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Impact of Institutional Repository Practices on Lecturers' Publications Output and Online Visibility in Universities in South-East, Nigeria (2010 – 2023)

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Abstract

This research examined the impact of institutional repository policies and practices on lecturers' publications output and online visibility in Universities in the Southern region of Nigeria. Based on 5-point research objectives, both ex-post facto and exploratory survey research designs were adopted to investigate a sample of 1,122 respondents, whilst using purposive and simple random sampling techniques in selecting the respondents. A combination of questionnaire, interview and checklist were used to collect data. Findings reveal that Thesis and Dissertations were the main information resources found in the repositories, but also extends to few hard copies and e-versions of textbooks and journals. Production of abstracts, compulsory submission of thesis and dissertations by students, Postgraduate schools' certification of thesis and dissertations and test for plagiarism were some of the practices adopted for the institutional repositories. Policy framework covered such areas like depositions, practices, administration, retention, linkages and use. Findings also reveal that research output of lecturers and their online visibility because of use of IR were low. The research concludes that while IR has become huge asset for research output and online visibility of the lecturers, efforts should be geared towards ensuring rapid and sustainable development within the universities. It recommends amongst others the adoption of IR as criteria for degree program accreditation, ranking, and dedication of grants to the universities for IR establishment.

Keywords: Institutional repository, Policy Framework, Practices, Publications Output, Online Visibility.

1.1 Introduction

An emerging trend in university libraries in Nigeria is the issue of institutional repositories (IRs). An institutional repository could be viewed as a digital archive that could provide the platform where the universities can conserve or preserve their intellectual output. University-based institutional repository is a set of services that a university offers to the members of its community for the

management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution (Lynch, 2023; Ebewalete & Rehagwa, 2022)

The IRs could, in the opinion of Anene

et al. (2017) contain thesis, dissertations, projects, course notes, seminar papers, conference proceedings, administrative documents, learning objects and other forms of grey literature. One of the key criteria that are used to measure the quality of a university is the quality and quantity of research output. A situation where the totality of the research output emanating from a particular university could not be ascertained will make it difficult to evaluate the university output and could also impede the collation and onward transmission of the research that can benefit different segments of the society. This reveals the need for the establishment of institutional repository policy framework such as deposition policy, digital preservation policy, and copyright policy formulated to guide the development of IRs. Omeluzor (2014) states that both institutions and contributors benefit from IR, because it can serve as tangible indicator of an institution's quality, its visibility, prestige and public value; as well as enhance learning, online teaching and research especially in showcasing a university's intellectual capital to a whole lot of scholars.

Just few years ago, universities in Nigeria started to heed to the call made by the National Universities Commission (NUC) urging academic libraries to provide access to both print and electronic resources especially those generated within the university to increase access to information resources and visibility of their institutions, as a measure of prestige and recognition internationally (NUC 2017). This is because the idea of an institutional repository is a current trend in tertiary institutions in Nigeria 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. It is sad to note that out of the entire NUC approved universities in Nigeria, totaling above one hundred and fifty in number (NUC, 2021), only 15 universities have their presence in, for

example, Open DOAR (OpenDoar, 2017). When viewed from the point that this source is about the most authoritative directory of academic open access repositories worldwide, this becomes reasonably worrisome. Perhaps, Nigerian universities have preponderantly not registered their presence in online directories of repositories such as OpenDoar, due to their lack of visibility orchestrated by having not created institutional repositories and perhaps, the accompanying ill-developed policy frameworks to showcase their research power to the world.

However, it is observed that part of the challenges is that many universities in Nigeria may not have the required repository policy framework to guide their institutional repository activities. Policy is a regulator, it could shape the activities of the repository, it also has the capacity to open up the university and her activities, streamline sources and modes of entry of data, re-align programme content and shape the research focus of academics in the university. With institutional repository policy framework, universities will be in a better position to regulate their research outcomes and make it available to the global community in a more effective and dynamic manner. But whether the universities in the South-East and South-South zones of Nigeria have institutional repository policy frameworks and how they are used to organize their repositories including lecturers research output and online visibility, remain the main focus of this research.

Institutional repository has become one of the current issues in librarianship globally. This is because institutional repository provides additional information resources that enhance research output and visibility of academics, including promoting institutional prestige and recognition. As a result, many scholars have carried out research investigations in many parts of the globe on the existence, type of resources deposited and usefulness of institutional repository to the academia, (Adam

& Kaur, 2019; Ashikuzzaman, 2023). In Nigeria, many research investigations have been carried out on institutional repository. But those research works have been selective in the choice of universities investigated, or on the geo-political zone of the country or even limited on issues of focus. None has investigated institutional repository in the entire South-East and South-South geo-political zones of Nigeria in one combined study by exploring institutional repository policy framework and practices as they affect research output and online visibility of lecturers, Ukwuoma and Okafor, 2017; Onwubiko, 2020; Baro & Nwabueze-Echedom, 2022; Akinola, Olagoke & Opawale, 2022). There is therefore observable neglect resulting on unexplainable impact of institutional repository policy framework and practices on the research output and online visibility of university lecturers in the two zones of Nigeria. The implication of this neglect creates a situation that breeds speculations and guesswork. It is this unexplainable institutional repository framework and practices as they affect research output and online visibility of lecturers in universities in the South-East and South-South Geo-political zones of Nigeria that motivated this research.

