

**MOTIVATION OF LIBRARIANS ON THE DEVELOPMENT OF INSTITUTIONAL  
REPOSITORIES: THE CASE OF FEDERAL UNIVERSITIES IN NORTH- EAST,  
NIGERIA**

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**Abstract**

*The objective of the study was to explore the factors motivating librarians for the development of Institutional Repositories (IRs): The Case of Federal Universities in North East Nigeria, the study adopted quantitative approach using cross sectional survey design. The population of the study was made up of one hundred and forty (140) librarians in the seven (7) university libraries of federal universities in the North East, Nigeria. Using census sampling technique, the entire population was used employed as the sample size. A self-developed was used to collect data from the study. The questionnaire was tested for validity to ensure that what was asked was based on the link between the questions and the aim of the study. The instrument was pretested and obtained the cronbach's alpha value of 0.711 to 0.843. A total of 140 copies of questionnaire were administered to the respondents, out of which 98(70.0%) copies were duly completed, retrieved, and found usable for the analysis. Descriptive and inferential statistics were used to analyse the data collected. Findings of this study revealed that by creating awareness about the existence of institutional repositories, creation of policy for mandatory self-archiving by the university, provision of adequate funding, training and retraining of staff to acquire skills on institutional repositories, provision of adequate infrastructure, creation of awareness on copyright and intellectual property issues and up to- date ICT facilities,*

*universities would overcome the identified challenges associated with the development of institutional repositories in the university libraries in the North East Zone, Nigeria. The study further revealed that lack of awareness about the existence of institutional repositories; copyright and intellectual property issues were major challenges; moreover inadequate funding, poor state of ICT infrastructure, and lack of skills for institutional repositories were among the challenges associated with the development of institutional repositories in the libraries understudy. The study then recommended for more awareness to scholars on the best practices to self-archive their articles and other works legally protected without infringing copyright laws to promote awareness, usage and adoption of institutional repositories. This study further recommended that universities should formulate comprehensive policies to govern development of their IRs. The university libraries understudy should put effort into adding more computers in the libraries among others and training their staff on institutional repositories.*

**Keywords: Motivation, Librarians, Institutional Repositories, Federal Universities, North- East, Nigeria**

## **Introduction**

A library is identified as integral part of any institution of learning. This without doubt indicates that the success of any academic institution depends on the quality of its library as well as the condition it is. In this regard, universities have libraries that are established to support teaching, learning and research. Library is as an indispensable instrument for intellectual development, being a store house of information to which users, specifically students, lecturers as well as researchers turn to, for accessing information. Aguolu (2002) noted that university library is the heart of the university. Additionally, the academic health, intellectual vitality and effectiveness of any university depends largely upon the state of health and excellence of its library, which is its lifeblood.

University libraries house materials which are selected by experts based on user need and made accessible for reference or borrowing. It provides physical or digital access to information material which may be found out in a physical location or a virtual space or both. A library's collection may include books, periodicals, newspapers, manuscript, films, maps, print documents, microform, CDs, cassettes, videotapes, images, sound, DVDs, blu-ray Discs, e-books, audiobooks, dictionaries and encyclopedias, databases,

and other formats.

University libraries provide various types of information services to their users to satisfy different information requirements. Services offered by Academic libraries; include referral service, current awareness service (CAS), selective dissemination of information (SDI) service, literature search service, document delivery service (DDS), translation service, Web-OPAC service, article indexing service, lending services, electronic document delivery service, outreach service, library service, and reprography service.

Nowadays, due to developments in Information and Communication Technologies (ICTs), there has been a paradigm shift in information services provided by university libraries. There is a shift from manual ways of carrying out information services powered by analog data to electronic ways of accessing and retrieving information powered by electronic gadgets such as the World Wide Web (WWW) and handsets. This shift is indispensable because for the academic libraries to be where their users are, they have to fully recognize the fact that the world is living in virtual realities. According to Harande and Umar (2021) libraries as social institutions obviously contribute to the overall sustainability and development of every society through its provision of information resources and services. Users of academic libraries now expect to be given what they need, when they need it and from which ever location they may be (Ajogboye, 2010). The global trend is characterized by a fundamental shift from traditional information environment to where emphasis is placed more on the acquisition of e- resources, e- journal, as well as online databases.

