

Obstacles to the Utilization of Institutional Repositories by Academics in Higher Education in Nigeria

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Abstract

The purpose of this study was to identify the major barriers to the use of institutional repositories by academics in universities of Nigeria with a view to recommending ways of enhancing the utilization of institutional repositories. A descriptive survey was employed in the study. The research population consisted of 491 academics from 5 universities. A questionnaire was used as an instrument for data collection. The questionnaire was designed based on the objectives of the study. The results showed that the major barriers to the utilization of institutional repositories included inadequate infrastructure, a lack of awareness and sensitization of academics and a lack of technical skills. The researchers proposed that these problems may be overcome by formulating institutional policies on repositories, raising awareness among staff and promoting the involvement of management in projects relating to repositories. The study pointed to the need for a collaborative effort by the management of academic institutions and the academic community in working towards the successful use of institutional repositories.

Keywords

Scholarly communication; Research publication; Nigeria; Preservation, Institutional Repository

Introduction

An institutional repository (IR) is a database for preserving the local content of academic institution. Local content consists of materials such as examination question papers, research publications, working papers and inaugural lectures generated in institutions of higher learning. These materials contain information that is relevant for teaching, learning and research in universities. They are often difficult to come by since many of them are not in published form. In some cases, the materials are leaflets that can easily become brittle. IRs provide a safe option for the preservation and accessibility of local content in digital format. IRs preserve and secure records that would have been obliterated by age (Musa, Musa, & Aliyu, 2014).

The utilization of IRs for the preservation of information resources has gone a long way to reducing the crisis of management and preservation, since materials are now digitized and archived according to collections and communities in repository databases. Mohammed (2013) stated that an IR is a way of bridging the digital divide and enabling researchers to attain visibility and to communicate their research findings to the world effectively. According to Fasae, Esew, Alanyo and Holmner (2017), a repository provides services for faculty and researchers who want to archive research and historic materials.

It has been observed that these services are often available but not used properly and that institutions digitize and archive their research output without the university community accessing and using the materials in question. Sometimes, academic communities are not aware of the availability and content of IRs, which leads to these materials not being utilized properly. In that regard, Ivwighrehweta (2012) observed that academics are yet to take full advantage of open access IRs. Based on these facts, this study investigated obstacles to effective utilization of IRs by academics in universities in Nigeria that have IRs.

The following research questions were formulated to guide the study:

- 1 Identifying the major factors that undermine the effective use of institutional repositories by academics in universities in Nigeria.
- 2 Highlighting strategies that will improve the utilization of institutional repositories in universities in Nigeria.
- 3 Highlighting the way forward regarding the effective use of institutional repositories in universities in Nigeria.

Literature Review

Institutional repositories offer several benefits for the management and preservation of the research output generated within universities. These benefits have not been achieved without challenges. Numerous factors that militate against the utilization of IRs, ranging from managerial and infrastructural issues to content submission, have been identified. The provision of content

by authors and researchers of institutions is one of the major challenges. Nixon (2002) asserted that the central challenge for developing an IR does not lie with technical implementation but in instilling a change of mindset among researchers to freely make self-archiving an important part of their academic life. Nwokedi (2010) discovered that many lecturers are not willing to submit their work to IRs. On a similar note, Watson (2006) stated that many articles are received from authors because the articles were requested, but the academics are not really aware of what the libraries will be doing with the papers submitted.

Royster (2007) explained the procedures adopted at the University of Nebraska-Lincoln to get content: the author made an active recruitment, the departmental chairs were contacted to get opportunity to make presentations in faculty meetings, the benefits of self-depositing content was demonstrated, and the author offered to digitize and put their works online. The faculty as a group thought an IR was a good idea but almost none of the academics were willing to devote time to self-archiving their works. Similarly, Bevan (2007) reported that even if academics are happy to self-archive their works, several factors are involved, for example, academics may be subjected to time constraints, archiving may not be part of their schedules and there may be conflicts of interest in publishing in referred journals.