1.2 Objectives of the study

The main objective of this study is to bring to light the various institutional repository policy frameworks and practices in university libraries in the South-East and South-South Zones of Nigeria and their impacts on the publications output and online visibility of academics in those institutions.

The specific objectives are to:

- i. identify the university libraries in the South-East and South-South Zones of Nigeria that have developed institutional repositories and ascertain the practices with their day-to-day administration;

- ii. find out the policy framework guiding the use of, and deposit of publications in the IRs by lecturers;
- iii. ascertain the impact of use of IR on research and publications output of academics in universities in South-East and South-South Zones of Nigeria, and,
- iv. establish the role played by the universities' institutional repository policies and practices on the online visibility of the university lecturers' publications in the Zones under study.

2.1 Literature Review

Institutional repository has become one of the building blocks of university libraries' collections. Many university libraries are eagerly focusing on establishing institutional repositories because institutional repositories are viewed as one of the factors that promote academic research and productivity as well as enhance online visibility of both the university as a cooperate entity and lecturers, (Akinola *et al*, 2022)

According to Vermurugan (2010), institutional repository (IR) consists of formally organized and managed collection of digital contents generated by faculty, staff and students in an institution. The content of these repositories can be made available for assimilation with on-campus library, course management systems and can also be made available to colleges and students in other institutions, including the public. As a result, institutional repositories have become powerful tools of information for educationists whether online or offline basis, (Lynch, 2003) remarks that IR involves both long-term and short-term modalities for collection and preservation. There are five elements of an institutional repository. They include the fact that institutional repository is a product of research and intellectual productivity; is institution-based; can be digital or hardcopy; is preserved for posterity and consultation and is meant to be disseminated.

Ashikuzzaman (2023) posits that institutional repository is a web-based database (repository) of scholarly material which is institutionally defined (as opposed to a subject-based repository). The author identifies the following attributes of an institutional repository as accumulative and perpetual (a collection of records), open and interoperable using Open Access Initiative (OAI) compliant software; collects, stores and disseminates (that is, communicates to those who are in need of it). Henry and Anderson (2005) identify six characteristics of institutional repository in terms of containing content, usually deposited by the owner of the intellectual product, repository architecture manages content as well as metadata, offers a minimum set of basic services, must be sustainable and be trusted, well developed and well managed.

The major aim of institutional repository policy and practice is to enhance the speed of institutional adoption by providing practical assistance and advice. It emphasizes operational issues that have to do with installation, implementation and deployment of institutional repositories, within a library. It also focuses on acquiring published and unpublished information resources and makes them available to the clients as the demand arises, including how to access them online (Vermurugan, 2010). Forster and Gibbions (2005) identify those prerequisites that could make institutional repositories work in faculties and institution wide. The issues include but not limited to understanding faculty work practices, controlling security of materials and sound working environment. It may also include working with co-authors, sound organization and policy framework.

Scholars have shown increased interest on institutional repositories. This is manifested in the number of research outcomes within and outside Nigeria. For instance, Omeluzor (2014) examined institutional repository's awareness and willingness of faculty staff to

deposit research work, by focusing on a sample of 170 randomly selected academic staff across selected private and public universities in Nigeria. The research adopted purposive sampling technique to investigate two universities (one Private and one Public) within the faculties of those universities. Finding reveals that majority of the respondents (52%) in private universities and 36% in public universities were aware of IR while 62% and 44% of the respondents in the private and public universities respectively, stated that they had published 1-10 research publications using materials from IR. In a similar research, Adam and Kaur (2019), examined evidence of the practice of institutional repository in Nigeria, in research which adopted exploratory research design to investigate, analyze and describe the practice of IRs in Nigeria. It highlighted the number of IRs registered in Nigeria with directory of open access repository (open DOAR) and registry of open access repositories (ROAR) in Nigeria. The research revealed that there are 25 IRs online from Nigeria while only 23 were registered on both open DOAR and ROAR as 16 out of the 25 were found to be active.