Effective information services that meet the needs and aspirations of citizens, decision makers and life-long learners is a long-standing role of the information profession. Information service encompasses services through which Librarians directly supply users with not only information but also interfaces created by librarians and adjusted to users through which users can independently find needed information. However, for university libraries to provide effective and functional information services, such libraries must

be ready for the adoption and use of institutional repositories and institutions have to support and nurture their faculties innovative explorations of how the digital medium can be utilized to enhance teaching and learning by enabling access to their works of scholarship. The importance of information services for educational activities cannot be overemphasized. Information services support the provision of effective educational activities like teaching, learning and research. Institutional repositories are collection of information resources that support teaching, learning and research in institutions of higher learning. Such resources include theses, dissertations, peer-reviewed journals, articles and conference proceedings. According to Auyo, Abdu and Yahaya (2023) Institutional repositories have the potential to increase the visibility and provide a better picture of scientific and technological research outputs, specialization and also increase the accessibility and impact of research both preserve and maintain the research outputs. Such outputs found in a repository are datasets, including diagrams, video and audio files, spreadsheets, photographs, charts, artwork representations, Monographs, books and book chapters are also found in institutional repositories since they are creations of the institution's scholars.

Most datasets these days are now being created, access to these resources are made possible via or through the use of modern day information and communication technologies. It is therefore, necessary for university libraries to adopt and provide such resources for effective use of institutional repositories.

Auyo, Abdu and Yahaya (2023) noted that a library is an organized collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing. It provides physical or digital access to material, and may be in a physical building or room, or a virtual space, or both.

Crow (2016) on the other hand, considered an institutional repository as a digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end users both within and outside the institution, with few, if any, barriers to access. Institutional

repositories refers to strategy through which literature can be made freely available and accessible to the public, searchable, harvestable, useable by a wider readership (on the internet); and visibility of both the researcher, scientist and the institution are increased by the institutional repository (Onyancha, 2011). Although institutional repositories are associated with academic institutions and research institutes, other large organisations and corporate organisations such as government, non-governmental organisations (NGOs), as long as they generate digital documents can establish institutional repositories. These organisations will use the repositories for purposes of archiving and preserving their institutional histories and administrative documents and these documents most likely remain proprietary and not open access (Drake, 2004 & Chisenga, 2006).

Institutional Repositories are valuable platforms which can offer instant access to information and knowledge resources (Auyo, Abdu and Yahaya, 2023). These repositories broadening access to researches and strengthen scholars control over scholarship, increase competition and reduce dominance of journals; serve as an indicator of an institutions quality, demonstrate scientific, societal, and economic relevance of research activities, increase institutions visibility and public value, ensure storage of all types of institutional output, including unpublished literature and have the ability to keep track of and analyze research performance among others.

In our interaction with the physical world, it is necessary to process information for the purpose of making sense of the world and also making ourselves safe and reassured. Since human beings enjoy the abilities to see, hear, touch and taste, we are able to sense the outside and be aware of what happens around, and this process of sensing the outside world is completely by our perception, which is with our sensory organs. This quality allows us to recognize and identify the existence of all kinds of stimuli and then evaluate and give meaning to them. Therefore, this study is conducted in order to examine the factors motivating librarians in university libraries towards the development of institutional repositories with reference to federal Universities in North-East Geo political Zone of Nigeria. The study uses quantitative research methodology with cross-sectional research design for the conduct

of the research.

