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Effect of Gender on Lecturers' Submission and Retrieval of Research Output in Institutional Repositories in Private Universities in Southern Nigeria

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Abstract

This study was designed to determine the effect of gender on submission and retrieval of research output in IRs by lecturers in private universities in Southern Nigeria. A survey design was employed in the study. A list of lecturers in the two faculties of the two universities was obtained from which 150 lecturers were randomly selected. A self-designed questionnaire was used to collect data from the 150 lecturers out of which 100 were returned. Data were analyzed using frequency distribution, means, percentages, z-test and regression analysis. The study showed that submission of research output in IRs in private universities was significantly and positively influenced by the gender of lecturers, teaching experience and retrieval of research output and was higher for male lecturers. Retrieval of research output from IR was significantly and positively influenced by submission of research output and the qualification of lecturers and was higher for female lecturers. The gender of lecturers did not significantly influence retrieval of research output. The mean submission of research output by male and female lecturers was not significantly different at 5% whereas the mean retrieval of research output by male and female lecturers differed significantly at 5%. Research output submission and retrieval were significantly and positively related. The study concluded that the gender of lecturers significantly influenced submission of research output but was not a significant determinant of research output retrieval. The study recommended that universities should include submission and retrieval of research output in the conditions for performance evaluation of academic staff.

Keywords: Submission, Retrieval, Output, Open Access, Institutional Repository, Gender, Lecturers, Private Universities, Nigeria.

Introduction

Some decades back, access to the research output of scholars in institutions of higher learning the world over was restricted, due to the exorbitant cost of the journals in which they were published. As a result, most users could not access their information content. A window to overcome the acquisition and access challenge was opened with the advancement in technology resulting in open access to the research output of scholars.

Definition of Open Access

Maresk and Yaakub (2015) noted that the Budapest Open Access Initiative (BOAI) posited that Open Access (OA) is “the free availability of literature on the public Internet, permitting any user to read, download, copy, distribute, print, search or link to the full-text of these articles, crawl them for indexing, pass them as data to software, or use them for any other purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the Internet itself” (p. 3420 – 3427). The Bethesda and Berlin Statement defined “Open Access” as the ability to “copy, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution for author” Bethesda and Berlin Statement (as cited in Sellan & Sornam, 2017). The definitions of the BOAI, Bethesda and Berlin Statements center on the exclusion of price and barriers on access to resources. OA to scholarly work is promoted through open access repositories which involve self-archiving in institutional repositories (green route) and open access journals (gold route) (Laakso & Bjork, 2012).

Definition of Institutional Repository

Anenene, Alegbeleye and Oyewole (2017), described an institutional repository (IR) as a digital archive that provides a platform where the universities can archive their intellectual output.

Similarly, Saini (2018) posited that an IR is an online archive of the intellectual output created by faculty and researchers of an institution to enhance the visibility and promote free access to their research at a single interface. From the fore definitions of IR, it can be deduced that IR is an archive used for storage of submitted research output and to promote free access or retrieval of research output. In other words, it serves as an archive for submission of research output and as an information source to search and retrieve materials (Bamigbola and Adetimirin, 2017). This implies that lecturers use IRs to deposit their research output and likewise, access it to retrieve scholarly works of their colleagues and other scholars.

Statement of the Problem

Lecturers in universities are required to publish scholarly papers to enhance their academic progression. The publication of scholarly papers is premised on the conduct of quality research of which established knowledge in documented form is a veritable instrument. OA has broken the bounds in accessing established knowledge in documented form. As a result, lecturers are at liberty to access documented knowledge from open access institutional repositories. The availability of scholarly work in open access repositories presupposes the submission of research output to these repositories. Access to (retrieval) research output from OA repositories implies the availability (submission) of research output of already conducted research.

