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## Use of Institutional Repositories among Academic Staff of Federal Universities in Nigeria

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### Abstract

The study investigated the use of institutional repositories among academic staff in federal universities in Nigeria. The study used a quantitative methodology with a cross-sectional survey design. Four research questions were formulated to guide the study; the population of the study was one thousand two hundred and eighty-eight (1288) academic staff of federal universities in Nigeria that deposited research outputs in their respective institutional repositories and the sample size is three hundred and six (306). Questionnaire was used as the instrument for data collection. Proportionate stratified sampling was used in selecting the required number of respondents for each university under study, while purposive sampling was used in administering the research instrument to the respondents. Three hundred and six (306) copies of the questionnaire were administered to the respondents, out of which 268 were filled, returned and found useful. The data collected were analyzed using descriptive statistics and inferential statistics. The study discovered that academic staff used a variety of research outputs in their institutional repositories, which include seminar papers, pre-print journals, post-print journals, conference papers, theses/dissertations, book chapters, books, and workshop papers among others. The finding of the study also revealed that the frequency of use of institutional repositories by academic staff in federal universities in Nigeria was high. Result of the inferential statistics showed that effort expectancy influenced the used of institutional repositories. The study concluded that effort expectancy influenced academic staff in federal universities to use the institutional repositories. The study recommended that the library should organize series of seminars and workshops on how to use IRs.

### Keywords

Academic staff, institutional repository, federal universities, research, information resources,

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## Introduction

Over the centuries, libraries have collected, maintained, organized, and provided access to information and knowledge resources that enable individuals, organizations, and communities to achieve their goals. A paradigm shift has been witnessed in the creation, preservation, accessibility, and transmission of information which was brought about by the developments in Information and Communication Technology (ICT), such as computers, the Internet, and other network infrastructures. The quality and quantity of services offered by libraries have been enhanced and improved as a result of traditional librarianship's opening of its doors and acceptance of ICTs their brought a revolution to the collection and services provided by libraries. As a crucial tool for training, research, and education, institutional repositories have gained prominence in the global movement towards a knowledge community (Jayakanathan & Jeyaraj, 2023).

Institutional repository: is an electronic system that captures, preserves, and provides access to the digital work of an institution created by the members of the institutions and make it available to both local and global community. The basic motive for the establishment of an institutional repository is founded on the shared and equitable distribution of knowledge. In this day of rapid technological advancement, institutional repositories (IRs) assist libraries in maintaining a significant role in academic life. The contents of the institutional repositories consist mainly of the intellectual outputs and they could also contain any work generated by the institutions' students, faculty, non-faculty researchers, and staff. The contents may include books, journals, conference proceedings, theses, dissertations, manuscripts, lectures, learning objects, maps, pre-prints, post-prints, research reports, and audio-visual materials among others.

Institutional repositories have enormous benefits to institutions, researchers, scholars and the general public. The contributors will also benefit from IRs as they are likely to enjoy access to articles without hindrance and charges, open access to a wider audience of researchers, increased impact of researchers' work, easy accessibility to research work and creation of further research approaches, self-archiving and increased citation to published scholarly works among others.

## Statement of the Problem

Creation and sharing of knowledge is one of the responsibilities of academic staff all over the world. In order to share information in this regard, universities and other higher institutions established IRs. Therefore, IRs play an important role in information management and knowledge sharing as Akparobore and Omosekejimi (2020) observed that the main goal of IRs is to store, manage, and preserve the institution's born-digital and digitized assets, making them freely available to both local and international users.

Despite these benefits associated with the use of IRs, Nunda and Elias, (2019) reported in their research that there was low usage of the institutional repositories. It was equally observed by the researchers that there was a low usage of IRs in Ahmadu Bello University, Zaria. In light of this, the study investigated the use of the IRs among academic staff in federal universities.

### Research Questions

The study was guided by the following research questions:

1. What types of research outputs are used by the academic staff of federal universities in Nigeria in their institutional repositories?
2. What is the frequency of use of the institutional repositories by academic staff in federal universities in Nigeria?
3. What is the effort expectancy of academic staff on the use of institutional repositories in federal universities in Nigeria?
4. What is the relationship between effort expectancy and the use of institutional repositories?

### Research Hypothesis

**H<sub>01</sub>:** There is no significant relationship between effort expectancy and the use of institutional repositories by academic staff in federal universities under study.

