian in particular on whose shoulder falls the responsibility and duty to build and maintain an IR for the university. There is also this lack of commitment on the part of management and the directorate of ICT of the university

In view of the above, the researcher is of the opinion that the university should holistically apply the under stated remedies if her vision of being a world class university is to be realized or stay in the dungeon and remain a paper assumed world class university:

- **The University management** should come up with strong policy which will make compulsory and mandatory for all academic staff of the institution deposit both soft and hard copies of their published works with the university's system/IR librarian. If possible, making the policy one of the promotion criteria for promotion to the next rank or position;
- Management should as a matter of responsibility, encourage and sponsor staff trainings in this area for proper management of both the physical and electronic aspect of the IR. As this factor remains a major challenge in the development; functionality, smooth and effective running of the system (see table 3) as it was also observed that both the System Librarian and the Directorate of Information and Communication Technology (ICT) staff of the university do not possess the pre-requisite training to manage such an all important academic system;
- The University management, should realize that it is her sole obligation to provide and release fund as well as monitor the development and enforcement of the formulated policy toward the effective management of the IR knowing full well, that the IR is the mirror with which the outside world sees the University;
- The obvious is that no IR can function optimally in this digital world without efficient and effective internet connectivity. To this end, it behoves the ICT directorate with the support of the University management to ensure 24 hours in 7 days internet connectivity backed up by uninterruptible power supply;
- There should be appropriate literacy program as to get rid of apathy of authors towards time consuming and lengthy deposition procedure as well as the needs and academic importance of having their research works deposited in IR,
- The university management should ensure that every academic staff of the university is issued the personalized university e-mail address by the directorate of ICT of the institute as well as enforce the compliance as the only e-address that must be used by every staff in their publications. When applied will doubt boost the image of the university and also enhance her global visibility,

- It is not a bad idea to have lecturers works published in ‘Google Scholar and Search Gate after all, Google Scholar and Search Gate account for large percentage of referral traffic to most journals but management must stipulate and ensure that the institution has a preferred one so that during global assessment of universities, the university will obtain a fair and a desirable ranking in the comity of universities.
- There should be this synergy between the university library and the directorate of ICT if the goal of having a functional and ever effective FURA is to be achieved. Let it be known that when people work as a team, everyone achieves much with less risk.
- Finally, the university librarian with the support of the university management should endeavor to see AE-FUNAI listed in OpenDOAR database and by so doing writing their name in gold as the first West African university to be listed.

References

- Anenene, E. E, Alegbeleye, G. B, & Oyewole, O (2017). Factors Contributing to the Adoption of Institutional Repositories in Universities in South-West Nigeria: Perspectives of Library Staff. *Library Philosophy and Practice (e-journal)*.1508. Retrieved from <http://digitalcommons.unl.edu/libphilprac/1508>.
- Adewumi, A.O & Ikhu-Omorogbe, N (2016). Institutional repositories: features, architecture, design and implementation. *Journal of Computing*, 2(8); 2-10. Available at www.journalofcomputing.org
- Baro, E.E., & Otiode, P.G. (2014). Electronic Theses and Dissertations and Institutional Repositories: Roadmap to Research Visibility in Africa. *Preservation, Digital Technology and Culture*, 43 (3), 114-126.
- Center for World University Rankings (CWUR) (2018) World University Rankings. Available at: www.CWUR.org.
- Ezeani, C.N. & Ezema, I.J. (2011). Digitizing institutional research output of University of Nigeria, Nsukka. *Library Philosophy and Practice (e-Journal)*, Paper 565, Retrieved from <http://www.webpages.uidaho.edu/ezeani~ezema/-sheela.pdf>
- Ezema, I. J.,& Ugwu, C. (2013). Electronic theses and dissertations in Nigeria University libraries: Status, challenges, and strategies. *The Electronic Library*, 31(4), 493–507.
- Grundy, P. (2017). World University Rankings 2015-2016 Methodology. www.timeshighereducation.com/news/ranking-methodology-2016
- Lynch, C. (2003). Institutional repositories: essential infrastructure for scholarship in the digital age. *Portal: Libraries and the Academy*, 3(2), 327-336.
- National Universities Commission (NUC) (2018). Nigerian university system Statistical digest 2017. Abuja: National Universities Commission
- National Universities Commission (NUC) (2007). Manual of Accreditation Procedures for Academic Programmes in Nigerian Universities (MAP), Abuja: National Universities Commission

New World Encyclopedia (2018). Institutional repository.
<http://www.newworldencyclopedia.org/entry/institutional-repository>
Retrieved on September 10, 2019

Nworgu, B.C (2015). *Educational research basic issues and methodology*.
Nsukka: University Trust Publishers

Omeluzor, S. U. (2014) Institutional repository (IR) awareness and willingness of faculty staff to deposit research work: a study of faculty staff in selected public and private universities in Nigeria. *Open Access Library Journal* 1: e1139. Available at: <http://dx.doi.org/10.4236/oalib.1101139>

OpenDoar, (2018). Directory of open access repositories. Retrieved from
www.opendoar.org/

Prabhakar, S.V.R & Manjula-Rani, S.V (2018), Benefits and perspective of institutional repositories in academic libraries. *Scholarly Research Journal for Humanity Science and English Language*, 5(25), 6904 - 6909

Sherpa (2018). OpenDOAR. Available at www.jisc.ac.uk/opendoar-sherpa.htm

Shoeb, Z.H. (2010). Developing an institutional repository at a private university in Bangladesh. *OCLC Systems & Services: International Digital Library Perspective*, 26 (3), 198-213.

UniRank, (2018). Top 200 Universities in Africa. Retrieved from www.4icu.org/top-universities-in-africa/.

University of Nigeria (UNN) (2019). Institutional repository. Available at:
<http://www.unn.edu.ng/libraries/institutional-repository/> accessed on September 10, 2019