Chan, Kwok, and Yip (2005) listed other challenges such as low levels of awareness of IRs, low levels of awareness of self-archiving rights among faculty members, insufficient institutional support and authors' inability to retain the correct version of their papers as required by publishers. Moreover, copyright has become a difficult issue to resolve (Wu, 2015). Chisenga (2006) pointed out that the uptake of IRs and open access archives on the African continent has been slow as a result of issues relating to the acceptance of electronic information, the absence of information management strategies/policies, issues relating to copyright and intellectual property rights (IPR), inadequate technical infrastructure, a lack of awareness and understanding of the concept of an IR and a lack of funds. Besides these issues, other inherent challenges may be peculiar to an institution or a country. Asamoah-Hassan (2010) highlighted challenges that have been overcome and those that are still being dealt with regarding the Kwame Nkrumah University of Science and Technology's IR, known as KNUSTSpace. The challenges included:

- Sensitization of university management
- Sensitization of library leadership
- Educating faculty and researchers on the submission of content
- Choosing software that will suit the needs of the university
- Formulating policy to guide the operation of the IR
- Registration with international indexing services and repository directories such as the OAI, the ROAR and the IAR to enable global searches
- The sustainability of the IR in terms of funding and content

Similarly, Li and Banach (2011) cited a lack of sustainable funding and inadequate staffing as

obstacles to implementing a successful IR. Since many institutions are still developing their IRs, these issues need to be attended to as part of the planning process. Another challenge is a lack of collection policies, that is, policies that specify what resources should be included in an IR and in what format and who should include them. Adebayo (2009) identified several problems concerning the creation and maintenance of IRs. These problems include the tracking of publications, staffing and getting staff to agree to share their works. These challenges should be addressed by an administration that wants its IR to succeed.

Rahman and Mezbah-Ul-Islam (2014) commented that though the challenges associated with implementing IRs may differ from country to country, a lack of awareness, copyright issues and inadequate funding are among the most common ones. Similarly, Christian(2008) and Yang and Li(2015) identified a lack of awareness of open access IRs as a challenge. Fasae et al. (2017) attributed the challenges to insufficient funds, an unstable power supply and software problems. Schmidt and Shearer (2012) indicated that the Confederation of Open Access Repositories is promoting new strategies for addressing some of the barriers to populating repositories. Moreover, Uwa and Okoro (2009) stated that most researchers find it difficult to utilize IT facilities in the provision of information services, which could be as a result of limited finances, power failures or unskilled personnel. Although these barriers are on the decrease, the legal ramifications of posting published copies of works in subject repositories are still significant because publishers, in their policies, allow postings in IRs and not in subject repositories (Björk, 2013).

In order to minimize the abovementioned problems, it is crucial that strategies be devised for the utilization of IRs. Genoni (2004) stated that academics should be sensitized on the importance of IRs. Most IRs are built on a system of self-archiving, where the producers of items add the items to the repositories and create the necessary metadata. The onus lies on librarians to convince the producers to archive their research output. Tonta, Unal and Al (2007) remarked that researchers who publish articles in open access journals and who self-archive their articles published in referred journals and in their IR help to create a more effective and equitable scientific communication process.

Vishalaand Bhandi (2007) remarked that libraries can be involved in the development of IRs and can serve as collaborators in research and teaching. Further, libraries can educate faculties of academic institutions on the importance of open access for the global sharing of scholarship to enhance the visibility of authors and institutions. There should be a paradigm shift where libraries move from the traditional to a more practical and enriched institutional landscape (Crow, 2002).

Libraries should move beyond fulfilling a custodian role to contributing to the evolution of scholarly communication. Their roles are indispensable because IRs are meant to promote the

research activities of institutions and to enhance their visibility. Ideally, voluntary submissions from researchers will populate an IR and sustain its growth, according to Vishala and Bhandi (2007). The authors further highlighted that in the real world, researchers may support an IR project in principle, but very few take voluntary action. Therefore, a policy statement may be necessary to serve as a reference point and guide for the planning and implementation of an IR project. An IR project should be well planned and the budget mapped out for sustainability, since projects are often suspended as a result of the cost of maintaining equipment.

Ezema (2010) identified the creation of current awareness government sponsorship of IRs, the development of ICT infrastructure in the country, the submission of electronic theses and dissertations, and self-archiving mandates as approaches to adopt in building IRs in Nigeria. Similarly, Jackman (2007), writing on the IR project of the University of Liverpool, stated that one of the strategies adopted in carrying out the project was to develop a marketing strategy and to identify the important segments of the target market that should be reached such as academic administrators and heads of departments. Another strategy was establishing partnerships with the schools and departments; these pilot schools/departments had academic representatives who served as the primary points of contact. Ezema and Okafor (2015) identified the use of institutional websites as an effective means of promoting the implementation of IRs.