The finding of the research by Anene and Ozor (2020) on institutional repository development in Nigeria is quite exciting. The paper reveals that institutional repository is gaining greater consciousness and desire among universities in Nigeria as many universities see IR as one of the measures to increase academic productivity and visibility. The paper also reveals that IR enhances scholars' collaboration and communication, online visibility and stimulates innovation. Ebiwolate, Rehgagwa and Idjal's (2022) investigation agrees with Anene and Ozor on the increasing tendencies of university libraries to cue into the institutional repository movement but adds that the policy framework has been one of the areas that need to be effectively streamlined. According to their research, most of their institutional repository

policy frameworks were in the areas of deposition of publications including type of digital preservation policy and copyright issues. Policy relating to access, dissemination and use has been scanty and non-existent in many universities. This is the revelation of the research by Nnadozie and Chukwueke (2018), who examined institutional repository as platform for information provision and academic visibility for members of the Nigerian university community. According to the authors, with institutional repository, lecturers could have unhindered access to a variety of sources for their research and publications, which would ultimately facilitate their academic productivity and career growth. In the same vein, Onwubiko (2020) reveals that repository policies in many universities like the Alex Ekwueme Federal University Ndufu Alike-Ikwo, has been at its embryonic stage, especially policy relating to practice, content, digital policy and accompanying preservation strategies.

Baro and Nwabueze-Echedom (2022) looked at an evaluation of institutional repository development in African universities. The research adopted online questionnaire and institutional repository site to collect data from 134 university libraries in the English-speaking countries in Africa. Finding shows that majority of the institutional repositories contain high numbers of thesis and dissertations, followed by journal articles and conference and workshop papers. Ukwuoma and Okafor (2017) reveal that University of Nigeria, Nsukka and Federal University of Akure (FUT) have shown exemplary exhibition in the aspect of institutional repository. According to their research, UNN has 21,461 contents containing a variety of materials including journal articles, thesis and dissertations. This was a product of their investigation on institutional repository in Nigerian universities which examined the

trend and developments. The focus was acquisition and management of contents of five Nigerian universities' institutional repositories available on open DOAR. Data were collected using interview, observation and Checklist. Ifijeh, Adebayo Izuagbe and Olawoyin (2018) were concerned on who manages university institutional repositories and libraries in Nigeria by interrogating the nexus. It was exploratory research which reveals that many institutional repositories in Nigeria are administered by librarians and that IRs now hold great potentials for scholarly publications and collections. Oberhiri-Orumah & Baro (2022) adduce six reasons for institutions to embark on the establishment of institutional repositories. They are providing access to unpublished but nonetheless valuable research of faculty, researchers, staff and students; providing the principles of open access by promoting opportunities for faculties self-archiving; preserving and disseminating a wide variety of contents beyond traditional scholarly articles including databases, learning objects, electronic thesis and dissertations, audio-visual contents and presentations; helping universities to fulfill obligations to make publicly funded or non-profit funded research available on an open access basis. Others include encouraging access and sharing among disciplines and institutes; allowing universities to capture digital learning, e-learning courses ware so they can expand on existing programs.

From the foregoing, it is seen that IR has become the new normal in universities towards promoting universities' overall rating, academic research, lecturers research output and online visibility. Both position papers and empirical studies have shown that IR holds huge potentials in the universities today. These universities who are yet to cue into this IR movement should quickly establish their own IRs for the good of the university and its quality academic content,

scholarly communication and collaboration.

3.1 Research Method

This research adopted both ex-post facto and exploratory research designs. Ex-post facto was used as a confirmatory tool to ascertain the existence of institutional repositories and the kinds of information materials found in them. Exploratory survey research design was adopted because the number of universities is many and spread across two big geo-political zones in Nigeria – the South-East and the South-South. In addition, the issues involving lecturers' research output and online visibility are current issues.

The study involved a total of 1,122 respondents categorized into three as follows: Category one involved the 11 university librarians of the Federal and State universities that have established institutional repositories; Category two involved 11 unit heads of each of the 11 universities that have established institutional repositories; and, Category three involved One Hundred Lecturers (100) selected randomly from each of the eleven universities. In all, the sample size is 1,122.

A combination of questionnaire, interview schedule and Checklist were used to collect data. There were two sets of the questionnaire. The first set was administered on the 11 unit heads of the university libraries that have established IR to solicit information on the duration of IR existence in their universities, general administration and policy framework with regards to depositions, types of materials, practices, linkages and use. The second set was administered on the lecturers covering such items like research output and online visibility. Interview was conducted on the 11 university librarians of both the Federal and State universities under study. The interview on the librarians was to give further insight into the policy framework, practices and plans for future expansion. Checklist was also adopted to establish the type of materials

available in the IR.

Apart from all these, preliminary investigation coupled with Web metric survey reveal that out of 30 public universities in the two zones, only 11 universities (whether federal or state) have established IR. As a result of this, data collection and analysis focused on the identified universities that have established institutional repository and their lecturers to establish the objectives of this investigation. Frequency tables and simple percentages were used to analyze data and to convey the findings of this study. In all, there was discussion of findings, conclusions and recommendations.