### Review of related Literature

Institutional repositories (IRs) have become important platforms for academic participation in the scholarly communication process. It makes it possible for users to have access to the research outputs of their colleagues within and outside their educational environment. The use of IRs in the Nigerian academic environment is full of positive prospects. This is obvious from the bounties of benefits attached to their usage. The relevance of IRs depends largely on how effectively it is utilised by academics in the universities; this is the rationale why many researchers are concerned about the extent of its use by the users. Several studies have been carried out on the use of IRs worldwide. Nunda and Elia (2019) investigated IRs adoption and use in selected Tanzanian higher-learning institutions. The finding revealed that most of the postgraduate students used IRs. This is also similar to the finding of Olayinka (2021) which revealed that the majority of the respondents used the IRs in South-west Nigeria. The finding corresponds with that of Lawrence (2022) which revealed that the majority of the lecturers utilised the IRs.

Furthermore, the study of Ladipo et al. (2022) revealed that the frequency of use of institutional repositories by lecturers in federal universities in Nigeria was high. Also,

the study carried out by Idiedo et al. (2023) revealed that the contents of institutional repositories used in Nigerian universities journal articles were the most popular content available in all the IRs, followed by theses/dissertations, and conference/workshop papers respectively.

The degree of ease or difficulty academic staff encounter when using IRs is referred to as effort expectancy. The lack of difficulty associated with the use of the system influences an individual to engage in using the system. Individuals are concerned about the amount of time and effort required for a user to devote to using IRs. The level of user comfort when interacting with IRs motivates the user to use the system. Academic staff acceptance of IRs depends on easiness or otherwise when using the system. This signifies that effort expectancy could either inhibit or increase academic staff's willingness to contribute or use the IRs. According to Gücin and Berk (2015), ease of use is a key component that influences users' willingness to utilize any technology. This is in line with the findings of Sair et al. (2018) which showed that effort expectancy influences the behavioural intentions to adopt mobile commerce. Similarly, the research by Utomo et al. (2021) revealed that effort expectancy is one factor that influences behavioural intention. Alam (2021) carried out a study on effort expectancy in the field of health technology and found it to be a factor that affects a user's use of such technology. This indicates that users are more likely to use technology if they see that utilizing it requires less effort, which will provide the impression that it aids their daily activities. As such user favors using straightforward, effective technologies.

Similarly, Ibrahim et al. (2017) conducted an analysis of the expectation of effort expended when ICT is used in academic learning activity. The results indicated that effort expectancy significantly predicts ICT use. This is also similar to the findings of Anenene et al. (2017) who investigated the adoption of IRs in South-West Nigerian universities where respondents agreed that the use of IR is easy, extremely beneficial and it influenced the use of IRs. On the other hand, the finding of Odunayo and Adeyeye (2022) is contrary as it showed that the effort expectancy did not influence the postgraduate students to use IRs.

Furthermore, Otubelu and Anunobi (2020) in their study examined the relationship between lecturers' performance and effort expectancy and their adoption of open access scholarly publishing in Nigerian universities. The finding of the study revealed that there was a high and positive relationship between the effort expectancy of lecturers and their adoption of open access scholarly publishing in state universities.

The literature indicated that some research showed that academic staff used their various institutional repositories while others revealed low use of institutional repositories. Some literature further revealed that it is difficult to upload research outputs and access the content of the IRs as some indicated that the process required little time and effort.

### Methodology

Cross-sectional survey research design was adopted. The population of the study was one thousand two hundred and eighty-eight (1288) academic staff of federal universities in Nigeria that deposited research outputs in their respective IRs. The universities were: Ahmadu Bello University, Zaria, Federal University of Technology, Minna, Federal University, Oye-Ekiti, University of Ibadan, University of Ilorin, University of Jos, University of Lagos and University of Nigeria, Nsukka.

Multi-stage sampling techniques were adopted in selecting the sample for the study. In the first stage, a probability sampling technique was employed in selecting the required respondents for each university under study. Under probability sampling, a proportionate stratified sampling was used in selecting the required number of respondents for the study. In the second stage, the researchers used a purposive sampling technique to select the respondents of the study. Therefore, a total of 306 academic staff constituted the sample size for the study. An adapted questionnaire of the UTAUT Model was used as a data collection instrument. The questionnaire was close-ended on a point Likert scale ranging from 5 strongly agree to 1 strongly disagree. The researchers personally visited all the universities under study for the administration of the instrument to the respondents. In addition, a research assistant was used in each of the universities who helped in the administration and retrieval of the copies of the completed questionnaire.

The data collected were analyzed quantitatively with the aid of statistical software. In particular, the software used was Statistical Package for Social Sciences (SPSS) version 22. Two sorts of statistical techniques were utilized namely descriptive and inferential statistics. At the descriptive level, frequency count, mean and standard deviation were used in answering the research questions whereas at the inferential level, Pearson Product Moment Correlation (PPMC) was used in ascertaining the relationship of the study variables at 0.05 level of significance.

### Findings

Out of the three hundred and six (306) copies of the questionnaire administered to the respondents, 268 which represent 88% were filled, returned and found useful.

