

Utilization of Open Access Repositories for Visibility of Academic Publications by Lecturers in South-East, Nigeria

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ABSTRACT

The study investigates the utilization of open access repositories for visibility of academic publications by lecturers in South-East, Nigeria. The specific objectives were to investigate the types of academic publications available, platforms used in self-archiving, level of satisfaction derived by lecturers with the contribution of open access repositories, challenges and strategies. It adopted descriptive survey design. Proportionate stratified sampling technique was used to draw a sample size of 418 from the total population of 4,187 lecturers. Questionnaire and observation check list were used for data collection. Frequency count, percentage, and mean score were used to analyze the data. The study revealed that there are enough academic publications available such as books, journals, projects, and thesis with the exception of handouts. It also revealed that Google Scholar, Research Gate and Open Access Journal were the main platforms lecturers use in self-archiving; while other platforms like Institutional Repositories, among others were minimally employed. Lecturers are less satisfied with the contribution of open access repositories. All the suggested challenges such as inadequate power supply, poor network, lack of awareness and inadequate research grants were all accepted. Similarly, all the suggested strategies for improving them were accepted. Recommendations were made based on the findings such as more awareness creation on importance of open access repositories; re-training of lecturers and provision of adequate ICT infrastructures that will improve the utilization of open access repositories by lecturers which could enhance the global visibility of academic publications from the Nigerian Universities.

1. Introduction

Universities are higher learning institutions that comprise college of liberal arts and sciences which are authorized to award academic degrees in various fields of study. They normally provide undergraduate, postgraduate and professional education (Lewis, 2004). The objective of establishing a university is to ensure that students' needs are met by providing classic and standard education and training opportunities for them. The university does this by empowering its students to meet-up

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with the 21st century challenges through its various programs.

The main functions of universities or higher education according to Hill (2015) are to provide education through the provision of facilities that enhance study and research; promote the progress and development of knowledge that are applied to government, community, industry, and commerce; develop curriculums to meet the community needs; share knowledge, promote scholarship and give degree awards (Duck, 2012). In essence, Universities provide and encourage study and research. Research is an intellectual activity that can be referred to as a systematic analysis and creative works undertaken to enhance the collection of knowledge or revise the current knowledge by discovering new facts, including individual and society knowledge.

In order to enhance the preservation and usefulness of research output, it has to be packaged or presented in the form of academic publications. Academic publications can emanate from peer-reviewed articles, opinion papers, faculty projects and reports, conference presentation among others. Publication can be referred to as the act of making information or stories available to people in printed or electronic formats. Academic publications are documents or articles that have undergone peer-review before they are published. Examples of different types of academic publications include; Books and Monographs, Journal Articles, Chapters in the Book, Edited Books, Book Reviews, Conference papers, Scientific Reports, Blogs and other types of Online writing (Churchill, 2016). Once there is a breakthrough or new discovery especially in science and technology, it always circulates to the public in the form of publication either through online or print media or both. Without academic publications and other information materials, teaching and learning would be pretty difficult, and many people would be missing vital information always.

Therefore, university employees most especially lecturers are mandated to engage in research and academic publications for the advancement of the institutions. Lecturers are academic experts who are employed in tertiary institutions to teach students either on a full-time basis or part-time. The Association of Graduate Careers Advisory Services (AGCAS) editors (2017) stated that teaching, research and administrative works are some of the proficiency needed by lecturers in their respective field of study. Teaching involves lecturing, practical, and seminar presentation, giving tutorials, fieldwork and using multimedia technologies to engage in e-learning. Research and administrative tasks require a lot of time and input; therefore, lecturers have to be up-and-doing in order to meet up with the expectations.

The essence of academic publications is to increase their usefulness by making them visible to the public. Visibility can be referred as the degree to which something is seen by the public. To achieve visibility in an academic field means that people know your name, think highly of your scientific contributions and are familiar with your work (Mauvais, 2016). To enhance the visibility of academic publications in this 21st century, open access repositories are highly needed. Open Access Repositories is defined as electronic/digital platforms that hold academic publication and provide immediate, free access to academic publications permanently for individuals to browse, download, read or disseminate (Neil, 2006).

Academic publication in open access repositories makes it available on the internet and permits anyone to browse, download, read, share, print, copy, index or link to other articles; use them as the law permits, and does not require any technical, financial or legal barriers except the ones

associated with logging into the internet itself. The necessary copyright condition required on this database is to properly acknowledge the authors through reference and citations. Publications in open access repositories demands that authors and publishers give irreversible, worldwide, free and permanent right to all users to access, use, disseminate, copy, and openly show case the work; transform and share the information openly in any format desired, provided that the authors are properly acknowledged. This implies that open access repositories make authors to publish their articles for impact and not just for money.

To accomplish the purpose of open access repositories, they must be utilized by lecturers and other researchers to archive or upload their research outputs digitally (self-archiving) for more visibility and accessibility. Utilization in this context means to put to use; turn to profitable account and the action of putting the open repositories into practical use.

Globally, open access repositories have grown tremendous in the developed countries like in USA, UK, Germany, and Australia; after which Japan and other African countries followed. This shows that these nations have realized the needs and usefulness of open access platforms in wider dissemination of information. In general, open access databases or repositories are more of institutional, multi-disciplinary and based in English language. Repositories normally employ open access initiative-compliant repository software such as DSpace, Eprints, Greenstone, Architekturz, CALIBRE, Nitya and HTML (Ali, Jan, & Amin, 2013).

