

Full Length Research

Institutional Repositories Utilisation and Research Productivity of Lecturers in Federal Universities in Nigeria Universities

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This study focused on the influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria. The survey research design was adopted for the study and multi-stage sampling procedure was used to select 724 participants to constitute the sample size for the study. Findings from the study revealed an average level of research productivity among academic staff in federal universities in Nigeria. Findings from the study revealed photographs, notebooks, seminar papers, inaugural lectures and illustrations and drawings as the most common types of information resources in the institutional repositories of federal universities in Nigeria. The major purposes for which lecturers in federal universities in Nigeria use institutional repositories are preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, and research works which revolve around teaching and research as the core mandate of the lecturers. The frequency of use of the institutional repositories established weekly use of book chapters and occasional use of other resources in the institutional repositories by lecturers of the federal universities surveyed. Findings from the study further established the prevalence of occasional use of institutional repositories by lecturers in federal universities in Nigeria. A positive significant influence of use of institutional repositories on research productivity of lecturers was established by the study. The study recommended the formulation and implementation of adequate university-wide policy, that can be easily translated to reality and devoid of any cumbersomeness to encourage and support research productivity of the lecturers just as efforts be made to the create of awareness on the availability and functionality of institutional among the lecturers in federal universities in Nigeria. The universities' management should also organise regular training and retraining programme and workshops on the effective use of institutional repository for the lecturers.

Keywords: Use of institutional repositories, Research productivity, Lecturers, Federal universities, Nigeria

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INTRODUCTION

Research is a key to the growth and development of societies through the creation of new knowledge and use of existing knowledge in a creative way so as to generate new concepts, methodologies and understandings. In the academia, the concept of research is taken seriously in which the promotion of faculty members is dependent on the number of publications they have. This requirement makes it a mandate for them to be productive scholars and the extent to which this mandate is achieved is used to determine the level of productivity lecturers. Research productivity is viewed as the measure of an academic's achievement viewed in terms of quantity or quality of publications over a given period of time and considered in terms of the totality of research activities performed by lecturers over a given period of time (Basiru, 2018 and Sullivan, 2016). On the other hand, the measurement of the quantity of research output of lecturers is viewed in terms of the numbers of publications in learned, globally accepted indexed databases, number of patents produced, number of chapters in books or books published locally or internationally which are believed to be accepted by high impact refereed or learned journal, publications in conference proceedings, research oriented books, staff bulletins, subject books, technical reports, articles in refereed journals, pamphlets and monographs (Gunawan, Barasa and Tua, 2018). This measure varies from one institution to another.

Research productivity can be measured using certain methodology and exercises such as the number of published works, chapter contributions in books, book publications including citations in web platforms and monographs. Existing studies have dealt with academics' research productivity with various variables and indicators. However, the concept of institutional factors and repository support seems to be neglected as factors that could contribute to the low level of research productivity. According to Cheng-Cheng Yang (2018), issues such as institutional-related, infrastructural-related, information resources-related and management-related and policy-related factors, among others have been observed and pointed out in other scholarly works as having the tendencies to influence research productivity of lecturers in Nigerian universities. Meanwhile, this study is focusing on one of the sub-components of the factors highlighted which is the use of institutional repositories as a key determinant of research productivity of lecturers. The use of institutional repositories is a key component of information-resources related factors relating to research productivity of lecturers in Nigerian universities.

Institutional repositories (IRs), according to Lych, (2003) cited in Bamigbola, (2018) is an archive for the collection of intellectual outputs of an institution, recorded in a form that can be preserved, exploited and disseminated in a digital form. University libraries have overtime been involved in establishing institutional repositories to acquire, process, store, preserve and disseminate intellectual outputs of lecturers in digital forms to community members and the global community. It is usually an electronic store of web-based scholarly digital documents of theses, journals, books and conference papers owned by the institutions, hence it can be referred to as an extension of digital library which has now become a platform for sharing of knowledge (Bamigbola, 2018).

The main objective of establishing institutional repositories is to showcase institutional research output to the outside world and can be regarded as a service that university renders to its community members for the stewardship of scholarly publication generated by the faculty, staff, and research scholars which create global visibility for an institution's scholarly research, and also stores and preserves other institutional digital assets, including unpublished literature for long term use. Institutional repositories have therefore witnessed a paradigm shift in scholarly communication that increases the visibility and add more prestige to the institutions. According to Leila and Mina (2018), the benefits of IRs can be summarised in two categories which are open access to scholarly publications and long-term preservation of the scholarly content. Consequently, institutional repositories provide tools that assist lecturers in disseminating their works to audiences within and outside the institution. It enables information seekers to find faculty and students work more easily by organising and indexing it, making it more visible to colleagues. The content of institutional repositories varies from one institution to the other. Some may include monographs, pre-prints of academic journal articles as well as electronic theses and dissertations, datasets, administrative documents, course notes, learning objects and conference proceedings.