4.1 Data Analysis and Discussion of Findings

Data analysis as shown on Table 1 indicates that the 11 universities that have established institutional repositories have different periods of existence. At the time of conducting this research which covers 2010 – 2023, none of them had existed for more than 10 years. Table 1 also shows existence and duration of institutional repositories, and type of information resources available. These are products of the questionnaire on the heads of the repository units of the university libraries, reinforced by the interview on the university librarians. Checklist is also used to ascertain the information resources in the IRs. In all, there was 100% response rate from both the 11 heads of units of the repositories and university librarians. Findings as shown on Table 1 reveal that out of the eleven (11) universities that have institutional repositories, 8 or 72.7% were federal universities while 3 or 27.3% were state universities. The federal universities that have established institutional repositories are Universities of Nigeria Nsukka, Benin, Port Harcourt, Federal University of Technology Owerri, University of Uyo, Nnamdi Azikiwe University, Awka, Michael Okpara University of Agriculture Umudike, and Alex Ekwueme Federal University, Alike-Ikwo. The three

state universities are Rivers State University, Nkpolu Oroworukwo, Enugu State University of Science and Technology, and Delta State University, Abraka.

On the duration of existence of the IR in the university libraries, there were differences on the periods of their existence. None of them had existed for up to ten years. For instance, University of Nigeria Nsukka institutional repository is the oldest and had existed for up to 8 years. Universities of Benin, Port Harcourt, Federal University of Technology Owerri, Rives State University, Port Harcourt and Enugu State University of Science and Technology have existed for up to 5 years. University of Uyo, Michael Okpara University of Agriculture Umudike and Delta State University, Abraka, had existed for up to 4 years while Alex Ekwueme Federal University, Alike-Ikwo and Nnamdi Azikiwe University, Awka, had existed for up to 3 years respectively.

On the type of materials deposited at the institutional repositories, almost all the libraries that had established institutional repositories contained mainly thesis and

dissertations produced by the candidates that graduated from their post graduate programmes. It is only University of Nigeria Nsukka, University of Benin, and Federal University of Technology Owerri that contained journal articles deposited by lecturers as well as e-versions of their textbooks while Alex Ekwueme Federal University contained no e-versions of textbooks but a few journal articles in addition to thesis and dissertations. The finding of the study aligns with the views of Omeluzor (2014) that the concept of institutional repository is still at its embryonic stage in Nigerian universities. The research also reveals that only 36% of public universities in Nigeria were aware of Institutional Repository and its potency in research. It also agrees with the position of Adam and Kaur (2019), Oberhiri-Orumah & Baro (2022) that IR is still new in Nigeria as most of them are still unwilling to cue into its practices. However, Anene and Ozor (2020) are excited that the issue of IR is cutting across many universities and that in no distant time; many university libraries will be IR compliant.

Table 1: Existence of Institutional Repositories and Type of Information Resources Available in Them

S/N	Universities	Existence of Repository	Duration of Existence	Type of Information Materials Available in Them
1.	University of Nigeria, Nsukka	Yes	1 - 8yrs	Thesis, Dissertations, journal articles by lecturers, electronic textbook version
2.	University of Benin	Yes	3 - 5yrs	Thesis, Dissertations, journal articles by lecturers
3.	University of Port Harcourt	Yes	3 - 5yrs	Thesis, Dissertations.
4.	Federal University of Technology, Owerri	Yes	3 – 5yrs	Thesis, Dissertations, journal articles by lecturers, electronic textbook version
5.	University of Uyo	Yes	2 – 4yrs	Thesis & Dissertations.

6.	Nnamdi Azikiwe University, Awka	Yes	1 – 3yrs	Thesis & Dissertations.
7.	Michael Okpara University of Agriculture, Umudike	Yes	1 – 4yrs	Thesis & Dissertations.
8.	Alex Ekwueme Federal University, Alike Ikwo	Yes	1 – 3yrs	Thesis & Dissertations, Journal articles.
9.	Rivers State University Nkpolu-Ororowukwo	Yes	3 – 5yrs	Thesis & Dissertations.
10.	Enugu State University of Science & Technology	Yes	3 – 5yrs	Thesis & Dissertations.
11.	Delta State University, Abraka	Yes	2 – 4yrs	Thesis & Dissertations.

The institutional repository policy frameworks covered by this investigation are in the areas of deposition, administration, awareness, practices, access, use, daily operations, regulation and linkages. All these are presented on Tables 2, 3 and 4.