In South-East Nigeria, many academic staff of the universities engage in different kinds of research which they need for promotion and retention of tenures. As such, a lot of academic publications emanate from these Lecturers such as articles, conference proceedings, textbooks, handouts, practical guides, abstracts, lecture notes in addition to projects, thesis and dissertations submitted yearly by students as required before they can qualify for the award of degree or diploma certificates. Unfortunately, it has been observed through the research conducted by Ezema (2011) that these intellectual outputs produced every year are heaped or piled up in offices and on library shelves with only few students and researchers utilizing them. In order to tackle this problem, most of these universities have accepted and adopted open access databases mostly school websites and institutional repositories to disseminate their academic outputs. For instance, the University of Nigeria, Nsukka has a functional website (www.unn.edu.ng) and an institutional repository (<http://repository.unn.edu.ng:8080/xmlui/>) powered by Dspace software. Likewise, Nnamdi Azikiwe University, Awka has an official website (<https://www.unizik.edu.ng>) and open education resources (<https://unizik.edu.ng/oer/>) where their staff and students are expected to upload their research findings and other educational resources like lecture notes, conference proceedings, journal articles, books, projects, theses and dissertations among others. The same applies to other federal universities in South-East Nigeria but the concern now is to determine how effective is the utilization of these repositories for academic publications' visibility?

1.1 Statement of the Problem

It is on record that many universities have made profound claims of their adoption and implementation of open access repositories. Publishing in Open Access Repositories guarantees academic visibility which leads to recognition, good reputation, prestige, and so on. Recognition could lead to invitations

to give seminars or present papers at conferences and workshops. Other benefits of academic visibility include receiving internal and external financial support for research and experiencing departmental growth as a result of increased enrollments and additional departmental resources (Mauvais, 2016).

It is obvious that a lot of research papers have been published and indexed by different journals but many of them have never received any citations, not because they are not quality papers but because of lack of visibility. In order to curb this invisibility challenge, it has become very necessary to utilize the opportunities presented by open access repositories by self-archiving the research output for easy access and more visibility. Open access repositories provide many benefits to lecturers, their institutions and other organizations. They save cost and time, allow publishers free access to distribute their work, supply up-to-date information to users anytime and anywhere.

Regrettably, from the researcher's observation, it seems like most of the local academic publications lack wide access and readership despite the quality and quantity of such articles. This could be because most of the articles are published in journals with restricted access and often demanding a large sum of money in order to purchase them. Likewise, some of the students' projects, theses and dissertations lack visibility because they are often dumped on the library shelves and not on the open access databases. It has also been observed that no research has been done with a view to investigating the utilization of open access repositories for visibility of academic publications by lecturers in South-East Nigeria; therefore, the work is set to investigate the extent of utilization of Open Access Repositories for visibility of academic publications by lecturers in South-East, Nigeria.

1.2 Objectives of the Study

The specific objectives of the study are to:

- (1) identify the types of academic publications available in selected federal universities in South-East, Nigeria
- (2) find out the platforms used in archiving of academic publications by lecturers in the universities in South-East, Nigeria
- (3) determine the level of satisfaction of lecturers with the contribution of open access repositories in the visibility of their academic publications
- (4) examine the challenges associated with the use of Open Access Repositories for visibility of academic publications of lecturers in the university
- (5) ascertain strategies for enhancing the utilization of open access repositories by lecturers for visibility of their academic publications

1.3 Research Questions

The following research questions were formulated to guide the study.

- (1) What are the types of academic publications available in these universities?
 - (2) Which platforms are employed by lecturers in archiving of academic publications?
 - (3) What is the lecturers' level of satisfaction in utilization of Open Access Repositories for
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the visibility of academic publications?

- (4) What are the challenges associated with the use of Open Access Repositories for visibility of academic publications of lecturers?
- (5) What are the strategies for enhancing the utilization of Open Access Repositories for visibility of academic publications?

2. Literature Review

2.1 Concepts and Types of Academic Publications Available in the Universities

Academic publication according to McGuigan and Russell (2008) is a field of publication that disseminates academic research results and scholarship through journal articles, periodicals, pamphlet, books, newspapers, thesis or dissertations. There is another kind of academic publication called grey literatures-these are the articles that do not undergo peer review but simply printed or uploaded on the internet. Examples of such include some annual/technical reports, white papers, stories, government documents, working papers and evaluations. They are usually produced by organizations that are not academic or commercial publishers. In contrast, academic publications are well researched articles that pass through peer reviews or editorial refereeing before they are qualified for publication (McGuigan & Russell, 2008). The authors clearly stated that each publisher, journal or field of study has a peculiar quality of peer review process and standard of article selection. On his own part, Gralka, Wohlrabe, and Bornmann (2019) affirmed that any research project carried out and formally documented to fulfill university or college requirement qualifies as an academic publication e.g. Essays, Thesis and Dissertation, Books, Research articles, Abstract, Translations, Conference papers and the rest of them. It can also be referred to as documents presented at conferences which are consulted by students, academics and researchers. In addition, DEST HERDC as cited in Ocholla, Ocholla, and Onyanha (2012) sees academic publications as any scholarly activities that meet research definition which involves discussion of literatures, follow a particular form of presentation to enable any reader to trace the works, have gaps of knowledge to fill (originality) and increase the stock of knowledge. They have to be in forms that ease information and knowledge dissemination such as books, thesis, projects, conference proceedings, newspapers, journal articles or chapters in a book.

Academic publishing, which commence as soon as the author(s) present a manuscript to a publisher, involves two separate processes which include: peer review and production processes (McGuigan & Russell, 2008).