There have been studies on submission and retrieval of research output in open access institutional repositories in developed and developing countries (Prachi & Abdul, 2014; Ammarkleurt, 2017; Chimilo, 2016; Rugut, 2015) but there appears to be a paucity of empirical evidence on the effect of gender on submission and retrieval of research output in IRs. In the light of the foregoing, an empirical investigation of the effect of gender on submission and retrieval of research output in IRs becomes an important research endeavor.

Purpose of the Study

The survey was designed to determine the effect of gender on submission and retrieval of research output in IR by lecturers in private universities in Southern Nigeria, Specifically, the study determined and analyzed:

- (a). the profile of lecturers in private universities in Southern Nigeria in terms of age, gender, qualification, teaching experience and rank.
- (b). the distribution of research output submission and retrieval according to the gender of lecturers in private universities in Southern Nigeria.
- (c). the effect of gender on submission and retrieval of research output in IR by lecturers in private universities in Southern Nigeria.
- (d). the relationship between submission and retrieval of research output in IR by lecturers in private universities in Southern Nigeria.

Research Questions

The following research questions guided the study:

- (a). What is the profile of lecturers in private universities in Southern Nigeria in terms of age, gender, qualification, teaching experience and rank?
- (b). What is the distribution of research output submission and retrieval according to the gender of lecturers in private universities in Southern Nigeria?
- (c). What is the effect of gender on submission and retrieval of research output in IR by lecturers in private universities in Southern Nigeria?
- (d). What is the relationship between submission and retrieval of research output in IR by lecturers in private universities in Southern Nigeria?

Gender and Use of Open Access Institutional Repository

The United Nations Development Programme (UNDP, 2011) identified demographic variables that may influence and predict the use of ICT resources by individuals to include gender, income, level of education, skills and age. These variables are found to be important in understanding technology adoption behavior as well as behavior of technology users (Hernandez, Jimenez & Martin, 2011, p.114). For lecturers to make use of information and communication technology resources, they must have access to it. Consequently, Aramide, Ladipo & Adedayo, (2015) posited that access is a factor that can influence use of ICT resources by teachers. The ease of accessibility and retrieval would determine if a lecturer would use the resource or not. In effect, it is expected that if the lecturer finds it easy accessing the ICT resource, then the tendency to use it is high and vice versa.

Nunda and Elia (2019) investigated the association between gender and institutional repository usage by postgraduate students in selected Tanzanian higher learning institutions. The finding indicated that female respondents were using institutional repositories more than their male counterparts. This is contrary to the result of the investigation by Eirimiokhale (2019) on the influence of gender on utilization of electronic database by university lecturers in South-west, Nigeria in which no significant difference existed between the mean rating of the male and female lecturers in the usage of electronic databases. This implied that the male and female lecturers did not differ in their usage of electronic databases. The study also showed that gender was not a predictor of electronic database usage. Zhu (2017) in his study on who supports open access publishing investigated gender differences in the use of OA publishing. The result showed that there were significant gender differences in the use of OA publishing. In general, men were more likely to have experience of using both Gold and Green OA publishing compared to women. Gor

(2017) examined the influence of gender on utilization of online digital repository by distance learners in the University of Nairobi, Kenya and reported a significant relationship between learner's gender and use of online digital repository. Pembee (2014) examined the influence of demographic characteristics of staff and students on use of library information system at Kabarak University. The study showed that there was no significant difference between males and females in their usage of digital information systems. Oyeniya (2013) investigated gender differences in information retrieval skills and use of electronic resources and found that there was no statistically significant difference in the use of e-resources on the basis of gender. Therefore, while some studies reported differences in adoption and use of open access platforms and electronic resources based on gender, others did not report any difference.