**Table 1: Types of Research Outputs Used by the Academic Staff in their Institutional Repositories**

S/N	Types of Research Output	Frequency	Percentage
1.	Seminar Papers	190	70.9%
2.	Pre-print Journal	76	28.4%
3.	Post print Journal	166	61.9%
4.	Conference papers	174	64.9%
5.	Theses/ Dissertations	148	55.2%
6.	Book chapters	104	38.8%
7.	Book	114	42.5%
8.	Workshop papers	162	60.4%

Respondents were asked to indicate the types of research outputs they used in their IRs. Findings from Table 1 shows that the majority that is 190 (70.9%) respondents used seminar papers, 174 (64.9%) used conference papers, 166 (61.9%) used post-print journals, 162 (60.4%) used workshop papers and 148 (55.2%) used theses/dissertations more than other types of research outputs. It is implied from this finding that the respondents utilized seminar papers, conference papers, post-print journals and theses/dissertations more for their research work.

**Table 2: Frequency of Use of the institutional Repositories by Academic Staff**

Frequency of use	Frequency	Percentage
Always	45	16.8%
Some times	136	50.7%
rarely	67	25%
once	20	7.5%
Total	268	100%

The respondents were asked to indicate the frequency of using the IRs. Descriptive statistics was used to explore the frequency of use of the IRs by academic staff in federal universities in Nigeria. From the table, out of the 268 academic staff in the study, 45 representing 16.8% indicated that they always used their university IRs, while 136 representing 50.7% which constitute the majority of the respondents use the IRs from time to time. Besides, the results further revealed that 67 representing 25% responses



indicated that they rarely use the IRs, while 20 respondents representing 7.5% responses use the IRs only once. Based on the obtained responses, it could be said that academic staff in federal universities had high frequency of use of their university's IRs.

**Table 3: Effort Expectancy of Using Institutional Repository**

**Key:** A=Agree, DA= Disagree, UD=Undecided

Statement	DA	UD	A	Mea n	SD	Decisio n
I am skillful at using my university institutional repositories.	16 (6%)	24 (9%)	228 (85%)	4.13	1.01	Accepted
My interaction with my university institutional repository is clear and understandable.	18 (6.7%)	10 (3.7%)	240 (89.6%)	4.12	0.95	Accepted
I find it easy to use my university institutional repository.	22 (8.2%)	14 (5.2%)	232 (86.6%)	4.09	0.98	Accepted
I am skillful at depositing research outputs in my university institutional repositories.	14 (5.2%)	4 (1.5%)	250 (93.3%)	4.22	0.75	Accepted
Depositing research outputs in my university institutional repository is easy and straightforward.	10 (3.7%)	8 (2.9%)	250 (93.3%)	4.21	0.70	Accepted
I find it easy to deposit research outputs in my university institutional repository.	26 (9.7%)	6 (2.3%)	236 (88%)	4.11	0.90	Accepted

\*Weighted mean = 4.15 Criterion mean = 3.00

Descriptive statistics was used to explore the effort expectancy of academic staff in using their IRs. The data were collected using 5 point Likert Scale but were merged in to three (3) to represent positive (SA & A) neutral (UD) and negative (SD & D). The computed responses showed that 228 academic staff which represents 85% indicated that they were skillful at using their university IRs with a mean score of (M= 4.13, SD=1.01), while 240 academic staff which represents 89.6% equally showed that their interaction with their university IRs was clear and understandable with a mean score of (M= 4.12, SD= 0.95). Similarly, out of the 268 academic staff in the study, 232 which represents 86.6% showed that they found it easy to use their university IRs with a mean score of (M= 4.09, SD= 0.98). Based on the above findings, it showed that academic staff

in federal universities in Nigeria possessed the needed abilities and skills required in using their IRs and thus, found it easy to use the IRs which is a positive development.

The findings further indicates that, 250 respondents which represent 93.3% showed that they were skillful at depositing research outputs in their university IRs with a mean score of (M= 4.22, SD= 0.75), while 250 respondents representing 93.3% shows that depositing research outputs in their university IRs was easy and straightforward with a mean score of (M= 4.21, SD= 0.70). Also, 236 respondents which represents 88% shows that it is easy to deposit research outputs in the university IRs with a mean score of (M=4.11, SD= 0.90). The overall respondents were having a weighted mean of 4.14 which is greater than the criterion mean of 3.00. Based on the obtained figures, it shows that the effort expectancy influence the academic staff in federal universities in Nigeria to use the IRs. The analysis further showed that the use of IRs by academic staff in federal universities in Nigeria was influenced by its easiness as well as the level of skills the academic staff possess on the use of the IRs.