The federal universities which are the focus of this study have common features which also help storage content of institutional repositories and use by lecturers in these universities. Bamigbola (2017) revealed that content storage and utilisation are mainly for research and administrative purposes. A preliminary survey by this researcher shows that contents available in the repositories of Nigerian universities cut across many fields and include faculty lectures, inaugural lectures, guest lectures series, seminar papers, encyclopedia and dictionary, newspapers, newsletters, journals, theses and dissertations, conference proceedings, textbooks, book of abstract, bulletins, posters, realia, maps, photographs, models, banners, charts, illustrations and drawings, notebooks, patents and book chapters.

Genoni, Merrick and Wilson (2014) submitted that there is a growing appreciation that the content of institutional repositories needs to be more diverse than is appropriate for subject-based repositories, and that they should unite both formal and informal scholarly communication in a single archive. The policy guiding the use of institutional repositories is supposed to state clearly the rule for copyright ownership and licenses both in depository and accessing the content of

the institutional repositories, including decision on issues such as how scholarly articles by academics, student project works, theses and dissertations, newsletters, inaugural lectures from the university are to be uploaded into the system. Researches have shown that these are lacking in developing countries around the world. Adeyemi, Appah, Akinlade and Bribena (2017) stated that the existing institutional repositories in Nigeria have no policy that guides their operation. Such policy document which should cover such matters as what to accept or not to accept, copyright issues, self or mediated archiving, submission and withdrawal policies, types of material to accept and any other issue necessary to govern the operation of the institutional repositories for implementation. Study by Ezema and Okafor (2015) also shows that exclusive right to protect an author, composer or artist from having his work recorded, performed, displayed, translated, distributed or reproduced by way of copies, photocards, or other versions is not done except with express permission to promote use of institutional repositories not only in developing countries but Nigeria in particular.

Moreover, Alhija and Majdob (2017 and Aina and Adekanye (2013) averred that lack of relevant and adequate skills on the part of some lecturers to gaining access to the intellectual output contents of other lecturers and researchers in terms of print and non-print materials, through institutional repositories, could also undermine the productivity of the lecturers. The use of institutional repositories in the contemporary world requires that lecturers must be proficient in digital literacy, media literacy skill and have ICT competency among others, to determine the level of their performance in all their areas of academic and research activities. Institutional repositories assist scholars to be aware of the state of the existing knowledge and have access to information which will help them to build up their own theories and findings in order to provide meaningful research to take place.

Dutta and Paul (2014) submitted that although lecturers have low awareness of the institutional repositories, they have more or less positive attitude towards and interested in contributing their work in the institutional repositories of the university. However, confusion about copyright issues discourages them to participate in it. It has been emphasised that for an institutional repository to successfully serve its full potential, the lecturers should not only be aware of its existence but understands its value, and willing to contribute their scholarship. Unfortunately, there seems to be a serious decline in the research productivity of university lecturers as evident in the decline of publication outputs and quantity of publication in institutional repositories of most universities (Haliso and Toyosi, 2013). Efforts at addressing the declining levels of research productivity of lecturers in Nigerian universities through training and retraining, and formulation of policies by the various universities, government and its agencies as well as provision of funding by government through TetFund and other means seems not to have yielded any positive results in addressing this problem (Nwocha and Mabawonku, 2014; Adu, 2018). Consequently, it is pertinent to suggest that there are other factors that need to be addressed to curb this declining trend in research productivity of lecturers in federal universities in Nigeria. Empirical evidence, Observations by scholars such as Bamigbola (2018) and Adu, 2018 pointed to factors such as functionality of institutional repositories with relevant indigenous and local contents (resources), accessibility to and use of institutional repositories as well as infrastructural facilities as having the tendency to influence research productivity of lecturers in federal universities in Nigeria.

It suffices to say that since the other factors investigated earlier in relation to research productivity have not yielded the desired positive results, it is imperative that there is need to investigate the other factors too. There is also evidence of low use of institutional repositories where there are functional institutional repositories. Studies such as Unocha and Mabawonku (2014) affirmed that institutional repositories could have a positive influence on research productivity because it is widely known and used in many countries around the globe but there is no evidence that institutional repositories are widely used in Nigeria. It is on this basis that this study intends to examine the influence of use of institutional repositories on research productivity of lecturers in Nigerian federal universities.

Objectives of the study

The specific objectives of this study are to:

1. determine the level of research productivity of lecturers in federal universities in Nigeria;
2. identify the types of information resources available in the institutional repositories of federal universities in Nigeria;
3. establish the purpose of use of institutional repositories by lecturers in federal universities in Nigeria;
4. ascertain the frequency of use of institutional repositories by lecturers in federal universities in Nigeria; and
5. find out the influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria;

Research questions

The following research questions were answered in the study:

1. What is the level of research productivity of lecturers in federal universities in Nigeria?
2. What are the types of information resources available in the institutional repositories of federal universities in Nigeria?
3. For what purposes do lecturers in federal universities in Nigeria use institutional repositories?
4. What is the frequency of use of institutional repositories by lecturers in federal universities in Nigeria?

