Assessment of the Impact of Nigerian Universities' Institutional Repository Policies and Practices on Lecturers' Publications Output and Online Visibility: Focus on South-East & South-South, Nigeria

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Abstract

This research examined the impact of Nigerian universities' institutional repository policies and practices on lecturers' publications output and online visibility. It covered 34 Federal and State Universities in the South-East and South-South Zones of Nigeria. The research was based on a 5-point research objectives. Both ex-post facto and exploratory survey research designs were adopted to investigate a sample of 1,145 respondents made of lecturers and practicing librarians in the university libraries. Both purposive and simple random sampling techniques were adopted in selecting the respondents. A combination of questionnaire, interview and checklist were used to collect data. Findings reveal that out of the 34 universities covered, only 11 representing 34.4% had established institutional repositories and still less than 10 years of age. Theses and Dissertations were the main information resources found in the repositories. Findings also reveal that research output of lecturers and their online visibility as a result of use of IR was low. The research concludes that while IR has become huge asset for research and online visibility of lecturers, concerted efforts be made to ensure its fast and sustainable growth among the public universities in the country. It recommends amongst others the adoption of IR as criteria for NUC accreditation exercise and ranking of universities, dedication of part of the TETFund intervention funds to universities for IR establishment.

Keywords: Institutional Repository, Online Visibility, Research Output, Policy, Practices.

1.1 Introduction

An emerging trend in university libraries in Nigeria is the issue of institutional repositories (IRs). Universities as institutions of higher learning place emphasis on research as one of the core functions apart from teaching and community services. An institutional repository could thus 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. The IRs could, in the opinion of Anene, Alegbeleye & Oyewole (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 is used to measure the quality of a university is the quality and quantity of research output. The authors contend that a 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. This reveals the need for the researches on institutional repository that can benefit different segments of the society. This also reveals the need for the establishment of institutional repository policy framework such as submission 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. Institutions benefit from IR as it serves as tangible indicator of an institution's quality, thus increasing its visibility, prestige and public value; enhances learning, online teaching and research especially in universities and presents an institution'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, urging 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 2017). This is because the idea of an institutional repository is a current theme in tertiary institutions that have seen it as necessity for making available their institutional resources, thereby increasing their visibility and better performance in the ongoing web ranking of world universities in particular. 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 OpenDOAR as at 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 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 shapes 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 have the institutional repository policy frameworks and how they are used to organize their repositories remain the main focus of this research.

1.2 Statement of the Problem

Despite the potential benefits associated with the use of institutional

repositories (IRs) by university academics, preliminary observations reveal that an appreciable number of universities in Nigeria have hardly established institutional repository and policy framework that guide practices towards ensuring adequate use, and the propagation of enhanced research and publications output amongst academics. It is worrisome that even those who may have developed IRs, often struggle to shrug off certain challenges that force them to remain oblique to the global world, in terms of effective and unobstructed visibility, due to some underlying technicalities. As a result, the modalities for the repository activities remain substantially un-decoded by academics because of a combination of suspected factors such as lack of knowledge of their existence, modalities for use, and usefulness to research efforts, online publications and requirements for their online hosting in the repositories. The resultant effects are impinged research output, and a poor visibility of publications output by Nigerian university academics, dovetailing into a low rating of the academics and their institutions on the global performance index. Given this scenarios, the state of affairs among universities in Nigeria in developing institutional repository policy frameworks and practices to foster adequate publications output amongst Nigerian academics, is the pressing issue investigated by this research.

1.3 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 its impact 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 the IR use on research and publications output of academics in universities in South-East and South-South Zones of Nigeria.

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 academic libraries, particularly 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. Many scholars have acknowledged the zeal with which institutions of higher learning are aspiring to establish institutional repositories with a purpose of showcasing productivity of their staff and improve the image of the institution. Mark-Ware (2017) 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; collect, store and disseminates (that is, communicates to those who are in need of it).

Scholars have shown increased interest on institutional repositories. 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 academic staff across selected private and public universities in Nigeria. 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. The research adopted exploratory research design to investigate, analyze and describe the practice of IRs in Nigeria.