Social Exchange Theory

This study draws from the Social Exchange Theory (SET), propounded by Homan (1958, 1961). The theory is used to explain factors that affect use of repositories. Kim (2010) posited that individual traits are among the factors that can predict repository usage by knowledge contributors and retrievers. Similarly, Lowga and Questier (2014) noted that individual traits can enhance both faculty behavioural intention, and consequently actual usage of open access. Many other researchers have reported that individual characteristics which include professional rank (Kim, 2011); age (Dulle and Minishi-Majanja, 2011), technical skills (Kim, 2011) determine usage of open access by faculty. It is assumed that the choice of use of particular individual characteristics in the above cited studies depends on the focus of the study. In this study, the focus variable or characteristic was gender which led to the investigation of the effect of gender on submission and retrieval of research output in IRs. Other individual characteristics (independent variables) were included in the multiple regression model that was used to determine the effect of gender on

submission and retrieval of research output. This is because the variation in the submission or retrieval of research output (the dependent variables) is due to the combined effect of various factors known as independent variables.

Method

This study employed a survey research design and was carried out in Southern Nigeria. Two private universities with functional institutional repositories were purposively selected. The selected universities were Covenant and Redeemer's universities. Two faculties common to the two universities were purposively selected to include Faculties of Natural & Applied Sciences and Social Sciences. A list of lecturers in the two faculties of the two universities was obtained from the website of the universities. The list formed the sampling frame from which a total of 150 lecturers (about one third) was randomly selected. A self-designed questionnaire was used for data collection. The questionnaire was distributed to 150 lecturers out of which 100 were returned and used for analysis. Data were analyzed using frequency distribution, means, percentages, Z-test and regression analysis. For objective three, the models for the regression analysis were implicitly specified as follows:

$$(a) \quad Y_1 = f(X_1, X_2, X_3, X_4, X_5, X_6)$$

Y = Submission;

X1 = Gender

X2 = Age

X3 = Qualification

X4 = Rank

X5 = Teaching Experience

X6 = Retrieval

(b) $Y2 = F (Z1, Z2, Z3, Z4, Z5, Z6)$

Y2 = Retrieval

Z1 = Gender

Z2 = Age

Z3 = Qualification

Z4 = Rank

Z5 = Teaching Experience.

Z6 = Submission

RESULTS AND DISCUSSION OF FINDINGS

Profile of Lecturers in the Universities

The profile of lecturers in the private universities is shown in Table 1.

Table 1: Distribution of Lecturers by their Socio-Academic Profile

Variable	Frequency		Percentage (%)		Total	
	Male	Female	Male	Female	Number	Percent (%)
Age (Yrs)						
≤ 30	5	0	5.0	0	5	5
31 – 40	28	34	28.0	34.0	62	62
41 – 50	12	19	12.0	19.0	31	31
≥ 51	2	0	2.0	0	2	2
Qualification						
BSc.	0	0	0	0	0	0
MSc.	27	15	27.0	15.0	42	42
PhD.	20	38	20.0	38.0	58	58
Teaching Experience (Yrs)						
1 – 5	24	20	24.0	20.0	44	44
6 – 10	16	18	16.0	18.0	34	43
11 – 15	5	15	5.0	15.0	20	20
16 – 20	1	1	1.0	1.0	2	2
>20	0	0	0	0	0	0
Rank						
Asst. Lecturer	14	5	14.0	5.0	19	19
Lecturer II	19	26	19.0	26.0	45	45
Lecturer I	9	15	9.0	6.0	24	24
Senior Lecturer	5	6	5.0	1.0	11	11
Assoc. Professor	0	1	0	1.0	1	1
Professor	0	0	0	0	0	0

Table 1 shows that most of the respondents, 40% of the male and 53% of the female lecturers were between 31 – 50 years old. This shows that in the light of the retirement age of at least 65 years for most private universities, the lecturers have between 15 – 34 years of active service as faculty members. Within this period, the lecturers can make further submission to and retrieval of research output from their IRs. However, this result indicated that female lecturers were still within child bearing and rearing age and this will probably constrain their capacity to submit and retrieve research output.

Most of the lecturers have at least a Master's degree. About 38% of the female lecturers had a Doctorate degree compared with about 20% of the male lecturers. This indicates that the female lecturers were better qualified than the male lecturers and this will probably put them in a position of advantage in relation to the submission and retrieval of research output.