Hypothesis

The hypothesis was tested at 0.05 level of significance

There is no significant influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria.

Literature Review

Productivity is a measure of efficiency of production. It is expressed as the ratio of output to inputs used in the production process. When all outputs and inputs are included in the productivity measure it is called total productivity. Outputs and inputs are defined in the total productivity measure as their economic values. Productivity is generally defined as a measure of the amount of output generated per unit of input, (Quy-Huu, 2015). The definition of productivity is concerned with the relationship between input and output which does not cover issues that many people have in mind when they talk about public sector productivity. According to Philips and Okoronmah (2020), more general interpretation of productivity encompasses broader concerns about the outcomes achieved by the public sector. Productivity growth is frequently lauded in the business community to improving living standards but there is little agreement on what constitutes productivity. To some productivity is about working harder and longer hours, to others it is the return from investing more in capital (such as infrastructure and education investment). Holzer and Seok-Hwan (2014) argued that the concept of productivity has been utilised for many years, it is often simplified, misinterpreted and misapplied with various indicators proposed. Meanwhile, within the context of academia, institution repositories are being considered as having the tendency to determine the level of research productivity of lecturers in universities.

Institutional repositories are considered as important for universities in helping to manage and capture intellectual assets as a part of their information strategies and makes research freely and broadly available to a worldwide audience (open access) with the use of technology and metadata standards to ensure research works are more suitable on the internet and the libraries take care to archive and preserve it for future generation. Consequently, it can be deduced that institutional repositories are highly germane to measuring lecturer's research productivity in terms of teaching efficiency, research output or publication and community service in universities. The contents, purpose and frequency are major parameters of measuring the use of institutional repositories.

The deployment of institutional repositories (IRs) in libraries and organisations is an international phenomenon since they are considered as major components of information technologies infrastructure that assist libraries and organisation to provide information resources for teaching, learning and research work. It is an ideal vehicle for making research outputs visible within and outside the institutions. This new form of scholarly communication. is achieved through two main channels which include the open access publications and institutional repositories. The development of institutional repositories in higher institutions was made possible by Open Access Initiatives (OAI) which sought to make available research outputs by encouraging researchers to deposit their scholarly work into their university institutional repositories.

Given the vision and the potential, it is surprising and disappointing that institutional repositories collections have generally grown more slowly than proponents had anticipated. The phenomenon is worldwide. Also typically communicated through these activities are the benefits of depositing in institutional repositories for faculty members (Barton, Mark and Shearer, 2006). In other words, the information professionals and the host institutions should play a very vital role in attracting and creating awareness of researchers toward the potentials of institutional repositories for the research community to make it usable in addition to those authors who are accustomed with it.

Mark and shearer (2006) cited a number of reasons why lecturers' utilisation of institutional repositories rates is low in most developing countries. According to them, at the most basic level, faculty members lack awareness of the existence of institutional repositories. Other surveys have found that many academic authors are not familiar with the concept of any institutional repositories on campus (Swan and Brown, 2004; Swan and Brown, 2005). Christian (2008) noted that

lack of knowledge or awareness of institutional repositories is not peculiar with researchers. In fact, this is the situation in most developing countries institutions. However, Dulle (2008) established that a majority of researchers had heard about open access institutional repositories. It therefore means that the levels of awareness of institutional repositories issues are varied. Abrizah (2009) in his survey solicits opinion on the usefulness and importance of an institutional repositories to the university from 91 respondents. The majority claimed they were aware of institutional repositories 63(69.2%) and those who were aware affirmed that an institutional repository would be very useful for the university and that it is critically important that the university implements an institutional repository 72 (79.1%). In general, lecturers unanimously felt that it is important for the members of the university to retain those intellectual property rights needed to make their intellectual output available through an institutional repository and that the members of the university consistently make their intellectual output available through an institutional repository 76(83.5%). However, not everyone felt that it is important that the university consider works placed in an institutional repository when evaluating lecturers for promotion with response rates of; Not at all important 2 (2.2%); Slightly important 7 (7.7%); somewhat important 26 (28.6%); very important 56 (61.5%) and critically important 0 (0%). Findings from the study further affirmed that lecturers know the benefits of an institutional repository but would not want the work deposited in an institutional repository to be used for assessment and promotion. This may be as a result of the fact that the lecturers may have signed the copyright ownership to the publishers of their journal articles. Also, Christian (2008) in his study of institutional repository awareness in Nigeria found that a total of 55(78.4%) agreed that the development of institutional repository is "very important" for their institution, 10 respondents representing (13.9%) of the total response agreed that it is "important", 5(6.9%) respondents were neutral. None of the respondents sees institutional repository as being "unimportant" to their institution. It could be inferred that lecturers in Nigeria know the importance of institutional repository.