The finding of the research by Anene and Ozor (2020) on institutional repository development in Nigeria is quite revealing. 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 of scholars and stimulates innovation. Ebiwolate, Reghagwa and Idjal's (2022) investigation agree 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 needs to be effectively streamlined.

One of the ways lecturers in universities in Nigeria can guarantee online visibility is through institutional repository platforms. This is the revelation of the research by Nnadozie and Chukwueke (2018), who examined the issues of institutional repository as platforms 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. Vermurugan (2010:18) refers to them as published research materials and unpublished research materials.

Institutional repositories have been found to be working effectively well in some universities in Nigeria. Ukwuoma and Okafor (2017) reveal that University of Nigeria, Nsukka and Federal University of Akure (FUTA) 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.

As a result of the above tenets, institutional repositories offer amazing benefits to institutions of higher learning by making it easier for faculty members to get previously scattered or restricted access materials in a single location, increasing visibility of faculty members and other scholars when research outputs are kept in the repositories. By virtue of institutional repository being often digital, it allows more and different kinds of information materials to be deposited there because institutional repositories more often than not, are housed and managed by university libraries.

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.

3.1 Research Method

This research adopted both ex-post facto and exploratory research designs. Ex-post facto was used as a confirmatory approach on 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. The study involved a total of 1,145 respondents categorized into three as follows:

Category one involved the 34 university librarians of the Federal and State universities investigated who were purposely selected; Category two involved 11 unit heads of each of the 11 universities in the two zones that have established institutional repositories; totaling forty-five (45). Category three involved One Hundred Lecturers (100) selected randomly from each

of the eleven universities that have established institutional repositories in the two zones, totaling One Thousand, One Hundred (1,100). In all, there are 15 federal universities and 19 state universities.

A combination of questionnaire, interview schedule and Checklist were used to collect data for the study. There were two sets of the questionnaire. The first set was administered on the unit heads of the 11 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. Questionnaire was administered on the lecturers by the research team and research assistants. Interview was conducted on the university librarians of both the Federal and State universities whether or not they have established institutional repository. The interview was through personal visits, phone calls and text messages. While interview on the librarians who have institutional repositories was to give further insight into the policy framework and plans for future expansion, librarians who had no institutional repository were also interviewed to ascertain plans the university library has for institutional repository programme. Checklist was also adopted to establish the type of materials available in the IR.

4.1 Data Analysis and Discussion of Findings

The data analysis is broken into two parts. The first part is based on the responses of the 340 unit heads of the 34 Federal and State Universities and the responses from the 11 heads of repository in the universities that established institutional repositories. This first part of the analysis dwelt on the existence of IR in the universities, duration of existence,

policy frame work with regards to deposition policy on the types of materials available in them, retention policy, general administration, regulation, practices, linkages and policy on access and use. The second part dwelt on the impact of IR on lecturers' publications output and online visibility.

4.2 Part One: Existence of Institutional Repository and Information Materials Available in them
Section A: Existence of Repository, Duration of Existence and Type of information

materials

Checklist and responses from the 34 heads of the 34 Federal and State universities investigated, in addition to the interview responses from the 11 unit heads of the repositories of the university Librarians formed the data for this analysis. There was one hundred percent response rate (100%) from all the heads and 34 University libraries. Table 2 shows the breakdown of the responses of the respondents on the existence of institutional repository and types of materials deposited in them.

Table 2: 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	6 - 7yrs	Thesis, Dissertations, journal articles by lecturers, electronic textbook version
2.	University of Benin	Yes	3 - 4yrs	Thesis, Dissertations, journal articles by lecturers
3.	University of Calabar	No	No	High level discussions on IR on-going
4.	University of Port Harcourt	Yes	3 - 4yrs	Thesis, Dissertations.
5.	Federal University of Technology, Owerri	Yes		Thesis, Dissertations, journal articles by lecturers, electronic textbook version
6.	University of Uyo	Yes	2 – 3yrs	Thesis & Dissertations.
7.	Nnamdi Azikiwe University, Awka	Yes	1 – 2yrs	Thesis & Dissertations.
8.	Michael Okpara University of Agriculture, Umudike	Yes	1 – 3yrs	Thesis & Dissertations.
9.	Federal University of Petroleum Resources, Effurum	No	No	There is no plan for it now. May be in the future.
10.	Alex Ekwueme Federal University, Ndufu-Alike Ikwo	Yes	1 – 2yrs	Thesis & Dissertations, Journal articles.
11.	Federal University, Otuoke	No	No	No plans for IR now
12.	Nigerian Maritime University, Okoronkoko	No	No	No plans for IR now
13.	Federal University, Ikot Abasi	No	No	No Discussions yet