- It is the function of journal editors to organize the peer review process which is complete when the work or the article is accepted for publication. The manuscript is reviewed one or several times in which the author(s) make corrections/modifications following the reviewer's remarks. It continues until the editor(s) is/are satisfied and accept the article for publication. In recent times, peer reviews are progressively done online with the help of commercial software packages, proprietary systems, free and open software.
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- Publishers and journal editors are in control of production process, after receiving manuscripts from the authors, they edit the copy, make corrections on the type setting, include it on appropriate journal issue and number, and then produce print and online copies. In doing the copy editing, the editors ensure that the article is arranged using the journal's standard, has correct reference and labeling style, and that the text is clear and legible. This usually takes some period of time and regular communication with the people that submitted the article. Nowadays, manuscripts are usually submitted in PDF format compare to the olden days that such write-ups were photographed to produce journals and proceedings which were referred to as camera-ready copies.

The characteristics of academic publications as noted by Gralka, Wohlrabe, and Bornmann (2019) include: plan, outline, tone, language, a-point-of-view and approach. This means that academic publication requires a certain amount of planning with a proper outline and a formal tone. The use of slangs, jargons or abbreviations are not allowed and the language in academic writing must be clear and precise. The hub of academic publication is to enlighten people, that is why it always has the third person point of view.

In this internet age, the use of online platforms for academic publications over the traditional print media helps a lot to circulate information widely with a minimal cost (Ikponmwosa, Ukwoma, & Ukachi, 2013). The authors further stated that the introduction and utilization of ICTs for academic publication enhanced the number and flow of scholarly communication. Likewise, the movement from a conventional way of data and information distribution to electronic mode brought about by the introduction of open access repositories was described by Singh (2016). The author used three Asia-Oceania district universities as case study which includes: University of Hong-Kong, University of Malaya and Charles Darwin University. Interview was used to gather data on the development of institutional repositories. From findings of the study, the authors formulated a standard set of instructions to guide any organization that wishes to build open access repositories.

2.2 Platforms Used by Lecturers to archive academic publications

There are both traditional and new ways through which lecturers archive and preserve articles after publications. The traditional way include to keep the hard copies in their offices, homes or in the library; while the new way especially with the advent of information and communication technologies include to save the soft copies of their works or files electronically through e-mails or by uploading them on other online platforms. Another means of increasing wide access, readership and more citations is by publishing the articles on open access repositories. The transition to full Open Access is both essential and unstoppable for modern research policy' (Engelen, 2009).

2.3 Utilization of Open Access Repositories for Visibility of Publications

Open Access Repositories are authentic databases for research outputs. They are compilation of scholarly outputs that help to minimize plagiarism and duplication of research. Informed scholars know that the contents of OARs are more useful than most websites. Aliyu as cited in Ukwoma

and Dike (2017) stated that the use of information has permeated all segments of human endeavor thus, the need of information utilization by students and lecturers have become very necessary to achieve their academic pursuit. Since OARs are globally accessible and contain academic publications, they become very necessary for researchers because of the original research works they contain. To upload academic publications on open access repositories, Bailey (2008) as cited in Okpala (2017) recommended two complementary strategies which are:

- **Self-Archiving (Green Open Access):** This is one of the formats by which scholars use to deposit their journal articles in open access repositories commonly called, self-archiving. When these repositories conform to standards created by the *Open Archives Initiative*, then search engines and other tools can treat the separate repositories as one. Users then need not know which repositories exist or where they are located in order to find and make use of their contents. Self-archiving is the process by which authors upload their research outputs freely on electronic platforms for anyone to use. The articles could be manuscripts or already published papers. Manuscripts (pre-print) are original versions of articles that have not undergone peer review or editorial review and modification. Post-prints are the final versions of articles that are published. They can either be the publisher's version of the article or an updated preprint that the author creates to reflect any changes made during the peer review and editorial processes. Self-archiving has some strategies in itself, as identified by Bailey in Okpala (2017) who stated that 'the most common ways that e-prints are made available on the Internet are: (1) authors' personal Websites, (2) disciplinary archives, (3) institutional-unit archives, or (4) institutional repositories. But authors at times, find it difficult to do self-archiving due to some apprehensions about publishers' policies. This is why SHERPA-RoMEO exists – to offer list of publisher permissions policies with respect to self-archiving.
 - **Open Access Journals (Gold Open Access):** These are journals that are freely available to scholars online for downloads and use. According to Suber (2017), Digital Academic journals that are freely available for everyone to browse, read download, copy, use and share without any technical and financial barriers are referred to open access journals. Examples of such journals include: Nature Communications; Plos One; Royal Society Open Science; Scientific Reports; African Journal of Food, Agriculture, Nutrition and Development; Open Access Journal of Medicinal and Aromatic Plants; College & Research Libraries; Information Technologies and International Development; Scientific Data; Energies; Open Engineering, New Journal of Physics; Open Physics etc. Some are subsidized, and some require payments on behalf of the author. It has become very pertinent for scholars to engage on new journals dedicated to open access and assist the already established journals to migrate to open access to enable researched articles to disseminate as widely as possible. The full implementation of open access ensures the removal of most of the copyright restrictions and allows researchers to use all published materials. Money has been a great challenge in publishing and using academic articles but with this open access, there will not be any subscription charges on authors and users because, the journals will use alternative methods to cover these expenses. The alternative method for such fund is government and foundations that support research, organizations that
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engage researchers, philanthropist that support open access, gains from add-ons on texts, balance from cancelled journals that collect fees or researchers that are willing to support the journal. Other useful alternatives can be explored too. According to Sambe and Raphael (2015), the employments of Open Access Repositories enable institutions to save cost in their provision, access and utilization of their institutional resources. They further stated that these repositories provide the most current results of scientific and scholarly information; which also enable users' access to read, copy, download and print full text of the available articles. Jain (2012) pointed out that with the utilization of Open Access Repositories, researchers are assured of wider visibility and usage of their research findings; with a significantly larger and more diverse audience. In the same view, Lind and Williams (2013) declared that the utilization of Open Access Repositories will increase the wider availability of peer-reviewed publications and scientific data in digital formats which will create innovative economic markets for services related to creation, preservation, analysis, and visualization of academic publications. Policies that mobilize these publications and data for re-use through preservation and broader public access also maximize the impact and accountability of the Federal research investment. They concluded that these policies will accelerate scientific breakthroughs and innovations, promotes entrepreneurship, and enhance economic growth and job creation. Other open access repositories utilized to enhance the visibility of academic publications include:

- **Open Access Books e.g. (DOAB):** the essence of this is to help users discover and access book freely online. They invite publishers to send the bibliographic details of their open access books and make such details to be harvestable so as to increase their visibility, distribution and impact. Aggregators can incorporate the records into their commercial services and libraries can integrate the index into their online catalogues, which helps students and researchers to access and use the information materials. (<https://www.doabooks.org/doab?func=about&uiLanguage=en>)

Despite the numerous benefits offered by the utilization of these Open Access Repositories, a lot of challenges have been identified to be associated with their use for the visibility of academic publications.

2.4 Challenges Associated with Utilization of Open Access Repositories for Visibility of Academic Publications

Electronic archiving involves numerous processes and many challenges are encountered. Reza in Ukwoma and Okafor (2017) identified some of the challenges associated with uploading contents online as follows: lack of technical knowledge and support; insufficient fund, copyright issues, software challenges, organization of collection, illegal and harmful materials, and cultural sensitivity. It further asserted that another central challenge for developing OARs does not lie with the technical implementation but in instilling a change of mindset among researchers to freely make self-archiving an important part of their academic life. Author further revealed that many lecturers are not willing to submit their academic publications to OARs because they do not understand what open access repositories

mean and their importance to academics. On his own part, Bevan (2007) argued that even if academics are happy to self-archive, a number of factors are involved; academics perceive that they do not have enough time to add materials to an OAR; adding contents to an OAR does not fit into their professional workflow; publishing in OAR may conflict with their interest of publishing in a preferred journal which is a misconception that an OAR may conflict with their allegiance to their subject discipline over other institutions.

Again, some of the challenges of open access repositories as observed by Ukwoma and Okafor (2017) include: low level of awareness of open access domains, low level of awareness of self-archiving rights by faculty members, inadequate institutional support, and authors' inability to retain the correct version of their papers as required by the publisher. Li and Banach (2011) stated that lack of sustainable funding and adequate staffing are some of the obstacles in implementing successful open access repositories. Since many institutions are still developing their repositories, it will be crucial to address these issues as part of planning process. Another challenge is lack of collection policy to specify what should be included on the OARs and in what format and who should include them. In the same view, Adebayo as cited in Ukwoma and Okafor (2017) identified a number of challenges facing the creation and sustenance of OARs. They include tracking of publications; financing purchase, mode of stocking, staffing and staff hours, use and getting staff to agree to share their works. These obstacles should be addressed by any administration that wants its open access repository to succeed.

Jain (2012) cited some of the major challenges affecting the utilization of open access repositories for research visibility as: high cost of availability of Internet and information and communication technologies (ICTs); Poor connectivity and inadequate telecommunication infrastructure; Inadequate funding to build, upgrade and maintain ICT infrastructure; and copyright issues. To support this, Okoye and Ejikeme (2011) stated that lack of sensitization of the people to adopt open access repositories; inadequate skills to navigate the internet, ignorance of open access journal facilities, unstable power supply and unavailability of internet remain the major constraints hindering the utilization of open access repositories especially in developing countries. In addition to this, Oluwasemilore (2013) identified the following as the main challenges with the utilization of open access repositories-Insufficient fund for researchers and research organizations; unstable and insufficient power supply; lack of public awareness for open access publishing; Shortage of cross linked electronic libraries; issue of copyright protection regime; and inadequate of information and communication technological infrastructure. To tackle these challenges, some strategies had been offered by available literatures on how to enhance the utilization of open access repositories for visibility of academic publications

2.5 Strategies for Enhancing Utilization of Open Access Repositories for Visibility of Academic Publications

Considering the numerous challenges facing the utilization of open access repositories for visibility of academic publications, some of the strategies that could be employed to enhance its effectiveness as given by Ezema (2011) include: the improvement of internet connection and construction of standard telecommunication infrastructure by the government as they are the bedrock of open access repositories. They should also provide more research fund to support and motivate researchers

to embrace open access movement by publishing their research findings on open access journals. Academic institutions especially in developing countries should assist in payment of author's fees to publish in open access repositories; they should also advocate open access and eliminate the misconceptions associated with open access repositories; there should be a policy to recognize open access publications in promotion and tenure evaluation. To positively impact more on open access publishing, there is a need for organizations in developed countries to encourage scholars in developing countries by sponsoring more research projects. Librarians in academic libraries should promote, publicize, and direct students and academia towards the benefits of open access resources (Jain, 2012; Oluwasemilore, 2013).