### Testing of Hypothesis

**H<sub>01</sub>:** There is no significant relationship between effort expectancy and the use of institutional repositories by academic staff in federal universities under study.

**Table 4: Relationship between Effort Expectancy and the Use of Institutional repositories**

Variables	M	SD	r	p-value	Sig-level	Decision
Use of Institutional Repository	51.32	8.68				
			.227	.000	.05	Rejected
Effort Expectancy	25.54	3.84				

- Correlation is significant at 0.05 level

The table shows the correlation coefficient for relationship between effort expectancy and the use of IRs. The result of the test shows that statistically, significant relationship exists between effort expectancy and the use of IRs by academic staff in federal universities in Nigeria ( $r = .277$ ,  $p = .000$ ,  $p < .05$ ). This implies that lack of difficulty in using the IRs motivated the academic staff to use the IRs. Based on the obtained result, the stated null hypothesis was rejected.



## Discussion of Findings

The study discovered that academic staff used a variety of research outputs in their IRs, including conference papers, book chapters, books, dissertations, pre-print journals, and seminar papers. The most frequently used were seminar papers followed by conference papers then post-print journals, workshop papers and theses/ dissertations. The finding is similar to that of Nwachi and Idoko (2021) who investigated the staff use of IRs for academic purposes in Nigerian university libraries. The study revealed that journals theses/dissertations and books were the most frequently used items in the repositories' collections. On the frequency of using the research outputs in the IRs by the academic staff in federal universities in Nigeria, the study revealed that there was a high frequency of using research outputs in the IRs. This indicates that academic staff utilized the research outputs in their various IRs. The result is in conformity with the finding of Fasae et al. (2017) who surveyed the use of IRs and heritage materials in selected institutions within three African countries. The finding revealed that most of the respondents used the IRs. The finding also concurs with that Olayinka et al. (2021) who discovered in South-west universities in Nigeria that the utilization of IR resources by academic staff was high. Additionally, the finding is in line with that of Ammarukleart (2017) which showed that the majority of the respondents studied had searched for and used scholarly works available in IRs and other publicly accessible websites. On the other hand, the finding is contrary to that of Ratanya (2018) who conducted a study on access and use of the IR among academic staff at Egerton University, Kenya. The result revealed that the majority of the academics at the University were not using the content available in the repository. The attainment of high frequency of usage could be attributed to the fact that the academic staff realized the bounties of benefits associated with the use of the IRs as they serve as platforms through which research outputs are shared among the academic community.

It also revealed that effort expectancy that is lack of difficulty in using the IRs motivated them to use the IRs. Most of the respondents showed that it was easy to use the IRs. Social influence was also found to be another factor that motivated the academic staff to use the IRs; that is, they use the IRs based on the influence of others such as colleagues, librarians and other members of their university communities. The finding buttressed that of Rahman (2012) who investigated factors influencing postgraduate student's willingness to use digital libraries in Malaysia. The finding revealed that effort expectancy and information quality were positively related to the continued usage of digital libraries. The study of Sair (2018) also revealed that effort expectancy influenced behavioural intentions to adopt mobile commerce. Moreover, ease of using an application or technology is a critical factor that drives users to be willing to use the

system in the long term. Some previous studies like that of Lee (2018) also found that effort expectancy is a predictor of performance expectancy. The study by Alam (2021) similarly revealed that effort expectancy in the field of health technology was found to be a factor that affects a user to use technology. This clearly indicates that users are more likely to use technology if they believe that using the system requires less effort, which will provide the impression that it aids their daily activities as the users favour using straightforward and effective technologies.

The result of the hypothesis testing showed that there was a significant positive relationship between effort expectancy and the use of IRs by academic staff of federal universities in Nigeria ( $r = .164$ ,  $p = .007$ ,  $p < .05$ ). This clearly shows that academic staff found the interaction with IRs easy, clear and understandable. As such, they utilized the IRs effectively. However, the study of Ayas and Yanartas (2020) revealed a contrary finding as the effort expectancy factor did not have positive effects on the electronic document management system use.

## Conclusion

The research concluded that the academic staff in federal universities in Nigeria utilized seminar papers, conference papers, post-print journals and theses/dissertations for their research work, and they had high frequency of usage of the institutional repositories. This implied that the university libraries' expenditures on providing the institutional repositories were not in vain as members of the immediate community are benefiting tremendously from the system. Based on the findings of the study, the following recommendations are offered:

## Recommendations

1. The University libraries should keep up with uploading recent and updated scholarly works so that the institutional repositories will remain relevant to the academic community.
2. University libraries should organize periodic seminars and trainings for academic staff in order to equip them with technicalities of various ways of using their institutional repositories.
3. It is recommended that the university management should provide adequate sources of electricity supply to address issues of inadequate power supply.

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