Kim (2011) investigated the perceptions of faculty members from 17 Carnegie doctorate granting universities in the United States regarding institutional repositories. Results showed that about (60%) of the respondents indicated that they were unaware of their universities institutional repositories. Dutta and Paul (2014) studied selected science and technology faculty members of the University of Calcutta, India and reported that most of the respondents noted that their awareness of institutional repository was less satisfactory as they only became aware of institutional repository through the Internet. On the contrary the study by Dhanavandan and Tamizhchelvan (2013) on the attitudes and awareness of 200 faculty members in Annamalai University towards institutional repositories and open access publishing. The respondents included assistant professors, associate professors and professors and results showed that 150 (93.75%) indicated that they were aware, 6 (3.75%) were not aware and 4 (2.50%) said they had no opinion. In the Nigerian context, Aghwotu and Ebiere (2016) also examined the awareness and attitude of lecturers towards establishing institutional repositories in Niger Delta University, Bayelsa State, Nigeria and reported that (90.0%) of the respondents stated that they were aware of institutional repositories. Apart from awareness, the perception of institutional repositories is critical to its adoption and utilisation.

Oguz and Assefa (2014) conducted a study on the faculty members perceptions towards institutional repositories at regional university in the South-eastern U.S.A. The questionnaire which was the research instrument was administered to 500 respondents online via surveymonkey.com. Findings revealed that a little over half of the respondents had a favourable or positive perception towards institutional repositories. Results from the study of Dutta and Paul (2014) also showed that majority of the faculty reported a positive favourable perception regarding institutional repositories. In a recent study, Ukwoma and Dike (2017) studied 491 academics attitudes towards the utilisation of institutional repositories in five Nigerian universities. They reported that the fact that academics disagreed with the negative statements in the null hypotheses which showed that they had a positive attitude towards submission of their publications. The development of institutional repositories in university libraries, especially in developed societies where advance information and communication technologies (ICTs) are used for retrieval and dissemination of information has been a global phenomenon.

RESEARCH METHODOLOGY

This survey research design was adopted by the study. The target population for this study comprises all lecturers in federal universities in the six geopolitical zones in Nigeria totaling 11,591 spread across the 43 federal-owned universities in Nigeria (Preliminary investigation, 2020). Multi-stage sampling procedure was adopted in selecting the sample for the study. Purposive sampling technique was adopted in selecting the oldest federal university in each of the six geo-political zones in Nigeria. The universities selected are: University of Ibadan, Oyo State (South-West); Ahmadu Bello University, Zaria, Kaduna State (North-Central); University of Maiduguri, Borno State (North-East); University of Benin, Edo State (South-South); University of Ilorin, Kwara State (North-Central) and University of Nigeria, Nsukka, Enugu State (South-East). At the second stage, purposive sampling technique was used to select 5 faculties that are

commonly available in all the selected universities viz: Faculties of Science, Agriculture, Social Science, Law and Arts. These faculties are popular ones in universities with vibrant academic programmes. Also, purposive sampling technique was used to select one department that is commonly available in the selected faculties. Therefore, Departments of Computer Science (Faculty of Science), Animal Science (Faculty of Agriculture), Sociology from (Faculty of Social Science), Law (Faculty of Law) and History (Faculty of Arts) were selected. Total enumeration was used to include all the lecturers in the selected departments to constitute the sample size for the study. Therefore, a total of 724 lecturers constitutes the sample size for the study

The instrument used for data collection was a structured questionnaire. The questionnaire tagged "Use of Institutional Repositories and Lecturers Research Productivity Questionnaire (UIRLP) consists of six sections. Section A is designed to elicit information on the demographic information of the respondents such as name of institution, faculty, department, gender, age, designation and work experience. Section B of the questionnaire focused on eliciting information to measure the level of research productivity of lecturers. It comprises 10 items and measured on a 5-point Likert scale of 5 = Very high level, 4 = High level, 3= Moderate level, 2 = Low level, 1 = Very low level. Section C of the questionnaire elicited information on use of institutional repositories and comprises 34 items. The questionnaire was administered on 30 lecturers of Obafemi Awolowo University, Ile Ife, Osun State for the pilot study. The test-retest method was adopted in finding the reliability of the questionnaire which yielded Utilisation of institutional repositories reliability coefficients of 0.947 and 0. 728 for lecturers' productivity respectively (See Table 1).

Table 1. Cronbach's alpha Reliability Coefficient for the Variables

Variables	Cronbach's	No of survey items
Utilisation of institutional repositories	0.947	57
Lecturers research productivity	0.728	23

Research Questions

Research Questions One: What is the level of research productivity of lecturers in federal universities in Nigeria?