Similarly, Genoni (2004) pointed-out that academics should be sensitized on the importance of open access or institutional repositories, and that in submitting their research output, it is the electronic format that is required at no cost. Most open Access Repositories are built on a system of self-archiving, which entails the producers adding items to the repositories and creating the necessary metadata. As was pointed out by Choudhary et al. (2014), voluntary submissions from researchers will populate an OAR and sustain its growth. They further highlighted that the real world is always different: researchers may support the project in principle but very few take voluntary action. Therefore, to enhance proper planning and execution of the project, a policy statement may be essential to guide and work as a reference for the project implementation. The project should be well planned, and the budget mapped out so as to sustain it; in most cases, the project is suspended as a result of the cost to carry on or maintain some of the equipment that may breakdown along the line.

In their own opinion, Sambe and Raphael (2015) listed the following as major strategies:

- creation of awareness for open access publishing
- stable networks and internet connectivity
- cross link of e-libraries
- provision of adequate and functional ICTs infrastructure
- stable power supply
- application of open access policies
- adequate funding of researchers and research institutions

To improve on this, it is also very pertinent to budget for digitization of hard copies of lecturers' publications as suggested by Fabunmi, Paris, and Fabunmi (2006). They stated that budget for digitization should include the following: salaries, wages and benefits which are estimated to be 50% of the project cost; staff training, equipment and supplies, services, contracts and legal fees; overhead and indirect cost, which include offices and work places; maintenance, communication and licenses. Some money should also be set aside for contingencies which may come up during the process.

On the other hand, Lecturers should be more ICTs compliance and stay up-to-date by continuously acquiring new technological skills which will help them in self-archiving. Strong leadership in an organization combined with constant in-house training for researchers and academia will also play a major role. To support this, Fabunmi, Paris, and Fabunmi (2006) advocate that organizing an orientation programme for staff on the purpose and importance of uploading their research output and retraining

those who lack the required ICTs skills will be of immense benefit and yield more results for the project. Likewise, institutional, governmental and funder mandates which depend largely on meaningful incentives, sanctions, and accompanied by compliance monitoring will undoubtedly help a lot in improving the utilization of open access repositories for visibility of academic publications (Okoye & Ejikeme, 2011).

3. Methodology

The study employed descriptive survey research design. This research design according to GutCheck is used to describe a situation, subject, behaviour, or phenomenon. Descriptive survey research design involves a systematic and comprehensive collection of information about the opinions, attitudes, feelings, beliefs and behaviour of people through observation, interviewing and administering of questionnaire to a relatively large and representative sample of the population of interest. The area of the study is South-East, Nigeria. This is one of the six geopolitical zones in the country and it is located between North-Central and South-South of Nigeria. South-East has produced and is still producing great personalities in academics, politics, literature, science and technology, sports, entertainment etc. The choice of South-East, Nigeria is based on the fact that their lecturers are among those leading in research and academic publications in the country. For instance, University of Nigeria, Nsukka ranked second among top ten best universities in Nigeria according to the recent list released by National Universities Commission (NUC) in 2019. The population of the study comprises four thousand, one hundred and eighty-seven (4,187) lecturers employed in selected Federal Universities under study.

Proportionate stratified sampling technique was used to select the sample size of four hundred and eighteen (418) lecturers which is 10% of the total population. Respondents irrespective of genders were randomly selected using the random sampling technique. The instruments for data collection for this study were questionnaire titled “Utilization of Open Access Repositories by Lecturers Questionnaire” (UOARLQ) and observation checklist. The questionnaire formulated in accordance with the research questions which was divided into two sections (**A & B**). Section ‘**A**’ contains four items which sought to collect the background information of the respondents such as name of the institution, gender, academic qualification and years of working experience. Section ‘**B**’ was made up of five clusters designed in line with a 4-point rating scale and required the respondents to tick any option showing their level of agreement. It also has open ended questions for the respondents to make further comment.

The observation checklist was designed by the researcher in line with the research question one which dealt with the availability of academic publications on each of the Universities’ website. The checklist consisted of ten (10) items that helped the researcher to ascertain some of the responses given by respondents through questionnaire

Copies of the questionnaires were administered on the respondents by the researcher and three research assistants by physically visiting the universities under study. The research assistants were given one day briefing on how to administer, retrieve, and return the completed questionnaires to the researcher. The researcher and the research assistants employed direct approach (face-to-face)

in administering the questionnaires to the lecturers by visiting them in their offices and classrooms after lectures; this was to minimize wastage and ensure high rate of return. It took approximately 3 weeks (11th-30th March 2019) for the researchers to share and retrieve the questionnaires.

In the case of observation checklist, the researcher visited each of the institutions' repositories by logging into their websites to personally observe the type of academic publications available in each of the selected institutions under study and to check their accessibility.

The data collected was organized and analyzed following the research questions. Research question one was analyzed using percentage. Items that score 50% and above were considered as positive or accepted, while those below 50% were considered negative or rejected by the respondents. "Mean score" was used to analyze research question two to five and the results were presented on tabular form. The real limit of numbers was used to take decision on research questions two to five as follows:

- 0.50-1.49 - Not Employed (NE); Not Satisfied (NS); Strongly Disagree (SD); Not Appropriate (NA)
- 1.50-2.49 - Less Employed (LE); Less Satisfied (LS); Disagree (D); Fairly Appropriate (FA)
- 2.50-3.49 - Employed (E); Satisfied (S); Agree (A); Appropriate (A)
- 3.50-4.0 - Highly Employed (HE); Highly Satisfied (HS); Strongly Agree (SA); Very Appropriate (VA)

The information from observation check list was presented using table and the result used to corroborate the data collected with the questionnaires.

4. Results

A total of four hundred and eighteen (418) questionnaires were distributed to Lecturers of the three institutions under study but three hundred and eighty-eight (388) were returned and correctly filled. This indicates a percentage of 92.83% which the researcher considered appropriate for use.