The review of literature on problems and strategies relating to the utilization of IRs revealed that authors have tried to identify challenges as they affect Europe, America and Africa. Some of the literally works reviewed focus on the situation in Nigeria (Christian, 2008;Uwa & Okoro, 2009; Ezema, 2011; Musa et al., 2014; Fasae et al., 2017; Ezema & Okafor, 2015; Mohammed, 2013) as far as the following aspects are concerned: a lack of IR creation and maintenance; issues and challenges that affect the creation and implementation of IRs; challenges associated with utilizing IT facilities; and strategies for building IRs. Some of the literature focuses on challenges in the implementation and development of IRs. As a result, it was important to carry out this study to investigate the situation in Nigeria based on the opinion of academics from institutions that have IRs. The findings of this study will help other universities and the Nigerian government to ensure proper planning, thus guaranteeing the effective utilization of IRs by academics.

Materials and Methods

A descriptive survey was used in the study. The population consisted of 491 academics from 5 universities, namely, the University of Nigeria, Nsukka; the Ahmadu Bello University, Zaria; the Covenant University, Ota; the Federal University of Technology Akure; and the University of Jos. Ten percent of the population was randomly sampled to get 491 academics from the 5 universities. These universities were chosen because they have functional institutional repositories. A questionnaire was used to collect data for the study. The questionnaire was structured in line with the research objectives. The questionnaire had two clusters, namely,

cluster A and cluster B. Cluster A had 12 items that centered on barriers while cluster B had 14 items that focused on strategies. The first researcher administered the questionnaires and collected them with the help of a research assistant. A total of 396 questionnaires were collected and used for the study. The data collected was analyzed using mean and standard deviations.

Results

The major obstacles to the effective use of institutional repositories at universities in Nigeria are presented in Table 1. Data collected from academics by means of the questionnaire was analyzed using mean and standard deviations. A decision was taken based on the mean scores.

Table 1. Obstacles to the effective use of institutional repositories in universities of Nigeria

Items	\bar{X}	SD	Dec.
Epileptic power supply affects the utilization of the institutional repository	3.47	0.76	A
Low bandwidth is a hindrance to the effective utilization of the institutional repository	3.41	0.71	A
Lack of awareness and understanding of the concept of an institutional repository	3.26	0.71	A
Members of the academic community are not properly informed of their roles in developing an institutional repository	3.25	0.70	A
Lack of opportunities to train researchers in how to use the repository	3.07	0.74	A
The absence of an institutional repository policy hinders the submission of content to the institutional repository	3.05	0.76	A
Lack of understanding of the metadata/keywords used in the institutional repository	3.04	0.79	A
Authors are not encouraged to self-archive their works	3.03	0.78	A
Copyright and intellectual property rights (IPR) are not specified in respect of content	2.84	0.81	A
The institutional repository lacks global accessibility	2.14	0.86	D

N = 369; Dec = Decision; A = Agree; D = Disagree

The major factors that militate against the use of IRs according to their mean scores concern infrastructure needed for the effective use of IRs. These factors are epileptic power supply (3.47) and low bandwidth (3.41). Other problems, which concern the submission of content, are that there is a lack of awareness and understanding of the concept of an institutional repository and that members of the academic community are not properly informed of their roles, with mean responses of 3.26 and 3.25 respectively.

The university management needs to develop strategies to sensitize the academics on their roles towards the development of IR. That will ensure that staff are aware and get involved in the projects. Other challenges, which concern skills and training, are a lack of opportunities to train researchers, the absence of a repository policy and a lack of understanding of metadata/keywords, with mean responses of 3.07, 3.05 and 3.04 respectively. Further, academics agreed that authors are not encouraged to self-archive their works (3.03). However, academics

disagreed that their institutional repository lacks global accessibility (2.14). These responses can be grouped into five major groups: infrastructure; lack of awareness; copyright and intellectual property issues; inadequate technical and skills; and management issues. Strategies to improve the use of institutional repositories at universities in Nigeria were identified using mean and standard deviations of the responses from the academics are presented in Table 2.

Table 2. Strategies for improving the use of institutional repositories in universities of Nigeria

Items	\bar{x}	SD	Dec.
The university should ensure adequate bandwidth for easy downloading and uploading of articles	3.71	0.48	SA
There should be a constant power supply to enable access to the repository	3.65	0.63	SA
Creating more awareness of the importance and content of the institutional repository	3.62	0.54	SA
There should be sensitization of academics by the university management on the use and benefits of the institutional repository	3.55	0.54	SA
The institutional repository should have search features like searching on multiple criteria such as author, title and subject for its effective access and use	3.51	0.60	SA
Having an institutional repository policy will encourage the acquisition of content	3.42	0.57	A
Specifying copyright and intellectual property rights in respect of institutional repository content	3.38	0.59	A
Encouraging self-archiving by authors to ensure the sustainability of content	3.32	0.64	A