Table 1. Frequency Distribution of Respondents' View on the level of research productivity of lecturers in federal universities in Nigeria

S/A	Production (Quantity)	VH	H	AV	L	V.L		Std. Dev
1	my annual research publications	86 15.9 %	200 37.0 %	173 32.0 %	64 11.9 %	17 3.1 %	3.51	.99
2	the total number of all types of publications (conference papers, book chapters,) I have for the last three years (the total output within 3 years)	112 20.7 %	158 29.3 %	158 29.3 %	82 15.2 %	30 5.6 %	3.44	1.14
3	the total number of my peer reviewed journals publications	114 21.1 %	142 26.3 %	137 25.4 %	85 15.7 %	62 11.5 %	3.30	1.28
4	the total number of peer reviewed textbooks published	79 14.6 %	193 35.7 %	113 20.9 %	88 16.3 %	67 12.4 %	3.23	1.24
5	the total number of my peer reviewed Chapters in books	97 18.0 %	140 25.9 %	144 26.7 %	90 16.7 %	69 12.8 %	3.20	1.27
6	the total number of my peer reviewed conferences proceedings	89 16.5 %	138 25.6 %	149 27.6 %	100 18.5 %	64 11.9 %	3.16	1.24
7	The total number of patents & technical reports	87 16.1 %	161 29.8 %	128 23.7 %	75 13.9 %	89 16.5 %	3.15	1.31

Decision Rule: Very High = 7 and above publications; High = 5-6 publications; Average =3-4 publications; Low =1-2 publications; Very Low = No publications

Table 1 reveals the level of research productivity of lecturers in federal universities in Nigeria. The result shows that the overall level of research productivity of lecturers in federal universities in Nigeria was found to be average with mean value of 3.28 using the decision rule. The breakdown of the result shows that most of the lecturers ranked average on all parameters of quantity of production viz: annual research publications (= 3.51), total number of all types of publications (= 3.44), the total number of my peer reviewed journals publications (= 3.30), the total number of peer reviewed textbooks published (= 3.23), the total number of my peer reviewed Chapters in books (= 3.20), the total number of my peer reviewed conferences proceedings (= 3.16) and total number of patents & technical reports (= 3.15). Therefore, it can be deduced that research productivity of lecturers in federal universities in Nigeria in terms of quantity of production is average.

Research QuestionsTwo: What are types of information resources available in the institutional repositories in federal universities in Nigeria?

Table 2. Frequency Distribution of Respondents' View on the Types of Resources (n=540)

S/A	Types of Resources Available	Yes	No		Std. Dev
1	Photographs	507 (93.9%)	33 (6.1%)	1.94	.240
2	Notebooks	506 (93.7%)	34 (6.3%)	1.94	.243
3	Seminar papers	506 (93.7%)	34(6.3%)	1.94	.243
4	Inaugural lectures	505 (93.5%)	35(6.5%)	1.94	.240
5	Illustrations and Drawings	504 (93.3%)	36 (6.7%)	1.93	.250
6	Bulletins	499 (92.4%)	41 (7.6%)	1.92	.265
7	Posters	499 (92.4%)	41 (7.6%)	1.92	.265
8	Newspapers	497 (92.0%)	43(8.0%)	1.92	.271
9	Maps	497 (92.0%)	43 (8.0%)	1.92	.271
10	Patents	497 (92.0%)	43 (8.0%)	1.92	.271
11	Charts	495 (91.7%)	45 (8.3%)	1.92	.277
12	Guest lecture series	404 (91.5%)	36(8.5%)	1.91	.279
13	Conference Proceedings	488 (90.4%)	52(9.6%)	1.90	.295
14	Faculty lectures	487 (90.2%)	52(9.8%)	1.90	.298
15	Realia (Real objects)	485 (89.8%)	55 (10.2%)	1.90	.303
16	Banners	482 (89.3%)	58 (10.7%)	1.89	.310
17	Models	478 (88.5%)	62 (11.5%)	1.89	.319
18	Textbooks	473 (87.6%)	67 (12.4%)	1.88	.330
19	Theses and Dissertations	472 (87.4%)	68(12.6%)	1.87	.332
20	Book of Abstracts	465 (86.1%)	75(13.9%)	1.86	.346
21	Newsletters	458 (84.8%)	82(15.2%)	1.85	.359
22	Journals	455 (84.3%)	85 (15.7%)	1.84	.365
23	Book chapters	401 (74.3%)	139(25.7%)	1.74	.438

Table 2 reveals that photographs 507 (93.9%), notebooks 506 (93.7%), seminar papers 506 (93.7%), inaugural lectures 505 (93.5%) and illustrations and Drawings 504 (93.3%) topped the list of types of information resources available in the institutional repositories of federal universities in Nigeria as affirmed by the respondents while book of abstracts, newsletters, journals and book chapters ranked least with an response rates of 465 (86.1%), 458 (84.8%), 455 (84.3%) and 401 (74.3%) respectively. The implication to be drawn from the result is that photographs, notebooks, seminar papers, inaugural lectures and illustrations and Drawings are the most common types of information resources in the institutional repositories of federal universities in Nigeria though there are other materials in the institutional repositories. Meanwhile, the fact that the more useful information resources such as journals, book of abstracts, book chapters and conference proceedings are not among the top information resources available in the institutional repositories of federal universities in Nigeria is a cause for concern.

