

# **INSTITUTIONAL REPOSITORY FOR EFFECTIVE RESEARCH OUTPUT AMONG UNIVERSITIES IN NIGERIA**

**By**

**ORAEKWE, CHIDIMMA GRACE.**

## **ABSTRACT**

The study addressed the effectiveness of institutional repository for research output in universities in Nigeria. The objectives of the study were to understand the benefits of institutional repository to research, to understand how institutional repositories has enabled research in Nigeria and also to understand the state of research output in Nigeria. Findings from the study established that limited infrastructure and resources, digitization, limited awareness and understanding, limited expertise, intellectual property right and copyright issues and lack of institutional support were the challenges that hindered institutional repository effectiveness for research in Nigeria. The study revealed the importance of institutional repository as an effective tool for research circulation and also how it increases the value for research. The study further recommended that a concerted effort from researchers, institutions and policy makers in Nigeria to prioritize the use of IRs as a tool for enabling research, this will involve investments in technological infrastructure and capacity building and also raise awareness and understanding of the benefits of open access and institutional repositories. The study also recommended institutional polices and incentives that should be put in place to encourage participation and ensure that researchers receive credit for their contributions. Partnerships and collaborations between institutions, organizations and funding agencies can help address resources and expertise gap and provide support for the full development of institutional repository in Nigeria.

## **KEYWORDS**

Institutional repository, Research Output, Universities, Nigeria

## **Introduction**

The scholarly output and research thesis produced by academic staff and students are ways to measure research output in Nigeria. Knowledge is a vital key in library resources, therefore there is a need to generate, supply and disseminate information. Academic libraries play a vital role in this continuous flow of information. The high cost of publishing and purchase of information resources have made libraries to act as substitute publishers through the use of

institutional repositories. (Jain, Bentley & Oladiran, 2009:1). The main role of an institutional repository is to promote the activities of learning, teaching and research in its host institution. The emergency of information and communication technology in organizations has guided the modus operandi of conducting businesses in organizations; the academic institutions are not left out as it seeks for ways to embrace these technologies to provide premium services to its customers. Academic institutions conduct a lot of research, so it is important to store knowledge for the future. Libraries are currently digitizing their holdings to improve accessibility and ensure long-term preservation. Libraries are now the new custodians of this platform, which universities and research centers are embracing in order to safeguard the intellectual production of their host institution. (Musangi & Sawe, 2013; 46)

Institutional repository has changed scholarly communication by enabling academic institutions enhance their reputation through visibility of research output. Ezema (2011: 282) stated that the advancement in information technology has been the bedrock for promoting open access of library operations to the internet and overall growth of libraries. The university library adopted the use of an institutional repository to bring together all scholarly output within the institution to a centralized space where they are accessible within the institution and also globally. Institutions in Africa is not among the top thirty countries that are recognized to have institutional repository rather the continent is still categorized as others in the OpenDOAR of institutional repository, others have the percentage of twenty seven percent (27%) which does not only include countries in Africa.( Open DOAR, 2023). Ivwighreghveta(2012) noted that the development of institutional repositories in Africa is an issue that deserves prompt attention as it is still at the foundational stages.

In Nigeria, the situation is not different, even though the number of institutional repository has had a slight rise from thirty one (31) in 2021 to thirty four (34) functional open access institutional repository that are available in Directory of Open Access Repository (OpenDOAR) as at February 2023. Ejikeme & Ezema (2019) was of the opinion that universities in Nigeria are yet to fully key in into the potentials of institutional repository in respect to disseminating their research and scientific outputs. Consequently this study seeks to understand the benefits of institutional repository to research output, to know the state of research output in Nigeria and the challenges that hinders the effectiveness of institutional repository for research output.

### **Digital Information in Universities**

Libraries serve as the hub of knowledge, information, and communication at universities, which are currently embracing ICT-based solutions to supply and offer quality services to its clientele. (Makori, 2016:3). The key success of any business venture is the customer, the constant use of a particular service or product is a sign that the customer is satisfied. Libraries, as hubs of research, are embracing institutional repositories to distribute research output because universities are aware of the economic potential of research production. (Jain & Kelvin, 2018:1). In order to suit user needs, university libraries have kept up by limiting the spread and preservation of information and knowledge through a range of ICT-based services. To enable access to scholarly outputs in digital formats led to the creation of institutional repositories (Mandhirasalam & Srivivasaragavam, 2014: 1). The university's mission is to organize, share, and keep materials for a very long time. This has been made possible via institutional repositories.