Findings as shown on Table 2 reveal that there exist different policy frameworks in the deposition of materials in the universities that have developed institutional repositories. The policy variations may not be unconnected with the type of materials deposited in their respective repositories. For instance, in almost all the universities, the postgraduate school as a matter of policy certified hard copies of the Thesis and Dissertations before mandating candidates to compulsorily submit e-versions (soft copies) to the university IR. The same compulsory submission policy is adopted by UNN, FUTO, NAU and AE-FUNAI, in the deposition of journal articles by lecturers to the IR. The university librarians confirmed that they applied some subtle pressure on some lecturers to submit their journal articles to the IR. Due to the existence of the submission policy, all postgraduate students are aware that both hard and soft copies of their Thesis and Dissertations must be submitted to the PG school and the university IR.

The universities were seen to have adopted different policy frameworks and strategies to alert the university community on the availability of information materials at

the IR. Apart from the Virtual Private Network (VPN) adopted by UNN, UNIBEN, UNIPORT, FUTO, and NAU, almost all other universities adopted a combination of talk shows, SMS/Email messages, hand bills, circulars, notice boards and even personal letters. Some lecturers who visited the IR also helped to alert their colleagues on the resources in the IR. Some of the university librarians interviewed confirmed that the multifaceted approaches on the creation of awareness have enhanced awareness and appreciation of IR in their universities among the academic staff.

On daily operations of the library, all the universities opened for use on daily basis. UNN, UNIPORT, FUTO, MOUAU and AE-FUNAI opened on daily basis and on weekends on specified periods. This operation policy is because the IR is mainly used on visit to the library by the academic staff, because the universities were not linked online for access and use. These revelations agree with the research outcomes of Anene *et al.* (2017), Osman and Nampombe, (2023), Maddis and Sapinho (2023), that a major issue in the development and sustainability of IR in academic libraries is anchored on policy matters, which seem to create ambiguity in defining procedures, standards and uniformity in the deposition, retention and use of IR.

Table 2: Policy on Deposition, Awareness Creation and Daily Operations

S/N	University	Deposition Policy	Creation of Awareness Policy	Daily Operations Policy
1.	University of Nigeria, Nsukka (UNN)	PG School certifies Thesis & Dissertations before e-version are sent to the IR, compulsory submission of journal articles by lecturers	Uses talk shows, staff visit to lecturers, use of SMS/email message & Virtual Private Network (VPN)	Operates daily, weekdays and weekends on specified periods.
2.	University of Benin (UNIBEN)	Compulsory submission of e-version of Thesis & Dissertations by students	Circular, notice boards, SMS/Email messages, talk shows, handbills, and Virtual Private Network (VPN)	Operates daily on weekdays except weekends.
3.	University of Port Harcourt (UNIPORT)	PG Board approves Thesis & Dissertations and mandates students for compulsory submission of e-version to IR	SMS/Emails, circulars, hand bills visit to lecturers Virtual Private Network (VPN)	Daily on weekdays on specified periods.
4.	Federal University of Technology, Owerri (FUTO)	PG School certifies Thesis & Dissertations & sends e-version to the IR; compulsory submission of e-version of journal articles by lecturers	circulars, letters, SMS/Email, talk shows, handbills, and Virtual Private Network (VPN)	Daily including weekdays on specified periods.
5.	University of Uyo (UNIUYO)	PG certifies and sends both hard and e-versions to IR	Circulars, letters, SMS/Email, notice board, talk shows	Daily on weekdays on specified periods.
6.	Nnamdi Azikiwe University, Awka (NAU)	Compulsory submission of hard and soft of copies of Thesis & Dissertations by students; also compulsory submission of journal articles by lecturers	Staff visit to lecturers, talk show and use of Virtual Private Network (VPN)	Daily on weekdays except weekends.
7.	Michael Okpara University of Agriculture, Umudike (MOUAAU)	PG School certifies Thesis & Dissertations and sends soft and hard copies to IR	Talk shows, SMS/Email, staff visit to lecturers	Daily on weekdays except weekends.

8.	Alex Ekwueme Federal University, Alike Ikwo (AE-FUNAI)	PG School certifies Thesis & Dissertations and forwarded to IR. Journal articles are submitted by lecturer's compulsorily	SMS/Emails personal letters, circular; hand bills visit to lecturers	Daily on weekdays except weekends.
9.	Rivers State University (RST) Nkpolu-Oroworukwo	PG School certifies Thesis & Dissertations and sends soft and hard copies to IR	Circulars, talk shows, hand bills	Daily on weekdays except weekends.
10.	Enugu State University of Science and Technology (ESUT)	PG School certifies Thesis & Dissertations and forward to IR with soft copies.	Notice board, circular, SMS/Emails	Daily on weekdays
11.	Delta State University, Abraka (DELSU)	PG School certifies and forward Thesis & Dissertations in soft copy to IR	Personal letters to lecturers, notice boards.	Daily on weekdays except weekends.