### **Challenges Militating Against the Development of Institutional Repositories**

A number of authors tackled the issue of institutional repositories in the African landscape in terms of the problems they encounter, need for support, advocacy issues, policy considerations and many other problems. For instance, Okede and Owate ( 2006) pointed out that the problems of institutional repositories in Nigeria are poor ICT infrastructure, poor institutional funding of institutional repositories, absence of institutional repositories policies, lack of awareness of publishing in institutional repositories, irregular power supply, lack of man power training, and low internet bandwidth in the country.

Corletey (2011) study of the repositories of four academic institutions in Ghana with a view to find out how these repositories met the challenges of technical support, content provision, qualified personnel, and institutional backing, and also revealed that all the four institutions had problems with their repositories. While two of the institutions were completely out, two were uploading some content but their platform was only visible within the library. The study concluded that the absence of policy legalizing the operation of the repositories made it difficult for the managers to request for equipment, content and qualified staff to run the repositories.

Uzuegbu (2012) highlighted the need for regional and international support for IRs in Africa and recommended that an African- wide policy on institutional repositories creation by concerned institutions, its visibility and interoperability should be made and signed by African countries through organs like the African Union in collaboration with the International Federation of Library Associations (IFLA) - Africa Section. Moahi (2016) stressed the importance of addressing certain policy considerations for the successful uptake and use of institutional repositories in Africa. According to him, these include issues of interoperability which ensures output discoverability and the institutional repositories availability and accessibility at all times, and that the system used for deposit and searching for output must be simple and user-

friendly.

As for advocacy, Ezema and Okafor, (2015) examined advocacy issues in open access institutional repositories in Nigeria. They found that advocacy is very critical in attracting funds and creation of awareness for institutional repositories in Nigeria and the major advocacy strategies are the use of institutions websites, face to face interaction with target groups, seminars and workshops, the issue of managing institutional repositories also has received attention in the literature. Alhaji (2007) revealed that the reason why Nigerian university libraries are lagging behind with digitization and development of institutional repositories is that most libraries have not yet embraced the idea of the electronic library. The author further indicated that most university libraries and university administrators have not come to terms with the latest trends in relation to the vision, management, operations, funding and staffing of the university libraries in order to enable them to function as electronic information dissemination hubs.

Electricity supply is one of the major problem in developing countries like Nigeria. This problem has made the development of projects like an institutional repository in Nigeria much difficult and expensive. Fatunde (2008) has observed that poor electricity supply is a major impediment to the operation and growth of information and communication technology in Nigerian universities. According to him, only a trickle of daily electricity production dribbles erratically in to the country's 93 institutions, rendering ICT systems dysfunctional. Universities resort to diesel-propelled generators, but they are expensive and environmentally unfriendly. Nigeria produces about 2,500 megawatts a day of electricity – ten times less than its daily need.

The extent to which this problem affects ICT projects in the Nigerian educational sector is self-evident. For example, in 2001 the National Universities Commission (NUC) in Nigeria commenced development of the virtual library project. The need for the project was to create a central digital repository that will assist the Nigerian university system in terms of acquisition

of electronic resources to supplement the resources available in the individual university libraries. Another institution that has had to deal with this problem in its effort to develop an institutional repository is the International Institute of Tropical Agriculture (IITA), the institution which is at the final stage of developing an open access institutional repository also had to locate its server in the United Kingdom due mainly to the incessant problem of power supply in Nigeria.

Evidently, the state of ICT infrastructure in academic and research institutions in developing countries like Nigeria is so low to sustain the development of institutional repositories. 27.4% of the respondents at the University of Lagos strongly agreed that inadequate information and communication technology infrastructure is a problem to the development of institutional repository at the university, 46.8% agreed to that proposition. Various other researches have also confirmed that many institutions in developing countries face an unreliable electricity supply, poor internet connections, as well as a lack of adequate computer equipment, appropriate software, and even technological expertise (Arunachalam, 2003). Henceforth, a viable digital repository project will first require serious upgrading of the current state of ICT facilities in many academic and research institutions in Nigeria.