Institutional repository is an important factor of open access and also offers an avenue that aids universities and research bodies to assemble research products, enable access and provide research outputs produced by an institution. In Nigeria, universities have the highest centers for knowledge generation and intellectual communication.

### **Concept of Institutional Repositories**

The university was founded to further scholarship, research, and education in a variety of academic disciplines; in order for these goals to be achieved, the university library, usually referred to as the "heartbeat" of any higher education facility, is a crucial component of education. Academic institutions have been struggling with how to service and manage the annual production of digital intellectual work. The institutional repository was born out of the competition for who is going to be responsible for the dissemination of the institution's intellectual output using the internet as a medium. This open access requires collecting, managing, disseminating and the preservation of scholarly outputs created in digital formats by users in different academic institutions. Clifford Lynch defined institutional repositories (IR) as a set of services that a university provides to the members of its community for the purpose of managing and disseminating digital materials created by the institution and its community in his article titled "Institutional repositories: Essential Infrastructure for Scholarship in the Digital Age" in 2003. By using this technique, institutions may manage the volume of digital scholarship created by their communities, improve author and institution exposure within the academic community, and ensure that research outputs are easily accessible both before and after publication.. Akintunde in Agunwamba (2019) said that the goal of an institutional repository (IR) is to collect, preserve, and make available in digital form the intellectual capital of an

organization. Materials found in an Institutional Repository include theses and dissertations, preprints, conference papers, post prints, technical reports, photographs, and virtually any other digital content that the organization wishes to preserve. (Manjunatha 2011). An Institutional Repository represents the scholarship of the university and highlights the individual and collective worldwide stature of the faculty and staff.

### **Benefits of Institutional Repository in Research**

The rapid changes occurring in the knowledge and information society has made academic libraries seek ways to expand their roles of conducting research to ensure wide dissemination and also preservation in the library space. (Abrizah, Noorhidawadi and Kiran 2017). The advancement in technology has created an avenue for better productivity in research; access restrictions to scholarly information have been eliminated. With the introduction of new routes, components, and platforms for larger and better dissemination of research, the process of scholarly communication has improved over time and has remained constantly changing. (Kruesi et al., 2019). The key function of an institutional repository is to display the institution's scholarly output to international researchers; this includes books, journal articles, conference proceedings, patents, datasets, etc. In higher education institutions around the world, IRs has become a common setup. (Franeke et al, 2017).

Their distinctive ability to give answers to the management of intellectual information in academic institutions, institutional repositories has grown in importance in both the developed and developing nations. (Ukwuoma and Dike, 2017). They are the bridge to the knowledge gap for local research and visibility of research output by an institution or researcher (Bryson, 2017). By encouraging excellent research and academic performance, institutional repositories have

evolved into content management systems that exhibit and manage intellectual production for institutional treasures; they have dismantled the harsh walls of commercial publishing. Institutional Repositories have developed into a modern research system with the capacity to converge and blend data to the advantage of academic communities. (Schopfel and Azerousal, 2021). The goal of Institutional repository is to close the research gap that currently exists in the scholarly community and to refocus research in the direction of an open scholarly environment and also bringing together societal components (political, social, technological, organizational, ethical, and economical). Being the main method for self-archiving, the Institutional Repository promotes rapid dissemination of research results while simultaneously raising citation rates. (Cho, 2012). The rapid dissemination of information and clear citation research enhances the intellectual standing of scientists and authors. The barriers preventing the free exchange of intellectual ideas have been destroyed by IRs. Gardner (as cited in Bangani, 2018) highlighted the significance of having an institutional repository by citing the long delays in article publication, the explosion of information, and the rising costs of journals. Gardner argues that the significance of IRs has shown to boom scholarly research that was previously inaccessible and resulted in barring the society from the best research findings.

The institutional repository has continued to make it possible to produce research output by serving as a middleman for getting access to various information resources that would not otherwise be available. (Schoppel, 2019: 37). A platform for researchers worldwide to stem their research output, Institutional Repository has shown the importance of research to research sponsors, society, institutions, local communities, government, and national and international groups and organizations. (Dawson and Yang 2016:3). Higher education institutions, especially

universities, are now more academically competitive because of the creation of IRs because self-archiving has made previously undiscovered research treasure visible.