Findings as shown on Table 3 reveal that in almost all the universities that have established IR, there was a trained IR staff, dedicated to the supervision and management of all matters pertaining to the information resources at the IR. Some of the IR Unit Head were also trained on ICT matters for IR services. It was the duty of the staff in-charge of IR to liaise with the lecturers in the submission of their journal articles and e-versions of their textbooks, receipt of published Thesis and Dissertations, retention and weeding activities as well as networking access and use. The university libraries that have developed IR engage in several practices to ensure quality of deposited information materials, retention and weeding standards and online specifications. These practices included carrying out plagiarism tests through TURN-IT-IN as found in UNN, UNIBEN, FUTO, UNIUYO, NAU and DELSU, and Rivers State University, or Plagiarism Checker as found in University of Port Harcourt. However, at AE-FUNAI and ESUT, no plagiarism test existed for their Thesis and

Dissertations. In all the universities, abstracts were created for all Thesis and Dissertations, while full text online publication of Thesis and Dissertations existed at UNN, UNIBEN, UNIPORT, FUTO, MOUAU, and Rivers State University. One striking feature in all the universities is that online access to materials in the IR is only possible while on campus.

Another practice carried out in the IR Units was the retention and weeding policy. At UNN, UNIPORT, UNIUYO, FUTO and Rivers State University, retention of Thesis and other publications deposited at the IR is permanent. In order words, there was no weeding policy for now. However, at NAU, Thesis and Dissertations were withdrawn after more than six years of existence at the IR. See Table 3.

Apart from the supervisory roles of university librarians in their capacity as the Heads of the university libraries, there were two other layers of regulation in most of the universities that have established IR. At UNN, MOUAU and UNIPORT, two committees existed to regulate and ensure quality,

uniformity, and standards. They were the university library-based IR Committee and the Senate Library Committee. In UNIBEN, no committee on IR existed, while at FUTO, UNIUYO, NAU, ESUT and DELSU, only

University Library-based IR Committee existed. This committee ensured the continuity and sustainability of IR in their universities.

Table 3: Policy on Administration, Practices and Regulations

S/N	Universities	Administration	Practices	Regulation
1.	University of Nigeria, Nsukka (UNN)	A trained IR staff to administer. Also, liaises with staff for journal publication	Abstract exist online, full text publication, retention is permanent, Plagiarism text exist through TURN-it in (TURN-IT-IN)	University-based IR Committee exists alongside Senate Library Committee to regulate IR operations and use
2.	University of Benin (UNIBEN)	A trained IR staff to administer	Abstract provided, online published full text, plagiarism text exists via TURN-It-In, retention is permanent	No committee exists
3.	University of Port Harcourt (UNIPORT)	A trained IR staff to administer. Also, liaises with lecturers for their publications	No abstract, online full text published, retention is permanent, plagiarism text exist via Plag Scan	Senate Library Committee as well as University Library Committee on IR exists.
4.	Federal University of Technology, Owerri (FUTO)	Staff trained for IR. Also liaises with staff for journal publication	Abstract provided, online full text published, no retention of material, plagiarism text via TURN-It-In	University Library Committee on IR exists.
5.	University of Uyo (UNIUYO)	Trained IR staff to administer. Also liaises with staff for journal publication	Abstract provided, permanent retention, plagiarism text via TURN-it in	University-based IR Committee exists.
6.	Nnamdi Azikiwe University, Awka (NAU)	Trained IR staff exists. Also meet lecturers for their publications	Abstract exists, deletion after 5-6 years. Plagiarism text via TURN-It-In	University Library Committee on IR exists.
7.	Michael Okpara University of Agriculture, Umudike (MOUAAU)	No Staff trained for IR	Abstract exist, online full text publication, permanent retention, Plagiarism text via Plag Checker	University Senate Library Committee exists.
8.	Alex Ekwueme Federal University, Alike Ikwo (AE-FUNAI)	Trained IR staff to administer, meets lecturers for publications	No Plagiarism text exist for now	Faculty IR Board, PG board.

9.	Rivers State University (RSU)	Trained staff for IR exists	Abstract exist, permanent retention, full text online, plagiarism text via TURN-It-In	University-based monitoring & appraisal Committee exists
10.	Enugu State University of Science and Technology(ESUT)	Trained staff for IR exists	Abstract exist, no policy on retention, no plagiarism text	University-based monitoring & supervision.
11.	Delta State University (DELSU)	Trained staff for IR exists	Abstract exist, plagiarism text exists	University-based monitoring & supervision.

On linkages and use, findings on Table 4 reveal that none of the institutional repositories was linked to outside database, rather university libraries have created their own Local Area Network (LAN) as found in UNN, UNIBEN, UNIPORT, UNIUYO, Rivers State University (RSU), ESUT and DELSU. Most of the universities use their university wide website to access the IR. The

universities provide LAN access codes to access the IR within the university campus. On use, university institutional repositories have open access policy which is achieved through three approaches – Use of LAN access codes, Virtual Private Network (VPN) via its password and personal visit to the IR by any user. In addition, access through the University-wide website was also possible.