14.	David Nweze Umahi University of Medical Sciences, Uburu	No	No	The University is barely one year old. No plans for IR now
15.	Admiralty University, Ibusa	No	No	The university is just taken off. No plans for IR now.
16.	Rivers State University Nkpolu-Ororowukwo	Yes	3 – 4yrs	Thesis & Dissertations.
17.	Ambrose Ali University, Ekpoma	No	No	There are high level management discussions on IR. Hopefully, in no distant time, we shall take-off.
18.	Abia State University, Uturu	No	No	High level management discussions with PG school for possible take-off.
19.	Enugu State University of Science & Technology	Yes	3 – 4yrs	Thesis & Dissertations.
20.	Delta State University, Abraka	Yes	2 – 3yrs	Thesis & Dissertations.
21.	Imo State University, Owerri	No	No	There is high level management discussions for possible take-off
22.	Ebonyi State University, Abakaliki	No	No	No plans for IR now
23.	Chukwuemeka Odimegwu Ojikwu University, Igbariam	No	No	No plans for IR now
24.	Cross River State University of Technology	No	No	No plans for IR yet
25.	Akwa Ibom State University, Ikot Akpaden	No	No	No discussion on this IR for now
26.	Ignatius Ajuru University	No	No	No plans for IR yet
27.	Niger Delta University	No	No	No plans for IR now
28.	Edo State University, Uzairue	No	No	The library is still growing. No plans for IR now
29.	Kingsley Ozumba Mbadiwe University Ogboko	No	No	No plans for IR yet
30.	University of Africa, Toru Orua	No	No	No plans for IR now
31.	University of Agriculture and Environmental Studies	No	No	No plans yet. The University is just starting.
32.	Bayelsa Medical University	No	No	No plans yet
33.	Delta State University of Science & Technology	No	No	No plans for IR yet
34.	Enugu State University of Medical and Applied Sciences	No	No	No plans yet

Findings as shown on Table 2 reveal that out of the 34 Federal and State university libraries, only eleven (11) representing 34.4% had established institutional repositories. The remaining 23 or 67.5 % had not established institutional repositories at the time of conducting this research. Out of these eleven (11) universities, 8 or 72.7% were federal universities while 3 or 27.3% were state universities. The federal universities that have established institutional repositories are University of Nigeria Nsukka, University of Benin, University of 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 in the different university libraries. None of them had existed for up to ten years.

On the type of materials deposited at the institutional repository, almost all the libraries that had established institutional repository contained mainly thesis and dissertations produced by the candidates that graduated from their post graduate programmes.

4.3 Part Two: Institutional Repository Policy Framework

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 3, 4 and 5.

Table 3: 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	PG School certifies, Theses & 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	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	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	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	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	Compulsory submission of hard and soft 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	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, Ndufu-Alike Ikwo	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, 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	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	PG School certifies and forward Thesis & Dissertations in soft copy to IR	Personal letters to lecturers, notice boards.	Daily on weekdays except weekends.

a) Deposition policy

Findings reveal that in universities that have developed institutional repositories, exist different policy frameworks on the deposition of materials in the IR. The policy approaches may not be unconnected with the type of materials deposited in their respective repositories. For instance, in almost all the universities, the postgraduate school 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 submission of journal articles by lecturers to the IR.

b) Policy on creation of awareness of IR

Again, universities that have developed IR adopted different policy frameworks and strategies to alert the public, including 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 adopt a variety of approaches such as talk shows, use of SMS/Email messages, hand bills, circulars, notice boards and even personal letters. of

c) Policy on daily operations

All the universities that have institutional repositories open for use on daily basis UNN, UNIPORT, FUTO, MOUAU, AE-FUNAI open on daily basis and on weekends and on specified periods. This operation policy is because the IR is mainly used on visit to the library by the academic staff. Most of the universities are not linked online for access and use.