In addition Abubabakar and Yahaya (2024) stated that the development of institutional repository by universities is much capital intensive project developing countries than in developed countries, and lack of funding is considered the major problem experienced by their institutions in their effort to establish digital repositories. This is because academic and research institutions in developed countries already have in place a well-established state of ICT infrastructure to build on, while in developing countries, this infrastructure or foundation is not in place and will require huge financial resources to put them in place.

Ivwhreghweta (2012) also carried out a study in six universities in Nigeria where the opinions of 300 researchers and policy makers were sampled,



which discovered that funding was identified by most of the respondents as the major problem confronting the establishment of institutional repositories in most Nigerian universities.

Another issue that may affect the development of institutional repository is Intellectual Property right; for instance, the International Institute of Tropical Agriculture (IITA) in Nigeria institutional repository could not go public due to some copyright issues that needed to be resolved. It happened that copyright in research works conducted by the researchers at the institute was signed away to the journal publishers when the papers were submitted to commercial journal publishers for publication. Intellectual property right is an aspect of law that covers diverse legal rights that exists in creative work. Intellectual property law embraces such exclusive rights in copyright, patent, trademark, industrial designs, trade secret, trade name etc. Copyright law determines how a person can deal with a written work such as a journal article or a research paper. Generally, a copyright holder has the exclusive right to authorize the copying, recopying or distribution of the written work.

### **Statement of the Problem**

Developments in Information and Communication Technologies (ICTs) have greatly changed the daily operations in information organizations, including university libraries. Such libraries are increasingly adopting technology-based solution to provide and improved quality information services to users. Library professionals have been part of the global information infrastructure, ideological and cultural force with far reaching implication in society. Their libraries have become a major part of mainstream educational landscape with open source platforms being a worldwide phenomenon. The emergence of digital technologies and the availability of open source solutions have enabled several institutions libraries embark on building institutional repositories.

However, despite the shift in information service provision particularly with the emergence of institutional repository that has provided universities and academic institutions in Nigeria with an opportunity to make their grey literature and research output accessible to the outside world, the motivation

of many academic librarians on the development of institutional repository has been observed to be vague. Thus, many of them as preliminary observed, have little knowledge on the subject matter despite its importance and this may be connected to the challenges affecting the development of the innovation. Additionally, this could be the reason why most librarians are not ready to develop institutional repositories and even those few that have or are planning to develop it, seems to be very low. It is for this reason that the research was embarked to determine the the Motivation of Librarians on the Development of Institutional Repositories with reference to Federal Universities in North- East, Nigeria. The study also identified challenges and proffered solutions which will go a long way in addressing the identified challenges.

## **Objectives**

The main objective of this study is to investigate the Motivation of Librarians on the Development of Institutional Repositories: The Case of Federal Universities in North- East, Nigeria. While the specific objectives are as follows:

1. To investigate the Factors motivating the development of Institutional Repository among Academic Librarians in Federal Universities in Northeast, Nigeria
2. To investigate the challenges militating the Development of Institutional Repositories among Academic Librarians
3. To explore some possible measures for addressing the identified militating challenges for better up.
4. To establish if a relationship exists between the factors motivating the development of Institutional Repository and Challenges militating the Development of Institutional Repositories among librarians

## **Hypothesis**

**H<sub>0</sub>:** there is no significant relationship between the factors motivating the development of IR and challenges militating the development of institutional

repository in federal universities in North East Nigeria

## Methodology

The objective of the study was to explore the factors motivating librarians for the development of Institutional Repositories (IRs): The Case of Federal Universities in North East Nigeria, The study adopted quantitative approach using cross sectional survey design. The population of the study was made up of one hundred and forty (140) librarians in the seven (7) university libraries of federal universities in the North East, Nigeria. Using census sampling technique, the entire population was used employed as the sample size. A self-developed was used to collect data from the study. The questionnaire was tested for validity to ensure that what was asked was based on the link between the questions and the aim of the study. The instrument was pretested and obtained the cronbach's alpha value of 0.711 to 0.843. The questionnaire was distributed by the research assistants. A total of 140 copies of questionnaire were administered to the respondents, out of which 98(70.0%) copies were duly completed, retrieved, and found usable for the analysis. Descriptive and inferential statistics were used to analyse the data collected.