Table 4: Policy on Linkage and Use

S/N	UNIVERSITIES	LINKAGE	USE
1.	University of Nigeria, Nsukka (UNN)	Local Area Network (LAN) and university website.	Open access use. Personal visit to the library IR or through the Local Area Network (LAN), or universities Virtual Private Network (VPN) via password.
2.	University of Benin (UNIBEN)	Local Area Network (LAN) and university website.	Open access use. Personal visit to the library IR or through the Local Area Network (LAN), or universities Virtual Private Network (VPN)
3.	University of Port Harcourt (UNIPORT)	Local Area Network (LAN) and university website.	Open access use. Local Area Network (LAN), and university website. VPN via password.
4.	Federal University of Technology, Owerri.(FUTO)	Local Area Network (LAN) internet, university website.	Open access. No borrowing. Library visit. Local Area Network, Internet use via password.
5.	University of Uyo (UNIUYO)	Local Area Network university website.	Open access use. Personal visit to the library, LAN, and university website. VPN via password.

6.	Nnamdi Azikiwe University, Awka (NAU)	University website Virtual Private Network (VPN)	Open access. No borrowing. University website, VPN via password.
7.	Michael Okpara University of Agriculture, Umudike (MOUAU)	University website	Open access use. Personal visit to the IR in the library, use of university website.
8.	Alex Ekwueme Federal University, Alike Ikwo.(AE-FUNAI)	University website	Open access use. Personal visit to the IR in the library, No online access.
9.	Rivers State University (RSU)	Local Area Network University website.	Open access use. Personal visit to the IR in the library. VPN and University website.
10.	Enugu State University of Science and Technology. (ESUT)	University website. Local Area Network via password, Virtual Private Network (VPN)	Open access use. Via password, Personal visit to library. University website.
11.	Delta State University, Abraka (DELSU)	Local Area Network, Virtual Private Network (VPN), University website.	Open access use. Visit to the library use of University website.

On the impact of institutional repository on Lecturers' Research Output and Online Visibility, a total of One Thousand, One Hundred lecturers (1,100) on the ratio of 100 from each of the universities that have established institutional repositories, were randomly selected across faculties in the respective universities. The response rate indicates that 985 lecturers or 89.5% duly filled and returned their copies of the questionnaire. Only 115 or 10.5% were non-response. In all, 652 (66.2%) lecturers were

males while 333 or 33.8% were female lecturers. The breakdown of the responses from the eleven universities that have established institutional repositories is shown on Table 5. The highest response 96 (8.7%) came from the Michael Okpara University of Agriculture, Umudike. This is followed by Alex Ekwueme Federal University, Alike-Ikwo and Rivers State University which recorded 95 (8.6%) respectively. The least response of 75 (6.8%) came from Delta State University, Abraka.

Table 5: Breakdown of the Distribution and Return Rate of the Questionnaire by the Lecturers

S/N	Universities	Questionnaire distributed	Number returned	%
1.	University of Nigeria, Nsukka	100	90	8.2
2.	University of Benin	100	86	7.8
3.	University of Port Harcourt	100	95	8.6

4.	Federal University of Technology, Owerri.	100	88	8.0
5.	University of Uyo	100	89	8.1
6.	Nnamdi Azikiwe University, Awka	100	87	7.9
7.	Michael Okpara University of Agriculture, Umudike	100	96	8.7
8.	Alex Ekwueme Federal University, Alike Ikwo	100	95	8.6
9.	Rivers State University, Port Harcourt	100	95	8.6
10.	Enugu State University of Science and Technology	100	89	8.1
11.	Delta State University, Abraka	100	75	6.8
	Total	1,100	985	89.5

On the use of institutional repositories by the lecturers, Table 6 shows that the use of institutional repositories among lecturers for their research activities remains substantially unimpressive as majority of them 480 (48.7%) used repository occasionally in their research matters. Even though the number of 99 (10.1%) that always used IR seemed reasonable, it has been made highly insignificant when compared with 305 (30.9%) who had never used it. This situation may not be unconnected with the young age of almost all the universities' institutional repositories as many of them are below 10 years of existence. This seems to confirm the research outcome of Omeluzor (2014) that

only 36% of faculty members of some public universities in Nigeria were aware and made use of institutional repositories for research and other publications. Even though Henry and Anderson (2005) believe that institutional repositories offer amazing variety of resources which lecturers and other academics could leverage on, this seems not to be the case with lecturers in public universities in the South-East and South-South Zones of Nigeria. It is therefore not out of place to state that the newness of the repositories in Nigeria and the availability of mainly Thesis and Dissertations as against few journal articles and textbooks, may be contributory to the unimpressive use of IR by lecturers for their research.