RQ1: What are the types of academic publications available in this university?

Table 1 presents the list of types of academic publications available in universities under study. The table shows the level of availability as follows: Handouts (44.6%) was the only type of academic publications that was scarcely available. However, books (93.3%), journals (99.5%), conference proceedings (88.4%), newspapers (79.9%), technical reports (71.4%), lecture notes (51.0%), projects (95.4%), abstracts (74.5%) and dissertations (84.5%) were available. In summary, the table revealed that the main academic publications available in all the institutions studied are journals, books, projects, dissertations, conference proceedings, newspapers, abstracts and technical reports. This is in line with the findings of Ocholla, Ocholla, and Onyancha (2012) and Ezema (2011) who pointed out that books, book chapters, journal articles and/or conference publications are types

of academic publications provided that they meet the definition of research, and are characterized by substantial scholarly activities.

The availability of different types of academic publications in the universities under study implies that both lecturers and students in the institutions engage extensively in research and publications. This finding also corroborates with what the researcher observed on each institution’s website where most of these academic publications can be accessed and used. Although, there was a column for handouts but there was nothing uploaded on it.

Table 1. Frequency and Percentage of the Types of Academic Publications Available in the Universities

Item	Available		Not Available		Decision
	Freq.	%	Freq.	%	
Books	362	93.3	26	6.7	Available
Journals	386	99.5	2	0.5	Available
Conference proceedings	343	88.4	45	11.6	Available
News papers	310	79.9	78	20.1	Available
Handouts	173	44.6	215	55.4	Few Available
Technical reports	277	71.4	111	28.6	Available
Lecture notes	198	51.0	190	49.0	Available
Projects	370	95.4	18	4.6	Available
Abstracts	289	74.5	99	25.5	Available
Dissertations	328	84.5	60	15.5	Available
Grand Total/Percentage		71.14		19.77	

RQ2: *Which platforms are employed by lecturers in archiving of academic publications?*

Data in table 2 above shows the platforms that are employed by lecturers in archiving of academic publications. The platforms that were found to be employed included: Google Scholar, Research Gate and Open Access Journals. It was also found that majority of the platforms were less employed they are: institutional repository, Open Education Resources (OER), LinkedIn, among others. With a cluster mean of 2.41 and standard deviations of 1.08, it suggests that on the average, the platforms employed in self-archiving of academic publications are low. This result is similar to the findings of Ukwoma and Mole (2017), which revealed that most archived documents were journal articles but submission of contents for archiving on institutional repositories was very low. Under employment of most of the open access platforms for self-archiving could imply that most lecturers are yet to grasp the important of self-archiving or they lack the awareness of such platforms. It could also be that they are not willing to give out their publications freely as some of them argued that they used their hard earnings to carry out the research without any research grant or government support.

Table 2. Mean and Standard Deviation of the platforms employed by lecturers in archiving of academic publications

Items	UNN N= 184		MOUAU N = 83		UNIZIK N = 121		Overall N= 388		R	Dec.
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD		
	Google Scholar	3.40	0.89	3.58	0.70	3.33	1.04	3.42		
Research Gate	3.32	0.94	3.46	0.59	3.11	1.00	3.28	0.90	2	E
Open Access Journals	2.96	1.03	2.81	1.06	2.74	1.05	2.86	1.04	3	E
Institutional Repository	2.92	1.19	1.67	1.07	2.32	1.31	2.47	1.30	4	NE
Open Education Resources (OER)	2.47	1.10	1.96	0.94	2.45	1.09	2.36	1.08	5	NE
LinkedIn	2.43	0.99	2.20	1.09	2.15	1.15	2.30	1.07	6	NE
Academia.edu	2.46	1.13	1.80	1.01	2.17	1.06	2.23	1.11	7	NE
Twitter	2.00	1.16	2.07	1.18	1.97	1.22	2.01	1.18	8	NE
Face book	1.96	1.10	2.30	1.24	1.74	1.06	1.97	1.14	9	NE
My Personal Website	1.96	1.14	1.63	1.08	1.83	1.11	1.85	1.12	10	NE
My Personal Blog	1.99	1.08	1.47	0.89	1.67	0.97	1.78	1.03	11	NE
Cluster Mean & SD	2.53	1.07	2.27	0.99	2.32	1.10	2.41	1.08		NE

R = Ranking, D = Decisions, N = Population, \bar{X} = Mean, SD = Standard Deviation, E = Employed, NE = Not Employed

RQ3: *what is the lecturers' level of satisfaction in utilization of Open Access Repositories for the visibility of academic publications?*

Data presented in table 3 above shows the mean ratings and standard deviations of lecturers in federal universities in South-East Nigeria on level of satisfaction in utilization of Open Access Repositories for the visibility of academic publications. The table revealed that none of the items was rated highly satisfied; that four items were rated satisfied, they are; Google Scholar, Research Gate, Open Access Journals, and Institutional Repository. However, the respondents were not satisfaction with seven other platform, this was shown with mean scores below 2.50 they include; Open Education Resources (OER), LinkedIn, Academia.edu, Face book, Twitter, Personal Website and Personal Blog. The overall cluster mean of these items was 2.51 with standard deviations of 1.03. This result shows that lecturers in this part of the world are less satisfied with the contribution of open access repositories.

This result relates with the findings of Islam and Akter (2013) which revealed that the awareness of open access in the developing world is still low, while more scientifically advanced nations have already recognized the benefits of open access and are making fast progress both in converting journals to open access and in establishing interoperable Institutional Repositories. From the researcher's opinion, if school authorities and library managements should improve the working conditions of the staff by enhancing the staff welfare, subscribing to more open access databases,

provision of electricity and stable networks, this will probably endear lecturers to open access repositories.