## Findings and Discussions

### Factors motivating the development of Institutional Repository

Respondents were asked to indicate the factors that facilitate the use of institutional repository and the respondents' responses are presented in the Table 1.

**Table 1 Factors motivating the development of Institutional Repository**

S/N	Performance Expectancy	Frequency (Percentages)		
		Strongly Agree/ Agree	Neutral	Disagree/ Strongly Disagree
a.	Development of	61(62.2%)	16( 16.3%)	21(21.4%)

	institutional repository would broaden access to research			
b.	Development of institutional repository would reaffirm scholars control over scholarship	59(60.2%)	14(14.3%)	25(25.5%)
c.	Development of institutional repository would increase competition and reduce dominance of journals	42(42.9%)	25(25.3%)	31(31.6%)
d.	Development of institutional repository would serve as an indicator of an institutions quality demonstrating the scientific, societal, and economic relevance of its research activities.	55(56.1%)	19(19.4%)	24(24.5%)
e.	Development of institutional repository would increase the institution's visibility status and public value.	34(34.6%)	39(39.9%)	25(25.5%)

The result in the table 1 showed the factors motivating the use of institutional repository in university libraries in the North East zone, Nigeria. Performance expectancy results showed that majority 61(62.2%) of the respondents agreed that development of institutional repository would broaden access to research, 21(21.4%) disagreed that development of institutional repository would broaden access to research, while only 16(16.3%) of the respondents were Neutral on the notion. Whereas 59(60.2%) of the respondents agreed

that development of institutional repository would reaffirm scholars control over scholarship, 25(25.5%) disagreed that development of institutional repository would reaffirm scholars control over scholarship, and 14(14.3%) were Neutral on the statements. Also, a good number of 42(42.9%) of the respondents agreed that development of institutional repository would increase competition and reduce dominance of journals, while 31(31.6%) disagreed that development of institutional repository would increase competition and reduce dominance of journals, and 25(25.3%) were Neutral with the notion.

Similarly, majority 55(56.1%) of the respondents agreed that development of institutional repository would serve as an indicator of an institution's quality demonstrating the scientific, societal, and economic relevance of its research activities, few 24(24.5%) of the respondents disagreed that development of institutional repository would serve as an indicator of an institutions quality demonstrating the scientific, societal, and economic relevance of its research activities, and only 19(19.4%) were Neutral with the notion. Further 34(34.6%) of the respondents agreed that development of institutional repository would increase the institution visibility status and public value, 25(25.5%) of the respondents disagreed that development of institutional repository would increase the institution visibility status and public value, while 39(39.9%) were Neutral on the statement.

S/N	Effort Expectancy	Frequency (Percentages)		
		Strongly Agree/ Agree	Neutral	Disagree/ Strongly Disagree

1	Institutional repository is easy to use	72(73.5%)	7(7.1%)	19(18.3%)
2	The use of institutional repository requires a lot of effort	37(37.7%)	28(28.6%)	33(33.7%)
3	It is easy to use institutional repository even when one had not used it before.	35(35.7%)	13(13.3%)	50(51.0%)
4	Using institutional repository is not frustrating	63(64.3%)	14(14.3%)	21(21.4%)
5	Using Institutional repository improves my productivity	54(55.1%)	20(20.4%)	24(24.5%)