Table 4: Policy on Administration, Practices and Regulations

S/N	Universities	Administration	Practices	Regulation
1.	University of Nigeria, Nsukka	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	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	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	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	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	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	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, Ndufu-Alike Ikwo	Trained IR staff to administer, meets lecturers for publications	No Plagiarism text exist for now	Faculty IR Board, PG board.
9.	Rivers State University	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	Trained staff for IR exists	Abstract exist, no policy on retention, no plagiarism text	University-based monitoring & supervision.

a) Administrative policy

Findings as shown on Table 4, regarding how the IR in the universities are administered, reveal that in almost all the universities that have established IR, there is a trained IR staff, dedicated to the supervision and management of all matters pertaining to the information resources at the IR. The IR Unit Head is also trained on ICT matters for IR services

b) Practices

The university libraries that have developed IR engage in a number of practices to ensure quality of deposited information materials, retention and weeding standards and online specifications. These practices include carrying out plagiarism tests through TURN-IT-IN as found in UNN, UNIBEN, FUTO, UNIUYO, NAU and DELSU, and Rivers State University, OR Plag Checker as found in

University of Port Harcourt. However at AE-FUANI and ESUT, no plagiarism test exists for their Thesis and Dissertations.

c) Regulation

Apart from the supervisory roles of university librarians in their capacity as the Heads of the university libraries, there are two other layers of regulation in most of the universities that have established IR. At UNN, MOUAU and UNIPORT, two committees exist to regulate and ensure quality, uniformity, and standards. They are the university library-based IR Committee and the Senate Library Committee. In UNIBEN, no committee on IR exits, while at FUTO, UNIUYO, NAU, ESUT and DELSU, only University Library-based IR Committee exists. This committee ensures the continuity and sustainability of IR in their universities.

a) Linkages: Finding from the study reveals that none of the institutional repositories is 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.

b) 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 is also possible.

4.4 Part Three: Impact of Institutional Repository as 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 indicate that 985 lecturers duly filled and returned their copies of the questionnaire which gives a response rate of 89.5%. 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 6.

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, Ndufu-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**

Table 5 shows the response rate from the universities that have established institutional repositories. The highest response 96 (8.7%) came from the Michael Okpara University of Agriculture, Umudike. This is followed by Alex Ekwueme Federal University, Ndufu-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. Two significant scenarios were recorded at the University of Nigeria, Nsukka and University of Benin. Some lecturers at the universities of Nigeria and Benin returned their copies of the questionnaire unfilled (blank). When asked why they could not fill their own copies of the questionnaire, they stated their unhappiness with NUC and TETFund for not intervening properly in matters pertaining to the welfare of lecturers with the Federal Government. At the end, the research recorded a response rate of 89.5% across board.

(i) Frequency of Use of Institutional Repository for Research
Table 6: Lecturers' Rate of Use of Institutional Repositories for Research

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**

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 once in a while 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.

(iii) **Rate of Annual Publication Output and Citation of Articles by Scholars Due To IR.**
Table 7: Rate of Publication Output and Citation by Other Scholars

S/N	Publications Output	Response	%	S/N	Article Citation by Scholars	Response	%
a.	No article Published	187	20.0	a.	None	108	30.9
b.	One article Yearly	307	39.4	b.	One	110	31.4
c.	1 – 2 articles Yearly	208	26.7	c.	1 – 2 times	99	28.3
d.	2 – 3 articles Yearly	77	9.9	d.	2 – 3 times	33	9.4
e.	4 – 5 articles Yearly	0	-	e.	Above 4 times	0	-
f.	Above 5 articles Yearly	0	-				
	Total	**779**	**100**			**350**	**100**

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; another reasonable number, 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. It is also of note that 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 as a result of the use of IR is yet to reach maximum intensity.

(iv) Online Visibility of Lecturers
(i) Research Grant Arising from Online Visibility of Your Uploaded Work in the Repository.
Table 8: Attracted Research Grant by Lecturers as a result of Uploaded Publication on Institutional Repository

S/N	Research Grant	Response	Percentage
a.	Once	162	33.1
b.	Twice	91	18.6
c.	Three times	18	3.7
d.	Four times and above	12	2.5
f.	None	207	42.2
	Total	**490**	**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 as a result of uploaded works in the institutional repository, 91 or 9.2% had attracted research grant twice 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 publication 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.

