



Demographic Factors as Predictors of Open Educational Resources Awareness and Usage among Open and Distance Learning Students in Southwestern Nigeria

Les facteurs démographiques comme prédicteurs de la sensibilisation aux ressources éducatives ouvertes et de leur utilisation par les étudiants de l'enseignement ouvert et à distance dans le sud-ouest du Nigeria

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Keywords: Demographic factor; OER awareness; Usage, ODL students; Southwestern Nigeria

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Abstract

This study assessed the joint and relative contributions of demographic factors (age, sex, marital status, school, and academic level) to the prediction of Open Educational Resources awareness and usage among open and distance learning students in Southwestern Nigeria. The study adopted a descriptive research design of the survey type. Three ODL institutions (University of Ibadan Distance Learning Centre, University of Lagos Distance Learning Institute, and the National Open University of Nigeria, Ibadan Study Centre) were purposively selected. A structured questionnaire titled "OER awareness and usage Questionnaire" was pilot-tested, and an Alpha coefficient of .95 was obtained. Data collected from the study were analyzed using frequency count, simple percentages, and multiple regression analysis. Results of the study revealed that there is a joint contribution of age, sex, marital status, school, and academic level to the prediction of OER awareness and usage. It was further revealed that while school, academic level, and age had a significant relative contribution to the prediction of OER awareness among the students, sex and marital status had no significant relative contribution. Also, sex, marital status, and school have a significant relative contribution to OER

usage, but age and academic level of students had no contribution. It was therefore concluded that if all these demographic factors are properly considered in the drive towards increasing OER awareness and usage among ODL students, there is a greater chance that high feet could be achieved both in terms of awareness and usage of open educational resources among the students in order to boost the academic performance and in turn improve productivity level of ODL institutions in the country.

Keywords: Demographic factors; OER awareness; Usage, ODL students; Southwestern Nigeria

Résumé

Cette étude a évalué les contributions conjointes et relatives des facteurs démographiques (âge, sexe, état civil, école et niveau scolaire) à la prédiction de la connaissance et de l'utilisation des ressources éducatives libres parmi les étudiants de l'enseignement ouvert et à distance dans le sud-ouest du Nigeria. L'étude a adopté une conception de recherche descriptive du type de l'enquête. Trois établissements d'enseignement ouvert et à distance (le Centre d'enseignement à distance de l'Université d'Ibadan, l'Institut d'enseignement à distance de l'Université de Lagos et le Centre d'études d'Ibadan de la National Open University of Nigeria) ont été sélectionnés à dessein. Un questionnaire structuré intitulé "Questionnaire sur la connaissance et l'utilisation des REL" a été testé à titre pilote, et un coefficient alpha de 0,95 a été obtenu. Les données recueillies dans le cadre de l'étude ont été analysées à l'aide d'un comptage de fréquences, de pourcentages simples et d'une analyse de régression multiple. Les résultats de l'étude ont révélé que l'âge, le sexe, l'état civil, l'école et le niveau scolaire contribuent conjointement à la prédiction de la connaissance et de l'utilisation des REL. Il a également été révélé que si l'école, le niveau scolaire et l'âge ont une contribution relative significative à la prédiction de la connaissance des REL chez les élèves, le sexe et l'état civil n'ont aucune contribution relative significative. De même, le sexe, l'état civil et l'école ont une contribution relative significative à l'utilisation des REL, mais l'âge et le niveau scolaire des élèves n'ont aucune contribution. Il a donc été conclu que si tous ces facteurs démographiques sont correctement pris en compte dans le cadre de la sensibilisation aux REL et de leur utilisation par les apprenants de l'enseignement ouvert et à distance, il est plus probable que l'on parvienne à atteindre un niveau élevé de sensibilisation et d'utilisation des ressources éducatives ouvertes parmi les apprenants afin d'améliorer les résultats scolaires et, par conséquent, le niveau de productivité des établissements d'enseignement ouvert et à distance dans le pays.

Mots-clés : facteurs démographiques; prise de conscience des REL; utilisation, étudiants FAOD; sud-ouest du Nigeria

Introduction

Globally, open educational resources (OER) have become a topic of interest among scholars in the field of education, information science, computer science, etc. as there is a considerable push towards exploring the concept and its potentials towards making knowledge easily accessible across boundaries irrespective of geographical location. OER as a concept came into existence in July 2002 during the UNESCO meeting of developing world nations in Paris. After that, the concept has traveled across the world, and this has led to it being interpreted as synonymous to Open Courseware, open textbooks, digital library, open-access journal, etc. but what remains paramount is its ability to provide open access to knowledge without any associated cost (Padhi, 2018). UNESCO (2019) operationally defined OER as teaching, learning and research materials in any medium, whether digital or otherwise that exists in the public domain or are provided under an open license which guarantees access at no cost and the use, adaptation and redistribution of such material by anybody with limited or no restrictions. Also, the Hewlett Foundation (2016) defined OER as educational resources in the public sphere freely or perhaps released under an intellectual property license that allows its free use and re-purposing. These resources, according to the foundation may include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. In a similar vein, the Organization for Economic Co-operation and Development (2007) defined OER as digitized materials freely offered and opened for all to use and reuse for teaching, learning, and research. It, therefore, becomes clear that the underlying assumptions in all these definitions are the fact that OER is free and entails open dissemination of learning materials to support teaching and learning (Onaifo, 2016).