Table 2 also showed the effort expectancy result. Majority 72(73.5%) of the respondents agreed that institutional repository is easy to use, few 19(18.3%) of the respondents disagreed that institutional repository is easy to use, and only 7(7.1%) were Neutral with the notion. Less than half of the respondents, 37(37.7%) agreed that the use of institutional repository requires a lot of effort, 33(33.7%) of the respondents disagreed that the use of institutional repository do requires a lot of effort, while 28(28.6%) of the respondents were Neutral on the notion. 35(35.7%) of the respondents agreed that it is easy to use institutional repository even when one had not used it before, majority 50(51.0%) of the respondents disagreed that it is easy to use institutional repository even when one had not used it before, while 13(13.3%) were Neutral on the notion. Majority 63(64.3%) of the respondents agreed that using institutional repository is not frustrating, very few 21(21.4%) of the respondents disagreed that using institutional repository is not frustrating, and 14(14.3%) were Neutral on the notion. More than half 54(55.1%) of the respondents agreed that using institutional repository improves one's productivity,

24(24.5%) of the respondents disagreed that using institutional repository improves ones productivity, while 20(20.4%) were Neutral on the item.

The present study findings are consistent with the study of Agufana, Too and Mukwa (2018) who explore the relationship between Perceived Ease of Use and institutional repository by Lecturers in Technical Training Institutions in Kenya. The findings of the study revealed that, using institutional repository services was easy, lecturers interacted with institutional repository flexibly, and their interaction with institutional repository was easy. Also, it is consistent with the submission of Anenene, Gebriel, and Olawale (2017) where they conducted a study on Factors Contributing to the adoption of institutional repositories in universities in South- West Nigeria, they revealed that majority of the respondents had a high level of awareness when it comes to the issue of institutional repository, as 15 (50.0%) noted that they had a very high level awareness of institutional repository and 11 (36.7%) indicated that their own awareness level was high. This indicates that the library staff are in line with the present age and the trends in the provision of open access publications. With this level of awareness, it is expected that they would advocate for the establishment and the continued sustenance of institutional repositories in their various institutions.

The findings of this study are also in line with that of Lwoga and Questier (2009) who equally found out that effort expectancy motivated faculty members in health sciences universities in Tanzania from the adoption and use of open access scholarly communication in health sciences.

This is an indication that the major factors that facilitate the use of institutional repository in the university libraries in north east zone, Nigeria were both performance and effort expectancy. Hence, academic librarians working in the institutions under study believed that they were useful since they broaden access to research, reaffirm scholars control over scholarship, increase competition and reduce dominance of journals. They are indicators of an institution's quality demonstrating the scientific, societal, and economic relevance of its research activities and increase the institution visibility status and public value.

### Challenges Associated with the Development of Institutional Repositories

Respondents were asked to kindly indicate the challenges associated with the development of institutional repository in their institutions using "Yes" and "No". Their responses are presented in Table 3

**Table 3: Challenges associated with the development of institutional repository**

S/N	Challenges	Yes	No
		Frequency (Percentages )	Frequency (Percentages )
a	Problems of inadequate funding.	66(67.3%)	32(32.6%)
b	Lack of awareness about the existence of Institutional repository.	17(17.3%)	81(83.0%)
c	Lack of mandatory self- archiving policy by the university	49(50.0%)	49(50.0%)
d	There is poor state of ICT infrastructure.	31(31.6%)	67(68.4%)
e	Copyright and intellectual property issues	21(22.4%)	77(78.6%)
f	Some members of the university community are not interested in institutional repository.	39(39.8%)	59(60.2%)
g	Lack of skills needed for the development of institutional repository.	57(58.2%)	41(41.8%)

Table 3 showed the results of the challenges associated with the development of institutional repositories in the institutions under study. Major opinions could be seen there 81(83.0%) of the respondents consider that lack of awareness about the existence of institutional repository, 77(78.6%) revealed that copyright and intellectual property issues, are not addressed, and 66(67.3%) consider inadequate funding, while 57(58.2%) dwelt on lack of skills needed for the development of institutional repository as the major challenges faced in the development of institutional repositories. Minority



decisions showed that 49(50.0%) saw lack of mandatory self- archiving policy by the university, 39(39.8%) observe that some members of the university community were not interested in institutional repository and 31(31.6%) labeled poor state of ICT infrastructure as the major challenges towards the development of institutional repositories.