### **State of Research Output in Nigeria**

Research is the highest pedestal in the academic environment and to showcase this, Nigeria has a large number of universities but few researchers in comparison to its population, only one-third of its researchers have a PHD or an equivalent degree. Nigeria has been making strides in scientific research output over the years. According to Scopus database, Nigeria has been increasing its research output steadily since 2010 with particular focus on medicine, agriculture and environmental science. Currently Nigeria is ranking third in Africa in terms of research output with over 10,000 scientific publications. Scimago stated that Nigeria produced 13, 5504 scientific papers as at April 2022 ranking Nigeria third out of the fifty nine countries in Africa. Nigeria has been on a steady but slow rise in terms of research output.

Researchers from Nigeria produced 9,299 scientific publications in 2018, which is more than 12% of the total research output in Africa. Since 2018, the h-index, which evaluates the productivity of scientific publications and the effect of their cumulative citations have slightly risen. The h-index of research output in Nigeria is currently 260 but compared to South Africa and Egypt, this is low as the h-index of South Africa is 567 while Egypt is 349. Scimago's Institutions Ranking in 2018 showed that Nigerian universities did not rank among the top 700 universities worldwide but currently this situation has slightly improved as University of Ibadan and Covenant University takes the lead among the first Nigerian universities coming in at the number 664. Moreover, Nigeria has nearly four times as many universities as Egypt and over six times as many as South Africa, yet its universities do poorly in research, producing only 44% of

South Africa's and 32% of Egypt's "scholarly output." Open access of research documents has been on a steady increase in Nigeria; 8,766 (52.35%) in 2021. To make better policies, knowledge and information is essential, the level of research output in Nigeria has not remarkably increased; research is being carried out in different universities in Nigeria, in fact this is a prerequisite for graduation in postgraduate school but the low indicators has shown that Nigerian researchers can do more to surpass their counterparts and this can only be greatly achieved through the use of institutional repository.

### **Effectiveness of Institutional Repository in Facilitating Research in Universities**

Education is all about learning and transforming individuals and also community development and expansion through skills, knowledge, personal and interpersonal efficacy. University education is the significant factor to career opportunities, better outcomes in life and even health (McMahon as cited in Wood, 2017). The core business of the university is the intellectual work of the academics which most of them are documented in research papers and information resources. Knowledge is created and shared in higher education institutions like universities in the form of academic research, learning, teaching, study, and community service. The institutional repository serves as the hub for communication and research growth among academics from various universities. They are crucial in creating and transforming institutions. Ukwuoma & Dike (2017) was of the opinion that all higher education institutions have research dissemination as their primary goal, and institutional repositories help them carry out this objective by allowing them to share knowledge and research findings with the world's research community.

There are certain problems with access and dissemination of research in Nigeria and other higher education institutions in underdeveloped nations. A lot of scholarly research is



produced by universities but access to these works is limited to faculty members locking out other potential users from access. Ezema in Wakro (2018). Research can only fully make an impact when people from different parts of the world see it and make positive or negative contributions. The more these research discoveries are circulated, the more likely they are relied upon and used for innovation and citations. Without citations, practice is slow and most times not seen. This implies that going through the process of research without sharing its findings are a waste of time and resources. Lwoga & Questier, (2014: 117). Resources for research are scarce in developing countries like Nigeria and the ones managed to be done are shelved in personal computers which most times are lost in transmission, with the development of IR these research contents are exposed to a wider audience, materials are preserved such that data cannot be changed, damaged or altered for malicious use and these contents can be accessed by many users in different locations at different times but there are challenges that hinder access and dissemination of Institutional Repositories especially in developing countries like Nigeria.

### **Challenges that Hinders Institutional Repository for Research in Nigeria**

Research output is the mainstay of higher institutions around the world; universities are ranked in terms of their scholarly output that are visible globally but the majority of universities in developing countries of higher institutions especially Nigeria is yet to embrace the institutional repository because of the challenges associated with access. The challenges include *Limited infrastructure and resources*: The biggest challenge institutions have in establishing and sustaining IR is lack of financing. When compared to their counterparts in industrialized countries, Nigerian institutions have less access to financial resources. (Bashiru in Adeyemo 2021). The cost of establishing and maintaining an institutional repository requires significant

infrastructure and resources including hardware, software, storage and personnel.. The cost of maintaining an institutional repository is on the high side and most universities in Nigeria receive their budget allocation from the government which has been declining over the years (Musa et al, 2014).