Table 6: Lecturers' Rate of Use of Institutional Repositories for Research due to Policy Framework

S/N	Frequency of Use	Response	Percentage (%)
a.	Always	99	10.1
b.	Once in a while	480	48.7
c.	Rarely	101	10.3
d.	Never	305	30.9
	Total	985	100

The policy framework on use and access to the IR has impacted on lecturers' publications output. Available data as shown on Table 7 reveal that majority of the lecturers (307 or 39.4%), had published one article yearly via use of institutional repository, 208 or 26.7% had published 1 – 2 articles yearly even as 77 or 9.9% of the lecturers stated that they had published 2 – 3 articles yearly. This is a good testimony for IR although 187 or 24.0% of the lecturers had not published one article in one year from the use of IR. The implication of this finding is that the rate of publication of journal articles because of the use of IR is yet to reach appreciable level. Against the backdrop that

universities' policy on use include the availability of local area network with access codes, use of private viewing point (VPN) and use through the university wide network as well as physical visit to the university IR, it is hoped that the rate of publications output of the lecturers will improve sooner or later.

Apart from publications online as a measure of lecturers' online visibility, two other indices namely attraction of research grants from any organization (whether local or international agency) and invitation to conferences were equally used to measure online visibility of lecturers.

Table 7: Rate of Publication Output Influenced by policy framework

S/N	Publications Output	Response	%
a.	No article Published	187	20.0
b.	One article Yearly	307	39.4
c.	1 – 2 articles Yearly	208	26.7
d.	2 – 3 articles Yearly	77	9.9
e.	4 – 5 articles Yearly	0	-
f.	Above 5 articles Yearly	0	-
	Total	779	100

Table 8 reveals that out of a total of 985 lecturers who filled and returned their copies of the questionnaire, only 162 representing 16.5% had attracted research grant once from international organization because of uploaded works in the institutional repository, 91 or 9.2% had attracted research grant twice locally while three times and more than four times recorded 18 (1.8%) and 12 (1.2%) respectively. A total of 207 or 21.0% had never attracted any research grant due to uploaded publications in their institutional repository. Against this backdrop, it could be said that online visibility of lecturers in the public universities in the South-East and South-

South Zones of Nigeria with respect to research grant is highly insignificant, going by the cumulative total of 283 (28.7%) of the 985 lecturers who filled and returned the copies of the questionnaire, and who stated that they had attracted research grant at whatever number (once to more than four times). With this figure, it is therefore not out-of-place to state that 702 lecturers representing 71.3% had not attracted research grant due to their uploaded work in their institutional repository, when viewed against the figure of 283 out of 985 who filled and returned their copies of the questionnaire.

Table 8: Attracted Research Grant by Lecturers because of Uploaded Publication on Institutional Repository

S/N	Research Grant	Response	Percentage
a.	Once (from international body)	162	33.1
b.	Twice (locally from TETFund)	91	18.6
c.	Three times (local)	18	3.7
d.	Four times and above (local)	12	2.5
f.	None	207	42.2
	Total	490	100

Again, when the cumulative number of 985 lecturers who filled and returned copies of the questionnaire is compared with the total of 216 (21.9%) of those who had in one time or the other been invited to a conference whether local or international, as a result of their works being uploaded in their institutional repositories, there is every reason to state that the online visibility of lecturers based on attendance to conferences in the two zones due to uploaded works in the IR is insignificant.

This may not be unconnected with the young age of most of the institutional repositories in the universities. In addition, it may be due to the fact that none of the institutional repositories is attached to any external database. This therefore calls for more concerted and proactive actions by universities towards making their repositories to be online in line with the advice of Clobridge (2010), Omeluzor (2014), and Mark Ware (2017).

Table 9: Lecturers' invitation to Conference Due to Uploaded works in the Repository

S/N	Invitation to Conference	Responses	Percentage
a.	Once	57	26.4
b.	1 – 2 times	74	34.3
c.	2 – 3 times	68	31.5
d.	3 – 4 times	11	5.1
e.	More than 4 times	6	2.8
	Total	216	100

Conclusion

Findings have shown that institutional repository practices and operations are still at its embryonic stage in most public universities in the South-East and South-South zones of Nigeria. Even though institutional repositories provide access to a variety of rich resources for research and other academic activities, many public universities in the two zones are lethargic to commence institutional repositories. It is therefore the conclusion of this study that institutional repositories should be made compulsory for all public universities and that sustainable policies are put in place to make for its continuity and viability.

The paper believes that as some public universities in the South-East and South-South Zones have shown increased willingness and plans to establish institutional repositories in their libraries, they should fine-tune their policy framework on the IR, and that NUC and TETFund should adopt IR as accreditation criterion and ranking of universities in the country. When all these are done, lecturers will have access to more local and international resources especially when the repositories are attached to online databases. This will certainly enhance more research output and online visibility of lecturers.

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