This study findings corroborate with the study of Christian (2008) who conducted a study in University of Lagos and the International Institute of Tropical Agriculture (IITA) and reported that majority of the respondents (49.2%) strongly agreed, while (21.5%) agreed that inadequate funding was indeed a challenge facing the establishment of institutional repositories in Nigeria. This study also agreed with that of Iwighrehweta (2012) who carried out a study in six universities in Nigeria where the opinions of 300 researchers and policy makers were sampled. The results showed that 150 (50%) agreed and (47%) strongly agreed that funding was the major problem confronting the establishment of institutional repositories in most Nigerian universities.

The present study must acknowledge the study of Mutwiri (2014) on challenges facing academic staff in adopting open access outlets for disseminating research findings in selected university libraries in Kenya. It showed that awareness of institutional repository among academic and library staff was generally high with about 66% of academic staff and 71% among library staff. The levels appear slightly higher among library staff than academic staff. Also the study has to acknowledge the study of Okede and Owate (2006) as they pointed out that the problems of institutional repositories in Nigeria are poor ICT infrastructure, poor institutional funding of institutional repositories, absence of institutional repositories policies, lack of awareness of publishing in institutional repositories, irregular power supply, lack of man power training, and low internet bandwidth in the country.

The study is consistent with the study of Corletey (2011) who studied the repositories of four academic institutions in Ghana with a view to find out how these repositories met the challenges of technical support, content provision, qualified personnel, and institutional backing. Findings revealed that all the four institutions had problems with their repositories. While two were

completely out, two were uploading some contents but their platform was only visible within the library. The study concluded that the absence of policy legalizing the operation of the repositories made it difficult for the managers to request for equipment, content and qualified staff to run the repositories. Alhaji (2007) revealed that the reason why Nigerian university libraries are lagging behind with digitization and development of institutional repositories is that most libraries have not yet embraced the idea of the electronic library. The findings indicated that most university libraries and university administrators have not come to terms with the latest trends in relation to the vision, management, operations, funding and staffing of the university libraries in order to enable them to function as electronic information dissemination hubs.

Also, it is consistent with the submission of Fatunde (2008) who observed that poor electricity supply is a major impediment to the operation and growth of information and communication technology in Nigerian universities. According to him, only a trickle of daily electricity production dribbles erratically into the country's 93 institutions, rendering ICT systems dysfunctional. Universities resort to diesel-propelled generators, but they are expensive and environmentally unfriendly. Nigeria produces about 2,500 megawatts a day of electricity – ten times less than its daily needs. The extent to which this problem affects ICT projects in the Nigerian educational sector is self-evident.

From the above findings it is an indication that lack of awareness about the existence of institutional repository, copyright and intellectual property issues which are not addressed; inadequate funding; lack of skills needed for the development of institutional repository; lack of mandatory self-archiving policy by the university; some members of the university community are not interested in institutional repository; and poor state of ICT infrastructure were the major challenges associated with the development of institutional repository in the university libraries in the North East Zone, Nigeria.

### **Measures for addressing the Challenges for better up**

Respondents were asked to kindly indicate what could be done to overcome the identified challenges associated with the development of institutional repository in their institutions using "Yes" and "No". Their responses are presented in Table 4.

**Table 4: Measures taken to overcome the challenges**

S/N	Measures	Yes	No
		Frequency (Percentages )	Frequency (Percentages )
a	Provision of adequate funding	66(67.3%)	32(32.6%)
b	Creating awareness	81(83.0%)	17(17.3%)
c	Provision of adequate infrastructure	49(50.0%)	49(50.0%)
d	Up to- date ICT facilities	31(31.6%)	67(68.4%)
e	Creation of policy for mandatory self-archiving by the university	77(78.6%)	21(21.4%)
f	Creation of awareness on copyright and intellectual property issues	39(39.8%)	59(60.2%)
g	Training and retraining of staff to acquire skills on institutional repository	57(58.2%)	41(41.8%)

Table 4 showed the results of the solution to the identified challenges associated with the development of institutional repositories in the institutions under study. Major position could be seen where 81(83.0%) of the respondents believe in creating more awareness about the existence of institutional repository, 77(78.6%) in creation of policy for mandatory self-archiving by the university, 66(67.3%) in provision of adequate funding, 57(58.2%) on training and retraining of staff to acquire skills on institutional repository to overcome the identified challenges faced.