Research questions Three: For what purposes do lecturers in federal universities in Nigeria use institutional repositories?

Table 3. Purposes of use of institutional repositories by lecturers in federal universities in Nigeria (n=540)

S/N	Purposes	SA	A	D	SD		Std. Dev
1	I use IR for Preparing seminar/lecture notes	70 13.0%	223 41.3%	161 29.8%	86 15.9%	2.51	.911
2	I use IR for Writing papers/proposals	70 13.0%	226 41.9%	145 26.9%	99 18.3%	2.49	.937
3	I use IR for Seminars presentations	55 10.2%	238 44.1%	147 27.2%	100 18.5%	2.46	.908
4	I use IR for Research works	70 13.0%	183 33.9%	187 34.6%	100 18.5%	2.41	.935
5	I use IR for Preparing for lecture series	59 10.9%	186 34.4%	177 32.8%	118 21.9%	2.34	.940
6	I use IR for Developing course materials/notes	50 9.3%	184 34.1%	138 25.6%	168 31.1%	2.21	.989
7	I use IR for Writing book reviews	59 10.9%	151 28.0%	148 27.4%	182 33.7%	2.16	1.015
8	I use IR for Grants write up	41 7.6%	149 27.6%	182 33.7%	168 31.1%	2.12	.937
9	I use IR for Obtaining general knowledge	58 10.7%	131 24.3%	134 24.8%	217 40.2%	2.06	1.036

Sources: Researcher's field-report, 2021

Decision Rule: 0.1-1.0=Strongly Disagree, 1.1-2.0=Disagree, 2.1-3.0=Agree, 3.1-4.0=Agree

Table 3 presents the results of analysed data on the purposes for which lecturers in federal universities in Nigeria use institutional repositories. The results reveals that preparation of seminar/lecture notes (54.3%, = 2.51), writing papers/proposals (54.3%, = 2.49), seminars presentations (54.3%, = 2.46), and research works (46.9%, = 2.41) were ranked higher as the purposes by the respondents as purposes for which they used institutional repositories while writing book reviews (38.9%, = 2.16), grants write up (35.2%, = 2.12), and obtaining general knowledge (35.0%, = 2.06) were ranked lower. This implies that the major purposes for which lecturers in federal universities in Nigeria use institutional repositories are preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, and research works which revolve around teaching and research as the core mandate of the lecturers in.

Research questions Four: What is the frequency of use of institutional repositories by lecturers in federal universities in Nigeria?

Table 4. Frequency of Use of Institutional Repositories by Lecturers in Federal Universities in Nigeria (N=540)

S/A	IR Resources	DA (%)	WE (%)	MO (%)	OC (%)	NU (%)		Std. Dev
1	Book chapters	110(20.4)	120(20.4)	76(14.1)	140(25.9)	94(17.4)	3.02	1.41
2	Newsletters	107(19.8)	85(15.7)	88(16.3)	165(30.6)	95(17.6)	2.90	1.39
3	Patents	119(22.0)	75(13.9)	59(10.9)	171(31.7)	116(21.5)	2.83	1.47
4	Journals	100(18.5)	64(11.9)	110(20.4)	170(31.5)	96(17.8)	2.82	1.36
5	Illustrations and Drawings	108(20.0)	96(17.8)	46(8.5)	148(27.4)	142(26.3)	2.78	1.50
6	Newspapers	112(20.7)	42(7.8)	104(19.3)	167(30.9)	115(21.3)	2.76	1.41
7	Conference Proceedings	82(15.2)	55(10.2)	129(23.9)	202(37.4)	72(13.3)	2.76	1.25
8	Theses and Dissertations	74(13.7)	89(16.5)	96(17.8)	182(33.7)	99(18.3)	2.74	1.31
9	Book of Abstracts	77(14.3)	58(10.7)	108(20.0)	217(40.2)	80(14.8)	2.69	1.25