*Digitization:* Access to institutional repositories is hindered in universities by the difficulty of digitization because it takes expertise and time to properly identify, select, scan, and deposit publications materials into IRs in order to convert retrospectives of non-digital publications into digital forms. The employees at the library are also indirectly impacted by this problem because this conversion rests entirely on them on top of all the other tasks they have to do. (Ridwan 2015).

*Limited awareness and understanding:* When something is not known it cannot be accessed, ignorance and lack of awareness of IR is another major challenge facing access to IR in higher institutions. Christain (2008) identified that the main problem impeding IR in developing nations' growth, progress, and accessibility is a lack of understanding of institutional repositories. Academic library employees find it tough and problematic to upload scholarly resources to the repository; the majority of university academics, staff, and students are unaware of what is known as an institutional repository. Low open access advocacy in Nigeria is a factor in the country's poor institutional repository awareness.

*Limited expertise:* Modern societies are driven by skills, but it can be difficult to access the institutional repository due to this. There is a shortage of trained labor to manage and maintain the institutional repository. Higher education institutions lack the expertise needed to run the institutional repository. Setting up an institutional repository calls for a specialist in information security, digital preservation, and metadata standards skills. Ezema (2013) discovered that

finding the appropriate skills for troubleshooting equipment, such as scanners, computer systems, and IR software, among other things, is a challenge linked with digitizing for research output.

*Power supply:* Electricity (power supply) and internet connectivity has been a challenge in developing countries especially Nigeria, the low voltage and internet service providers has been a long standing issue that defeats the purpose of the institutional repository. The IR has to be fast, reliable and always connected but when these things are not stable it becomes a challenge in accessing the institutional repository. Fatunde in Adeymo (2021) observed that poor electricity supply is a major challenge to the growth and operation of ICT facilities in Nigeria.

*Intellectual property right:* this is an aspect of the law that entails the different legal rights that exist in creative works. This kind of law embraces exclusive rights in copyrights, trademark, patent, industrial designs, trade name, trade secrets etc. the copyright law gives individual rights on how to deal with a written work; these could be research papers or journal articles. A copyright holder has the right exclusively to give access to copying, recopying and distribution of a written research. This has been an issue of concern in the access of IR. Most researchers are concerned with violating the copyright agreements that they signed with their publishers in depositing their scholarly research output in the institutional repository. These issues range from plagiarism, piracy, photocopying and no visible policies guiding copyright matters and their implementation when depositing their work in the IR in Higher institutions in Nigeria. (Okorom & Abioye 2017).

## **Conclusion**

From the discussions made in the study, the study made the following conclusions: institutional repositories can serve as an enabler to research in Nigerian universities by providing

a central platform for researchers to archive, manage and disseminate their research output; this will enhance research visibility, increase the impact of research and improve access to research output. The adoption and use of IRs in Nigerian universities is relatively low due to factors such as inadequate infrastructure, intellectual property rights and low awareness among researchers, to fully realize the potentials of institutional repository as an enabler for research, there is need for universities in Nigeria to invest in the necessary infrastructure , provide institutional support for the establishment and maintenance of IRs and also promote awareness and training programme to increase the uptake and use of institutional repository among researchers.

Overall institutional repositories have the potential to contribute significantly to the development of research in Nigerian universities by enhancing visibility and accessibility of research outputs, promoting collaboration and knowledge sharing and improving the overall quality and impact of research.

### **Recommendations**

1. There is a need for an increase of funds in universities in Nigeria. There has to be an increase in the budget allocation for the educational sector in Nigeria. Government and international donor agencies should come to the aid of universities in Nigeria and ensure that these situations improve and this will in turn improve access in the institutional repository.
2. There should be awareness programs and strategies put in place for universities in order for the university community to deposit their research works in the repository. This could be done through social media platforms such as facebook, Whatsapp, Twitter also making use of websites, emails, library orientation, information literacy classes; this will cause more access to the institutional repository in universities.

3. There should be training, retraining and workshops conducted for library staff in retrospective conversions so as to be fully equipped on how to handle these resources.
4. There is a need for policies to guide repository managers on ownership, quality standards, intellectual property and contents deposited in the IR. These policies should be enforced and made mandatory for all works that are uploaded in the repository; these works should pass through certain processes that have been authorized.
5. The authors of the institutional repositories should be properly educated on intellectual property rights. There should be penalties for offenders.
6. Solar, inverters and generators should be in place to address the problem of electricity especially in the libraries of these higher institutions where institutional repository servers are housed. This will enable more access in the institutional repository.

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