Minor position could be seen where 49(50.0%) believe in provision of adequate infrastructure, 39(39.8%) in creation of awareness on copyright and intellectual property issues and 31(31.6%) in up to-date ICT facilities to overcome the identified challenges.

The present study corroborates with the submission of Uzuegbu (2012) who highlighted the need for regional and international support for institutional repository in Africa and recommended that an African-wide policy on institutional repositories creation by concerned institutions, its visibility and interoperability should be made and signed by African countries through organs like the African Union in collaboration with the International Federation of Library Associations (IFLA) - Africa Section. The finding of this study is in line with the submission of Moahi (2016) who stressed the importance of addressing certain policy considerations for the successful uptake and use of institutional repositories in Africa. According to him these include issues of interoperability which ensures output discoverability and the institutional repositories availability and accessibility at all times, and that the system used for deposit and searching for output must be simple and user- friendly. Also, Ezema and Okafor, (2015) who examined advocacy issues in open access institutional repositories in Nigeria. They found that advocacy is very critical in attracting funds and creation of awareness for institutional repositories in Nigeria and that major advocacy strategies are the use of institutions websites, face to face interaction with target groups, seminars and workshops. The issue of managing institutional repositories also has received attention in the literature.

**Table 5:** Relationship between the factors motivating the development of IR and challenges militating the development of institutional repository in federal universities in the North East Nigeria. To establish the relationship, the study formulated a null hypothesis that: there is no significant relationship between the factors motivating the development of IR and challenges militating the development of institutional repository in federal universities in North East Nigeria. To test the above hypothesis, the PEARSON statistical analysis was used. The results of the analysis are shown in Table 5.

**Table 5: *Pearson analysis on the relationship between the factors motivating the development of IR and challenges militating the development of institutional repository in federal universities in the North East Nigeria***

	<i>Factors</i>	<b>Challenges Experienced</b>
<b>Factors</b>		
Pearson Correlation	1	.241**
Sig. (2- tailed)		.000
N	98	98
<b>Challenges Experienced</b>		
Pearson Correlation	.241**	1
Sig. (2- tailed)	.000	
N	140	140

\*Correlation is significant at the 0.05 level (2- tailed)

Table 5: This section compares the motivating the use of Institutional Readiness and the Challenges Experienced in order to see if there is a relationship between the two. Pearson's correlation test results indicated that there were significant positive correlations between the variables. ( $r=0.241$ ,  $n=98$ ;  $p=0.005$ ). Therefore, the study accepts the alternative hypothesis and rejects the null hypothesis since  $p<0.05$ . This implies that there is positive statistically significant relationship between the factors motivating the development of IR and challenges militating the development of institutional repository in federal universities in the North East Nigeria in North East Nigeria.

## Conclusion

Based on the above findings it clearly showed that by creating awareness about the existence of institutional repository, creation of policy for mandatory self-archiving by the university, provision of adequate funding, training and retraining of staff to acquire skills on institutional repository, provision of adequate infrastructure, creation of awareness on copyright and

intellectual property issues and up to-date ICT facilities, universities would overcome the identified challenges associated with the development of institutional repository in the university libraries in the North East Zone, Nigeria.

## Recommendations

Based on the findings, the study recommends for:

1. More awareness for scholars on best practices to self-archive their articles and other works legally protected without infringing copyright laws to promote awareness, usage and adoption of institutional repositories.
2. Universities should formulate comprehensive policies to govern development of their Institutional Repositories.
3. The university libraries understudy should put effort into adding more computers in the libraries among others and training their staff on institutional repository.

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