Table 4 continuation

10	Notebooks	78(14.4)	100(18.5)	72(13.3)	139(25.7)	151(28.0)	2.66	1.42
11	Charts	92(17.0)	71(13.1)	65(12.0)	178(33.0)	134(24.8)	2.65	1.41
12	Seminar papers	73(13.5)	79(14.6)	71(13.1)	212(39.3)	105(19.4)	2.64	1.31
13	Textbooks	50(9.3)	80(14.8)	120(22.2)	208(38.5)	82(15.2)	2.64	1.17
14	Faculty lectures	59(10.9)	74(13.7)	94(17.4)	236(43.7)	77(14.3)	2.63	1.20
15	Guest lecture series	52(9.6%)	82(15.2)	103(19.1)	198(36.7)	105(19.4)	2.59	1.23
16	Posters	64(11.9)	64(11.9)	109(20.2)	192(35.6)	111(20.6)	2.59	1.26
17	Bulletins	41(7.6)	95(17.6)	85(15.7)	208(38.5)	111(20.6)	2.53	1.21
18	Inaugural lectures	45 (8.3)	72(13.3)	84(15.6)	251(46.5)	88(16.3)	2.51	1.16
19	Maps	68(12.6)	69(12.8)	63(11.7)	197(36.5)	143(26.5)	2.49	1.33
20	Banners	54(10.0)	77(14.3)	72(13.3)	193(35.7)	144(26.)	2.45	1.29
21	Realia (Real objects)	52(9.6)	65(12.0)	84(15.6)	206(38.1)	133(24.6)	2.44	1.24
22	Models	43(8.0)	75(13.9)	78(14.4)	200(37.0)	144(26.7)	2.39	1.23
23	Photographs	36(6.7)	57(10.6)	80(14.8)	224(41.5)	143(26.5)	2.29	1.16
	Weighted Mean	2.64						
	Grand Mean	60.8						

Decision Rule: 0.1-1.0=Not Used, 1.1-2.0=Occasionally, 2.1-3.0=Monthly, 3.1-4.0=Weekly; 4.1-5.0=Daily

Table 4 presents the result on the frequency of use of institutional repositories by lecturers in federal universities in Nigeria. The study shows that book chapters was ranked highest with "Weekly Use" by the respondents (=3.02). The results of the analysed data reveals "Occasional Use" of newsletters(=2.90), patients(=2.83), journals(=2.82), illustrations and drawings(=2.78), newspapers(=2.76) and conference proceedings(=2.76) among others. The inference that can be drawn from the results is that lecturers in federal universities in Nigeria. Make use of only book chapters on weekly basis while other information resources are used occasionally. The weekly use of book chapters can be linked to the fact that lecturers need to consult books for teaching purposes. The occasional use of other resources may be responsible for the average level of research productivity established among the lecturers. In establishing the overall frequency of institutional repositories by lecturers in federal universities in Nigeria, the use of test of norm was used as presented in Table 5.

Table 5. Test of Nom showing the frequency of use of institutional repositories by lecturers in federal universities in Nigeria

Interval	Mean index	Frequency of use of IR
1-38		Not used
39-77	60.8	Occasional use
78-115		Regular use

The grand mean that shows the mean index is 60.8, and the classification was grouped into three (3) namely; Not used, Occasional use and Regular use

Table 5 focused on establishing the frequency of use of institutional repositories by lecturers in federal universities in Nigeria. The result reveals the prevalence of occasional use of institutional repositories by lecturers in federal universities in Nigeria.

Testing of Hypotheses

There is no significant influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria

Table 6. Result showing the influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria.

R	R Square	Adjusted R Square	Std. Error of the Estimate			
0.323	0.104	0.103	8.626			
SUMMARY REGRESSION ANOVA						
	Sum of Squares	df	Mean Square	F	P	Remark
Regression	4665.999	1	4665.999	62.708 73.575	0.000 0.000	Sig. Sig.
Residual	40031.601	538	74.408			
Total	44697.600	539				

Variable	Unstandardized Coefficients	Standardized Coefficients				
Model	(B)	Std. Error	Beta	t	Sig.	Remark
Constant	19.160	1.555	-	12.319	.000	-
Use of institutional repositories	.256	.024	.424	10.857	.000	Sig.

*Sig. at .05 level

Table 6 presents the result of the influence of use of institutional repositories on research productivity of lecturers. This result revealed that the influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria is significant ($F_{(1,538)} = 62.708$; $Adj R^2 = 0.103$; $\beta = .424$; $p < 0.05$). Hence, the hypothesis was rejected. The result further showed that the influence of use of institutional repositories on research productivity of lecturers in federal universities in Nigeria is positive which implies that improvement in use of institutional repositories would lead to a corresponding improvement on research productivity of the lecturers.

Discussion of findings

Among the major findings of this study is the level of research productivity of lecturers in federal universities in Nigeria. It was revealed that majority of lecturers in federal in federal universities in Nigeria are averagely productive in their research activities. This result is at variance with the early findings from the study of Okiki (2013) that concluded that lecturers in federal institutions in Nigeria had high level of productivity in terms of journal publications, technical reports, conference papers, working papers, and occasional papers. These indicators are also some of those used in this study and they are generally accepted globally as affirmed by Albers (2015). Publications play significant role in assessment of lecturers to higher cadres; hence it is not surprising that this major area responsible for their career progression is given priority. It is therefore not sure whether it is the impact of the institutional repositories that is reflecting in their publications.