SA= Strongly Agree; A=Agree

The result in table 2 showed the items and their mean scores, 2.50 was set as benchmark for accepting an item. The respondents agreed that the major strategies for improving the use of IRs are that the universities should ensure adequate bandwidth for easy downloading and archiving of articles (3.71) and that there should be a constant power supply to enable access to the repositories (3.65). Furthermore, they agreed that it is necessary to create more awareness of the importance and content of IRs (3.62) and for university management to sensitize academics on the use and benefits of IRs (3.55). Other factors are that IRs should have search features like searching on multiple criteria such as author, title and subject for their effective access and use (3.51). The respondents also indicated that having an IR policy, specifying copyright and intellectual property rights with respect to IR content and encouraging self-archiving by authors were important for ensuring the sustainability of IRs, with mean responses of 3.42, 3.38 and 3.32 respectively.

Discussion

The findings of the study are discussed in line with the literature reviewed. Figure 1 is a diagrammatic representation of the major findings on the barriers to the effective use of institutional repositories, grouped under four major headings.

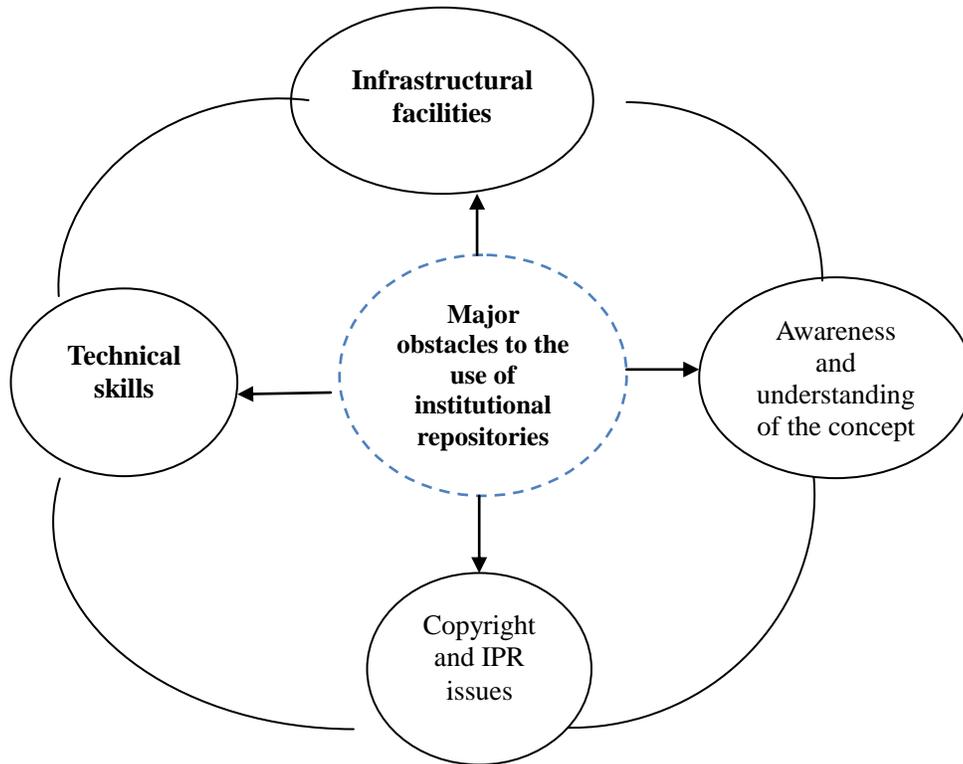


Figure 1. Obstacles to the effective use of institutional repositories by academics in selected universities of Nigeria

The major obstacles to the use of IRs as shown in Figure 1; are poor infrastructural facilities like epileptic power supply and low bandwidth. Moreover, a lack of awareness of IRs and issues relating to copyright and intellectual property rights hinder the effective utilization of IRs. Other authors such as Nwokedi (2010), Ezema (2011), Rahman and Mezbah-Ul-Islam (2014) and Yang and Li (2015) also identified a lack of awareness of the existence of IRs, epileptic power supply, copyright issues and server unavailability as barriers to content submission. Christian (2008) also identified a lack of understanding of open access repositories as an obstacle. Authors like Ekwelem, Okafor and Ukwoma (2009) identified epileptic power supply and inadequate bandwidth as barriers to using electronic information services.

Furthermore, authors such as Asamoah-hassan (2010) and Li and Banach (2011) highlighted that the absence of a collection policy is an obstacle to implementing an IR. Adebayo (2009) indicated that getting staff to share their work is an obstacle to the use of IRs for the management and utilization of local content. The wrong choice of software may affect the organization of content in an IR (Fasae et al., 2017). If content is not properly arranged using the right repository software, it will affect access to the repository and the retrieval of documents.