About 34% of the female lecturers have teaching experience of between 6 – 20 years compared with about 22% of the male lecturers. This is an indication that the female lecturers have more teaching experience than their male colleagues. This will probably positively influence the submission and retrieval of research output by female lecturers.

About 31% of the female lecturers are of the rank of Lecturer II and Lecturer I compared with 33% of the male lecturers indicating that there are more male junior lecturers. Similarly, about 22% of the female lecturers are of the ranks of Lecturer I to Associate Professor compared with 14% of the male lecturers. This indicates that there were more female senior lecturers. This is an added advantage that female lecturers have over the male lecturers that will probably positively influence research output submission and retrieval.

Table 2: The Distribution of Submission and Retrieval of Research Output According to Gender of Lecturers in Private Universities.

The result on the distribution of submission and retrieval of research output according to gender of lecturers in private universities is shown in Table 2.

Gender	Research Output					
	Submission		Retrieval		Mean	
	Frequency	%	Frequency	%	Submission	Retrieval
Male	427	53.4	546	37.9	9	12
Female	373	46.6	893	62.1	7	19

Table 2 shows that the male lecturers submitted about 53% of the research output with a mean submission of about nine (9) research outputs while the female lecturers submitted 47% of the research output with a mean submission of about seven (7) research outputs. On the average, submission of research output was higher for the male than for the female lecturers. On the other hand, the male lecturers retrieved 38% while the female lecturers retrieved 62% of the research output with a mean retrieval of 12 and 19 research outputs for male and female lecturers respectively. This implies that on the average, retrieval of research output was higher for the female than for the male lecturers.

However, the z-test for the significance of the mean difference shown in Table 3 indicates that the difference in the mean submission of research output by male and female lecturers was not significant at 5% whereas the mean difference in retrieval of research output by male and female lecturers was significant at 5%.

Table 3: Z-test for Difference in Means

Variable	Mean	Mean Difference	SE Mean	Z
SUB-M	9.0851	1.14894	1.60076	0.718
SUB-F	7.9362			
RET-M	11.6170	7.38298	3.53410	-2.089**
RET-F	19.00			

M = Male; F = Female; ** = Significant at 5%

Table 4: Determinants of Submission of Research Output in OAIRs in Private Universities

The regression result of the determinants of submission of research output in IR is presented in Table 4.

Variable	Linear	Exponential	Semilog ¹	Double log
Constant	-6.371 (-0.979)	-0.257 (-0.299)	(-2.885) (-0.497)	0.138 (0.187)
Gender	4.127 (1.967)*	0.378 (1.362)	4.371 (2.049)**	0.431 (1.588)
Age	2.768 (1.392)	0.329 (1.251)	6.627 (1.479)	0.701 (1.231)
Qualification	-1.240 (0.539)	-0.020 (-0.065)	-3.854 (-0.652)	-0.350 (-0.466)
Rank	1.193 (0.845)	0.037 (0.199)	1.839 (0.617)	0.048 (0.127)
Exp	2.174 (1.362)	0.210 (0.996)	4.693 (1.680)*	0.434 (1.222)
Retr	0.177 (2.839)***	0.014 (1.716)*	1.919 (2.728)***	0.262 (2.936)***
R ²	0.226	0.117	0.207	0.163
R ⁻²	0.176	0.060	0.156	0.109
F-ratio	4.536**	2.057*	4.045***	3.017***

Figures in Parenthesis are t-ratios; *** = Significant at 1%; ** = Significant at 5%; * = Significant at 10%; 1 = Lead Equation; Retr = Retrieval

Based on the magnitude of the coefficient of multiple determination (R^2), the number of significant variables and the signs of the significant variables as they conform to a priori expectation, the semi log model was chosen as the lead equation. The model showed that the independent variables included in the model accounted for 20% of the variation in the submission of research output to IR by lecturers in private universities. Gender, teaching experience and retrieval of research output were significant and positive determinants of submission of research output. This implies that submission of research output was higher for male lecturers and that submission of research output increased as teaching experience and retrieval of research output increased. Male faculty members are less constrained by non-academic responsibilities such as child bearing and rearing and home keeping than female lecturers and are therefore likely to publish and submit more research output to the IR than the female lecturers. A higher teaching and

research experience coupled with a higher level of retrieval of research output will predispose lecturers to conducting more research and consequently publishing and submitting more research output to IRs.