It is evident from the findings that institutional repositories in the selected federal universities in Nigeria contained majority of the resources that could serve as leverage for lecturers in carrying out their research responsibilities. This is an affirmation of the position of Adaeze (2020) that there are several resources in institutional repositories to assist lecturers in carrying out research activities. The result affirms the assertion by Onyebinama, Anunobi, and Onyebinama (2021) that rich content could be available in the institutional repositories since faculty members are the major depositors of the content. Resource availability in the repositories should be advantageous to lecturers for high productivity of lecturers in the universities. The documents on IR are digital in nature, these digital documents consist of all electronic publications such as journals, theses, books and conference papers (Okumu, 2015).

Despite the fact that lecturers attested to availability of useful resources in their universities' institutional repositories,

the study found that lecturers in federal universities in Nigeria make use of the institutional resources for the purposes of preparation of seminar/lecture notes, writing papers/proposals, seminars presentations, and research works only. This finding affirms the results from the study of Martin-Yeboah, Filson and Boohene (2020) which reported that lecturers consult institutional repositories resources for the purposes of seminar/lecture notes, writing papers/proposals and seminars presentations. Li and Yang (2015) opined that in order for IRs to be fully beneficial, there is the need for all stakeholders to be aware of their existence, understand their value and above all, be willing to contribute to their sustainability. Dutta and Paul (2014) also pointed out that awareness is paramount. It was pointed out that low faculty awareness contributes to low patronage of the repositories. Ogbomo and Bibiana (2015) insist that universities should encourage promotional activities geared towards creating awareness of IR which will in turn enhance positive attitude towards IR establishment in universities. Repository sustainability demand that at every stage, the university community should be carried along in the development of the IR project. In a study of two private and two public universities in Ghana, Martin-Yeboah, Alemna and Adjei (2018) it emerged that repositories tended to be sustainable when there is a buy-in from every facet of stakeholders of an academic institution in the conception, creation and promotion of repositories in a collaborative manner. Ukwoma and Dike (2017) further admonish for the training for academics, librarians, and repository managers in order to equip them with the skills to organize the content for easy accessibility and retrieval of documents.

The results revealed overall occasional use of institutional repositories by lecturers in federal universities in Nigeria. The results further revealed weekly use of institutional repositories to access only book chapters while other information resources are used occasionally. The weekly use of book chapters can be linked to the fact that lecturers need to consult books for teaching purposes. The occasional use of other resources may be responsible for the average level of research productivity established among the lecturers. This finding is at variance with the result of the study of Bamigola and Adetimirin (2017) which reported that the development of institutional repositories in Nigerian universities is on the increase, and awareness of institutional repositories is on the increase. Asadi (2019) also observed that university repositories provide scholars with broader knowledge related to the research that is carried out by the individuals or groups in the specific area of interest. Institutional repositories present information users' access to wide range of information materials or intellectual contents all in one platform and location for their use.

It has been revealed through the test of hypothesis that use of institutional repositories has significant influence on research productivity of the lecturers. This relates to what Okiki (2013) discovered in a study that established that institutional repositories could significantly influence research productivity of lecturers. Institutions subscribe to databases that are very expensive to maintain while institutional repositories are freely available to access. Access has been a major challenge to several research materials that could aid research activities of lecturers. The ease of accessing institutional repository has greatly encourage high usage among lecturers. The position of Adeyemo and Jamogha (2021) that institutional repository could influence the research productivity of lecturers has also been confirmed through this study.

CONCLUSION

The research productivity of lecturers in federal universities in Nigeria as influenced by use of institutional repositories was investigated by this study. The study answered four research questions and tested one hypothesis at 0.05 level of significance. The study established an average level of research productivity of lecturers in federal universities in Nigeria in terms of quantity of production is average. Photographs, notebooks, seminar papers, inaugural lectures and illustrations and drawings are the most common types of information resources in the institutional repositories of federal universities in Nigeria. Preparing seminar/lecture notes, writing papers/proposals, seminars presentations, research works, preparing for lecture series and developing course materials/notes are the major purposes for which lecturers in federal universities in Nigeria use institutional repositories just as an overall occasional use of institutional repositories was established among the lecturers in federal universities in Nigeria. There is a significant influence of use institutional repositories on research productivity of lecturers in federal universities in Nigeria. The study thus, concluded that use of institutional repositories can improve the productivity level of the lecturers in federal university in Nigeria.

RECOMMENDATIONS

The following recommendations are proffered on the basis of the findings from the study:

1. University management should ensure the formulation and implementation of adequate university-wide policy that would encourage and supports research productivity of the lecturers. Such policy should be one that can be easily

translated to reality and devoid of any cumbersomeness.

2. Awareness on the availability and functionality of institutional repositories should be created among the lecturers in federal universities in Nigeria. The university management should organise regular training and retraining programme and workshops on the effective use of institutional repositories.
3. Infrastructure to support effective functioning of institutional repositories in the universities such as hardware stability and regular maintenance, faster internet access and stable power supply. This will improve access to institutional repositories resources for lecturers' use.
4. Lecturers should take advantage of every available opportunity to improve their research skills to enable them to be more productive.

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