Table 3. Mean and Standard Deviation of the lecturers’ Level of Satisfaction in Utilization of Open Access Repositories for the Visibility of Academic Publications

Items	UNN N= 184		MOUAU N = 83		UNIZIK N = 121		Overall N = 388		R	Dec.
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD		
Google Scholar	3.44	0.87	3.46	0.65	3.41	0.94	3.44	0.85	1	S
Research Gate	3.36	0.73	3.27	0.68	3.30	0.73	3.32	0.72	2	S
Open Access Journals	3.13	1.09	3.16	1.02	2.94	1.15	3.07	1.09	3	S
Institutional Repository	3.17	0.95	1.76	0.97	2.50	1.25	2.66	1.19	4	S
Open Education Resources (OER)	2.57	1.11	2.08	0.93	2.45	1.01	2.43	1.06	5	NS
LinkedIn	2.42	1.02	2.24	1.05	2.27	1.11	2.34	1.06	6	NS
Academia.edu	2.61	1.04	1.64	1.00	2.23	1.15	2.29	1.13	7	NS
Face book	2.13	1.06	2.30	1.06	2.26	1.13	2.21	1.08	8	NS
Twitter	2.05	1.05	2.19	1.04	2.19	1.00	2.12	1.03	9	NS
My Personal Website	2.02	1.05	1.71	1.09	1.95	1.08	1.93	1.07	10	NS
My Personal Blog	1.92	1.01	1.52	0.96	1.82	0.98	1.80	1.00	11	NS
Cluster Mean & SD	2.62	1.00	2.30	0.95	2.48	1.05	2.51	1.03		S

R = Ranking, D = Decisions, N = Population, \bar{X} = Mean, SD = Standard Deviation, S = Satisfied, NS = Not Satisfied

RQ4: *what are the challenges associated with the use of Open Access Repositories for visibility of academic publications of lecturers?*

Table 4 presents the mean ratings and the standard deviations responses of lecturers in federal universities in South-East, Nigeria on the challenges associated with the use of Open Access Repositories for visibility of academic publications. In the descending order of severity, they agreed that: inadequate power supply, poor networks, inadequate research grants/incentives to embark on research activities, poor internet connectivity, among others were the challenges associated with the use of Open Access Repositories for visibility of academic publications. This affirms the findings of Sambe and Raphael (2015), Mole and Obidike (2015).

Table 4. Mean and Standard Deviation of Challenges Associated with the Use of Open Access Repositories for Visibility of Academic Publications of Lecturers

Items	UNN N= 184		MOUAU N = 83		UNIZIK N = 121		Overall N = 388		R	Dec.
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD		
Inadequate power supply	3.51	0.84	3.22	0.86	3.47	0.73	3.44	0.82	1	A
Poor networks	3.42	0.85	3.24	0.69	3.50	0.69	3.41	0.77	2	A
Inadequate research grants/ incentives to embark on research activities.	3.53	0.84	2.98	0.96	3.53	0.59	3.41	0.83	2	A
Poor internet connectivity	3.38	0.95	3.23	0.67	3.24	0.89	3.30	0.88	3	A
Outdated ICT equipment for office activities	3.24	0.95	3.22	0.95	3.21	0.92	3.23	0.94	4	A
No financial profit in uploading research outputs on OARs	3.29	0.98	2.60	1.07	3.04	0.99	3.06	1.03	5	A
Lack of awareness of Open Access Repositories (OARs)	3.19	0.99	2.63	1.06	2.93	1.18	2.99	1.08	6	A
Lack of standard laboratories for research activities	2.98	1.04	3.00	1.01	2.98	0.99	2.98	1.02	7	A
Inadequate knowledge on how to upload articles online	3.18	1.02	2.41	1.01	3.05	1.20	2.97	1.12	8	A
Excess workload	2.92	1.07	2.73	1.06	3.07	1.01	2.93	1.05	9	A
Inadequate time to engage in self-archiving	2.76	1.06	2.76	1.01	2.93	1.00	2.81	1.03	10	A
Dilapidated educational infrastructures	2.71	1.15	2.98	0.99	2.80	1.06	2.80	1.09	11	A
Fear of plagiarism	2.87	1.18	2.48	1.02	2.79	1.25	2.76	1.18	12	A
Lack of ICT skills to engage in online activities	2.82	1.17	2.64	1.04	2.74	1.12	2.76	1.13	13	A
Lack of OAR mandate in the institution	2.83	1.06	2.30	1.02	2.73	1.12	2.69	1.09	14	A
Cluster Mean & SD	3.11	1.01	2.83	0.96	3.07	0.98	3.04	1.00		A

R = Ranking, D = Decisions, N = Population, \bar{X} = Mean, SD = Standard Deviation, A =Agree

RQ5: *what are the strategies for enhancing the utilization of Open Access Repositories for visibility of academic publications?*

Table 5 shows the mean responses and the standard deviations in the opinions of lecturers, the strategies for enhancing the utilization of Open Access Repositories for visibility of academic publications in selected federal universities in South-East Nigeria. The mean ratings of lecturers on each of the items were above 2.50, and this implies that all the suggested strategies were accepted. From the table, it was found that nine out of fifteen item statements were rated very high, from the highest order of their preference, they are; school and library authorities should create more awareness on (OARs) by organizing seminars and workshops, school authorities should ensure adequate internet connectivity, institutions should make provision for steady power supply, and so on.