Table 5: Determinants of Retrieval of Research Output in IRs in Private Universities.

The Regression result of the determinants of retrieval of research output in IRs in the Private Universities is presented in Table 5.

Variables	Linear	Exponential	Semi Log	Double Log ¹
Constant	-12.289 (-1.184)	-0.676 (-0.726)	-10.182 (-1.085)	-0.717 (0.880)
Gender	-4.081 (-1.201)	-0.460 (-1.511)	-2.991 (-0.860)	-0.402 (1.330)
Age	2.624 (0.820)	0.414 (1.445)	6.617 (0.912)	0.864 (-1.370)
Qualification	7.740 (2.154)**	0.892 (2.769)	18.656 (2.019)**	2.170 (2.702)**
Rank	-0.114 (-0.050)	-0.196 (-0.967)	0.543 (0.112)	-0.263 (-0.627)
Experience	-0.210 (-0.081)	-0.234 (-1.012)	1.007 (0.222)	-0.436 (-1.105)
Submission	0.451 (2.839)***	0.040 (2.796)***	2.207 (1.743)*	0.323 (2.936)***
R ²	0.202	0.212	0.157	0.217
R ⁻²	0.151	0.161	0.103	0.167
F-ratio	3.926***	4.160***	2.887**	4.296***

Figures in Parenthesis are t-ratios; *** = Significant at 1%; ** = Significant 5%; * = significant at 10%; 1 = lead Equations.

From the regression results of the determinants of retrieval of research output shown in Table 5, the double log model was chosen as the lead equation based on the relevant econometric criteria as indicated earlier. The independent variables included in the model explained about 22% of the variation in retrieval of research output. Qualification and submission were significant and positive factors that influenced retrieval of research output. Retrieval of research output increased as the qualification of lecturers increased and as submission of research output increased. A higher qualification will probably positively influence research experience which in turn will positively

influence retrieval of research output. The result indicates that a unit increase in qualification will lead to about a double increase in retrieval of research output.

Tables 4 and 5 showed that submission and retrieval were significantly and positively related across all the functional forms of the regression model. The positive correlation between submission and retrieval conforms to a priori expectation. Lecturers need to retrieve research output in order to carry out further research, publish papers and make further submission to the IR. In other words, submission engenders retrieval while retrieval engenders submission. The result in Table 4 indicates that a unit increase in retrieval will lead to about 2 unit increase in submission while Table 5 indicates that a unit increase in submission will lead to about 0.3 unit increase in retrieval. The focus variable sex, used as a proxy for gender, though negative was not a significant determinant of retrieval of research output by lecturers in private universities in Southern Nigeria.

Conclusion

In the light of the foregoing findings, this study concluded that lecturers' gender significantly influenced submission of research output, but was not a significant determinant of retrieval of research output. Also, submission of research output in IRs in private universities was significantly and positively influenced by the lecturer's teaching experience and retrieval of research output. On the other hand, retrieval of research output from IR was significantly and positively influenced by submission of research output and the qualification of lecturers. Submission and retrieval of research output were significantly and positively related.

Recommendation

The study recommended that universities should as a matter of policy include submission and retrieval of research output in the conditions for appraisal and assessment of lecturers for promotion. There is also need for IRs to adopt gender sensitive processes, information and

communication technology facilities in order to stimulate and enhance submission and retrieval of research output.

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