(v) Invitation to Conference Due to uploaded work in the Institutional Repository
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**

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 invited to a conference as a result of their works being uploaded in their institutional repositories, there is every reason to state that the online visibility of lecturers 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. And again, it may be due to the fact that none of institutional repositories is attached to external data-base. 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) and Omeluzor (2014).

Challenges Encountered by Lecturers in Their Use of Institutional Repositories

Lecturers encountered a variety of difficulties in the use of their universities' institutional repositories. Some are economic, some are environmental while others range from infrastructure, personnel and accommodation. Table 12 provides the challenges as identified by the lecturers.

Table 10: Challenges Encountered by Lecturers in the Use of Institutional Repositories

S/N	Challenges	Responses	Percentage
a.	Unorganized system	145	12.8
b.	Limited time of use of repository	89	7.9
c.	No borrowing policy	70	6.2
d.	Poor accommodation for use	53	4.7
e.	No photocopying policy	46	4.1
f.	Poor assistance from staff	188	16.7
g.	Poor network to access repository	201	17.8
h.	Not accessible online	301	26.7
i.	Incomplete bibliographic details of documents in the repository	36	3.2
	Total	**1,129**	**100**

According to Table 10, a major challenge confronting lecturers in the use of institutional repositories in the public universities in the South-East and South-South Zones of Nigeria is that most of the repositories are inaccessible online (301 or 26.7%). Even when some of them are accessible online, there is poor network to access them (201 or 17.8%). In addition, lecturers could not make use of some of the information resources in the repositories through manual access points because the system is unorganized (145 OR 12.8%), coupled with poor assistance from the staff in-

charge of the repositories (188 or 16.7%), including limited time of use of the repositories (89 or 7.9%), no borrowing policy (70 or 6.2%) amongst others.

Remedies Outlined by Lecturers.

The study reveals that the lecturers suggested a number of measures to be adopted in order to ameliorate the various challenges they encountered in the use of institutional repositories. Amongst all the remedies, the strongest is that IR be made available and accessible online by creating networks where IR could be easily accessed online (302 or

24.4%). Following this is the full automation of the repository contents so that manual use of the resources could be abolished (291 or 28.5%); Creation of a distinct unit for IR outside of the university library system is another way of ameliorating the challenges as most of the IR are still administered within the framework of the university library-wide policy framework with small space to read (236 or 19.1%). Other measures include adequate and well-trained IR staff (124 or 10.0%) and that TETFund should include IR on its funding projects (186 or 15.2%).

5.1 Findings of the Research

(1) Establishment of Institutional repositories among the public universities in the South-East and South-South Zones is still at its embryonic stage as none of them is up to 10years of age at the time of conducting this research. At the time of conducting this research, most of the university libraries had no plans of establishing institutional repository in the nearest future. (2)At the time of conducting this research, the area marked out for accommodating IR in most of the universities that have established IR was small.

(3) Some of the universities used a combination of talk shows, personal contact to lecturers by IR staff, SMS/emails, circulars and viewing point Net (VPN) to sensitize lecturers on IR.

(4)Policy on deposition of Thesis and Dissertations at the IR is anchored on PG school's certification of copies before forwarding hard and soft copies to IR as well as compulsory submission of journal articles by lecturers.

5) Policy on administration shows that there is IR trained staff who manages the day to day running of the IR; IR opens daily on weekdays and weekends on specified periods; IR staff also liaises with lecturers for submission of journal articles.

(6) Policy on IR practices shows that at all times, abstract are provided for Thesis, Dissertations and other publications including plagiarism test via Turn-it-in, Plag Scan or Plag Checker.

(7) Policy on regulation shows that there are two layers of supervision on IR in the universities which are University Library-based Committee and University Senate Library Committee.

(8) Policy on linkage and use shows that most universities have their Local Area Network (LAN) and the university website to access IR. The LAN is accessed through the university access pin to staff for the IR. All the repositories have open access policy.

(9) The main aspect of lecturers' research activities influenced by their use of IR are in creating new topics for research, carryout diligent literature review and shaping their research methodology.