Table 5. Mean and Standard Deviation of Strategies for Enhancing the Utilization of Open Access Repositories for Visibility of Academic Publications

Items	UNN N= 184		MOUAU N = 83		UNIZIK N = 121		Overall N = 388		R	Dec.
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD		
School and Library Authorities should create more awareness on (OARs) by organizing seminars and workshops	3.80	0.48	3.81	0.45	3.83	0.37	3.81	0.45	1	VA
School Authorities should ensure adequate internet connectivity	3.76	0.57	3.82	0.45	3.84	0.45	3.80	0.51	2	VA
Institutions should make provision for steady power supply	3.72	0.61	3.76	0.55	3.83	0.45	3.76	0.55	3	VA
Authorities should also purchase more bandwidths to ensure speedy networks	3.73	0.66	3.71	0.55	3.74	0.68	3.73	0.64	4	VA
There should be more in-house training for the Lecturers especially on utilization of electronic/online resources	3.68	0.60	3.67	0.61	3.72	0.52	3.69	0.58	5	VA
Researchers should continue to acquire more ICT skills especially in this 21st Century	3.62	0.73	3.59	0.72	3.80	0.57	3.67	0.69	6	VA
Research Funders and Federal Government should give more grants to encourage researchers to make their research results visible to all	3.55	0.78	3.51	0.94	3.62	0.78	3.56	0.82	7	VA
Authorities should also make provision for standard laboratories in all the academic institutions	3.47	0.80	3.53	0.90	3.70	0.64	3.55	0.78	8	VA
Federal Government should support education by building more educational infrastructure such as comfortable office and classrooms	3.46	0.90	3.53	0.90	3.64	0.77	3.53	0.86	9	VA
They should also buy more current ICT equipment e.g. Laptops, etc.	3.47	0.83	3.49	0.69	3.50	0.74	3.48	0.77	10	A
Lecturers should update themselves with the list of publishers' permissions policies with respect to self-archiving	3.46	0.81	3.51	0.63	3.46	0.78	3.47	0.76	11	A
Academia should be encouraged to make their publications visible as this will increase their prestige	3.40	0.99	3.57	0.65	3.42	0.99	3.44	0.93	12	A
Lecturers should create time for self-archiving	3.21	0.88	3.34	0.79	3.42	0.76	3.30	0.83	13	A
The Authority should employ more workers to ease the workload	2.96	1.02	3.34	0.89	3.23	0.96	3.13	0.99	14	A
Every institution should mandate their academic staff to upload their articles on OARs	3.25	0.97	2.30	1.06	3.12	1.03	3.01	1.07	15	A
Cluster Mean & SD	3.50	0.77	3.50	0.72	3.59	0.70	3.53	0.75		VA

R = Ranking, D = Decisions, N = Population, \bar{X} = Mean, SD = Standard Deviation, VP = Very Appropriate, A = Appropriate

This finding aligns with the findings of Islam and Akter (2013) who suggested that university administrators should create more open access awareness and that there should be more Government sponsorship and intervention in order to purchase Open Access Software products such as EPrints, DSpace, FEDORA, Greenstone. If the school authorities will implement all these, it will be a good avenue to enhance the dissemination of knowledge which is one of the main functions of higher institutions.

5. Limitation of the Study

The limitation encountered in the course of this study was in the area of industrial action by academic staff union of the universities (ASUU strike), this delayed the collection of data and some of the questionnaires were lost in the process. Another limitation was in the area of convincing the academic planning unit of each university under study to release the total number of their academic staff. This took several weeks and a lot of write-ups before they complied. Next was the pain of travelling from one state to another to share the questionnaires due to bad roads and lack of accommodation. Regardless of these limitations, the researcher was able to gather valuable data that was used for the study.

6. Conclusion

The study covered utilization of open access repositories for visibility of academic publications by lecturers in South-East, Nigeria. The objectives were to identify the types of academic publications available in selected federal universities; platforms used in archiving of academic publications and the level of satisfaction derived by lecturers with the contribution of open access repositories. The study showed that academic publications such as books, journals, conference proceedings, newspapers, technical reports, lecture notes, projects, abstracts and dissertations, are available in all the universities studied with the exception of handouts. It also revealed that lecturers highly employ few of the open access platforms such as Google Scholar, Research Gate and Open Access Journal, while many others like Institutional Repositories, Open Education Resources, LinkedIn, among others are less employed. The low level of utilization could be attributed to lack of awareness and management issues in the provision of facilities and infrastructures. The study suggested some strategies to get the interest of lecturers in uploading their academic publications on open access repositories such include creation of awareness, provision of adequate ICT facilities; motivation of academics and making of open access policy by the school authorities. If all these strategies are implemented, academics as well as the institutions stand the chance of being globally visible through their research and publications.

7. Recommendations

Based on the findings of this study, the following recommendations were made:

- (1) There should be more campaigns to create awareness and sensitize the university community on the importance of open access repositories. In this way, the academics will see the necessity of archiving their publications for more visibility and citations.
- (2) Research funders and school authorities should support lecturers and motivate to publish in all the open access repositories available so as to enhance the institution's global visibility.
- (3) School authorities should provide effective and adequate infrastructures such as computers, smart boards; free Wi-Fi, more bandwidths and constant power supply in order to increase the extent of utilization of open access repositories by lecturers.
- (4) Federal government and the school authorities should ensure that lecturers' welfare are paramount by providing them with comfortable offices, research grants, enough allowances and other incentives.
- (5) There should be a documented policy by the university management that requires lecturers to upload their articles on the institutional repositories as it is done in developed countries.

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