Based on the identified challenges, the study identified strategies for enhancing the use of IRs. These strategies include, but are not limited to, ensuring a constant power supply, ensuring adequate and dedicated internet bandwidth and creating greater awareness of the benefits of IRs. These findings are in line with the findings of Asamoah-Hassan (2010), who stated that awareness of the benefits of IRs can be created through seminars and workshops. Awareness is a very important strategy, because if academics are aware of the existence of an IR in an institution and know they are expected to submit their publications for archiving, most IRs will be more populated and there will be more IRs in universities of Nigeria. As stated in the Technology Acceptance Model (TAM), the ease with which the benefit of technology is perceived determines whether it will be accepted or not. Other strategies to improve the use of IRs include having an IR policy and specifying copyright and intellectual property rights. This result agrees with the findings of Ezema (2011). The existence of an IR policy in an institution will guide collection and encourage academics to deposit their publications. It will also encourage continuity and sustainability of the IR project. In other countries where IR policies have been implemented, academics do self-archiving and such practice is evident in the quantity of content in their IRs. Genoni (2004) highlighted that sensitization is an important strategy towards IR development. Ezema and Okafor (2015) also recommend advocacy as a way forward.

In addition, universities that embark on building an IR should have willing and knowledgeable personnel who can manage the project. Apart from ensuring a constant power supply, providing internet facilities, creating awareness and providing training, the university community should also carry the academics along in the project.

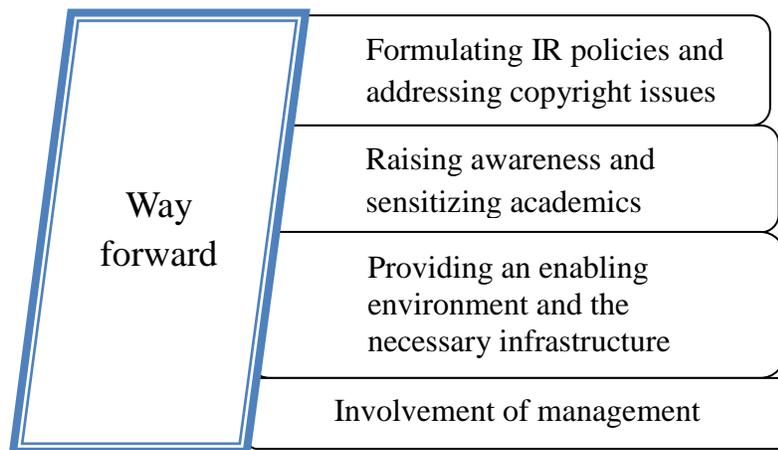


Figure 2. Ways of enhancing the use of institutional repositories

Based on the findings of the study, the items in Figure 2 represent important factors for charting the way forward in respect of the use of institutional repositories. The recommended way forward is as follows:

- Institutional repository policies should be implemented to guide the submission, management and use of content.
- An enabling environment and the necessary infrastructure should be provided to enable staff and repository librarians to archive research publications.
- Academics should be involved in the implementation and development of an IR project so that they can learn the benefits and purpose of building an IR. Ideally, authors should self-archive their publications for the growth of an IR. Authors should encourage IR initiatives, considering that certain rights are granted to authors by publishers in SHERPA/RoMEO, which specifies the copyright on publications, when authors can archive their publications and the format in which publications should be archived.
- The management of an academic institution should be involved in the implementation and development of an IR project to ensure that academics adhere to the policies that are formulated.

Conclusion

The study investigated the obstacles to the utilization of institutional repository based on the opinion of academics in institutions that had IRs in Nigeria. The study apart from adding to existing literature provides an understanding of the challenges facing the utilization of IRs. The major obstacles identified include a lack of infrastructure, inadequate technical skills required in the use of IRs, a lack of awareness and understanding of the academics' roles in the development of IRs, and the issue of violating copyright for published materials. It is important that management of institutions of higher learning address these challenges, through training and sensitization of the university community. Since an IR project has a lot of advantages and benefits, it should be sustained. This can be achieved by meeting the necessary requirements and providing an enabling environment for the smooth running of the project. Though this study was carried out in Nigeria, similar study can be replicated in other countries, to understand their challenges. This will present a global view of obstacles to the use of institutional repositories, especially in a developing world context. In addition to that, the limitation of using one instrument for data collection necessitates a further study that may benefit from triangulating methods.

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