(10) Rate of annual research output and citation of articles by scholars due to the use of IR was low as only 39.4% of the lecturers had published an article yearly even as only 28.3% have had their published articles cited up to two times.

(11) Online visibility of lecturers in terms of attracting research grants, and attendance to conferences (locally or internationally) due to their use of IR was low as only 18.6% and 34.3% had attracted research grant twice and attended conferences respectively.

Conclusion

Findings have shown that institutional repository practices and operations are still at its embryonic state in most public universities in the South-East and South-South zones of Nigeria. Despite the fact that institutional repositories provide access to a variety of rich resources for research and other academic activities, many universities 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 be put in place to make for its continuity and viability.

Recommendations:
(a) For University Internal Governing Authorities
1. As many public universities in the South-East and South-South Zones have shown increased unwillingness and lack of plans to establish institutional repositories in their libraries, governing councils of such universities should mandate each Vice-Chancellor to establish IR as a matter of priority.
2. As most public universities in the two zones have weak regulatory system on IR, university senates should create a separate committee apart from the University Library-based Committee. This will make for proper supervision and monitoring, especially if Tetfund dedicates part of her funding projects for IR.
3. Thepractice of creating a hall or a room within the library system is seen to be frustrating effective management and operations of IR. The research therefore recommends that a separate building be built and dedicated for IR with a high ranking university library staff to manage it.
4. Some universities do not carry out plagiarism test before accepting Thesis and Dissertations. This is improper. The research recommends that all public universities must carry out robust plagiarism test to avoid duplication of Thesis and Dissertations anywhere.
5. There should be continuous training and retraining of IR staff on modern ways of using emerging technologies for IR management. This will enhance both their attitude to work and services delivery, as well as security of IR resources and preservation.

6. Most of the universities did not have clear policy framework in terms of the type of materials to be deposited in the IR and retention period. The research recommends that university librarians should come up with clear policy framework on the duration of retention of information resources before they are discarded or weeded out.
7. As online visibility of lecturers in terms of research output, attraction of research grants and attendance to conferences due to their use of IR is low. The research recommends that universities should institute awards of excellence (either cash or otherwise) for lecturers who attract research grants to the universities due to their use of IR.

(b) For TETfund
8. As IR has proven to be a huge asset to research output of lecturers and their online visibility, TETfund should dedicate part of her intervention funds to university institutional repository establishment. It should make available huge funds for universities so that complaint of university librarians of poor funds for IR matters could be ameliorated.

(c) For NUC
9. NUC should adopt and include IR as part of her accreditation criteria for universities. This will facilitate actions on the establishment of IR as a matter of priority.

10. As ranking of Nigerian universities are done annually, NUC could also include and adopt IR as part of her ranking criteria. This will in no small measure stimulate actions on the establishment of IR in many universities across the country.

References

Adam U. A & Kaur, K (2019). Empirical evidence of the practice of institutional repositories in Nigeria. *7th International*

Conference on Libraries, Information and Society (COLIS) at Malacca, Malaysia, 92. Research.net.

Anene, 1 & Ozor S(2020). Institutional repository development in Nigeria universities: Benefits and challenges, *researchgate.com*

Baro, E. E. & Nwabueze Echedom, A. U (2022). An evaluation of institutional repository development in African universities, *IFLA Journal*, 49(1)

Ebiwolate, B, Reghagwa, C & Idijal, C.R (2022). A study of institutional repository development, policies and challenges in university libraries in Nigeria. *Researchgate.com*

Ifijeh G., Adebayo O., Izuagba R. & Olawoyin, O. (2018). *Institutional repositories and libraries in Nigeria: Interrogating the nexus*. IGI Global.com

Nnadozie, C. O. & Chukwueke, C. (2018). Institutional repositories are platforms for information provision and academic visibility for members of Nigeria university community. *National conference on Institutional Repository for Sustainable Development*, held at Abia State University, Nigeria. researchgate. com.

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 (9); 1-11

Onwubiko, E. (2020). The current state and building of institutional repository in the library of Alex Ekwueme Federal University, Ikwo Nigeria. Researchgate. com

Ukwuoma, S.C & Okafor, V. N (2017). Institutional repository in Nigerian Universities. *Trends and Development in Library Collections, Acquisitions and Technical Services*, 40(1-2); 46-57