Since the emergence of OER, it has been increasingly recognized as an innovative tool for meeting the learning challenges in the international community by providing lifelong-long opportunities for learners through unlimited access to full sort of learning content irrespective of level and modes of education worldwide (UNESCO, 2019). Specifically, OER has been seen to have tremendously improved access to educational materials, eliminate costs associated with textbooks and other learning materials, and raise the standard of available learning materials. According to the Michigan Department of Education (n.d.), OER increases equity in the learning space as learning materials are available to learners of all age, keeps learning content in high quality and very relevant due to its flexible nature and the fact that it can easily be updated compared to traditional print textbooks. Also, it empowers learners through having learning materials to supplement their learning most, especially distance learners who lack direct interaction with their tutors as well as saving money, which could have been spent on textbooks acquisition.

Primarily, OER is considered to provide the opportunity for learners to engage in "5Rs" with learning materials, and these include the ability to retain, reuse, revise, remix and redistribute (McKillop Library, n.d.).

OER appears promising based on its documented potentials in the literature to reduce some of the challenges confronting educational provision in developing countries (Nigeria inclusive) most especially higher education provision as higher education remain a strong pillar of any country in terms of human resources development required for sustainable development of the country (Commonwealth of Learning, 2017). While Nigeria has been battling with problems associated with higher education provision particularly in the area of providing equitable access, reducing cost and enhancing the quality of education, most of the existing higher institutions in the country lack necessary infrastructure, have the low carrying capacity to accommodate the massive number of prospective students. Also, it is not flexible enough to accommodate those engaged with other primary activities, and all these, ultimately influence people to subscribe to the open and distance learning mode as a means to acquire higher education (Biao, 2012). However, learners on the ODL platform are still confronted with challenges ranging from poor infrastructure, lack of access to ICT facilities and lack of study materials especially access to relevant learning materials which remain a critical aspect of lifelong learning and key instrument at engaging open distance learning students as they lack direct contact with lecturers (Musingafi, Mapuranga, Chiwanza & Zebron, 2015). Ensuring inclusive, equitable, and quality education for ODL students, most of the problems they are facing have to be addressed especially, improving their access to relevant resources. An adequate awareness and utilization, as well as a clear understanding of demographic factors that contribute to OER awareness and usage, could serve as a potential solution to improve access to learning resources among the open distance learning students.

Despite the numerous potentials inherent in OER at providing learning content freely to learners across regions of the world most especially to open and distance learning institutions and students, its level of awareness is still relatively low (Jena n.d; Babson Survey Research Group as cited in Mckenzie, 2017, Itasanmi, 2020). Some of the documented potentials of OER to ODL institutions and students include the facilitation of open and distance education through learning content provision, initiating an e-learning platform, and promoting learning content licensed under the creative commons. Others include provision for a forum for professionals, creation of a form of consortium for courseware development, and enhancement of professional growth of ODL institutions, most notably in the developing countries where there is an acute shortage of establishing a knowledge pool for developing

useful courseware (Jena, n.d.). However, there is a lack of empirical studies on demographic factors that contribute to OER awareness and usage among ODL students. While there are abundant studies on OER awareness, impact, usage and adoption among different users of OER (Akomolafe & Adegun, 2014; Hu, Li & Huang, 2015; Onaifo, 2016; Cooney, 2017; Ikahihifo, Spring, Rosecrans & Watson, 2017; Gambo and Aliyu 2017; Petiska, 2018; Haas, Ebner & Schon, 2018; Grimaldi, Mallick, Waters & Baraniuk, 2019; Pounds & Bostock, 2019, Itasanmi, 2020), there is a dearth of studies on the contribution of demographic factors such as age, sex, marital status, school and academic level on OER awareness and usage among open and distance learning students in Nigeria. Therefore, this is the research gap that this study intended to fill by examining the contributing effects of age, gender, marital status, school of study, and academic level on OER awareness and usage among ODL students in southwestern Nigeria. Specifically, this study will provide answers to the following research questions:

1. What is the joint contribution of age, sex, marital status, school, and academic level to the prediction of OER awareness among ODL students?
2. What is the relative contribution of age, sex, marital status, school, and academic level to the prediction of OER awareness among ODL students?
3. What is the joint contribution of age, sex, marital status, school, and academic level to the prediction of OER usage among ODL students in Southwestern Nigeria?
4. What are the relative contributions of age, sex, marital status, school, and academic level to OER usage among ODL students?

Methodology

This study adopted the descriptive research design, and the population of the study consists of all students learning under the open and distance learning mode in universities in Southwestern Nigeria. Three ODL institutions (University of Ibadan Distance Learning Centre, University of Lagos Distance Learning Institute, and the National Open University of Nigeria, Ibadan Study Centre) were purposively selected based on having their interactive session during the conduct of the study. A simple random sampling technique was used to select 1000 ODL students across the three universities, which form the sample size for the study. A structured questionnaire titled "OER Awareness and Usage Questionnaire" was validated by ODL experts and pilot-tested among the University of Ibadan regular students, and .95 Cronbach's Alpha coefficient was obtained for the questionnaire. Out of the 1000 questionnaire distributed only 523 (UI DLC-198, UNILAG DLI-138, and NOUN-187) was properly filled and used for analysis. Data collected from the study were analyzed using frequency count, simple percentages and multiple regression analysis

Results

Table 1: Demographic Characteristics of the Respondents

Age	Age group	Frequency	Percentage (%)
	16-20	76	14.5
	21-30	278	53.2
	31-40	109	20.8
	41-50	49	9.4
	51-60	9	1.7
	61 years and above	2	0.4
	Marital Status	Single	377
Married		144	27.5
Divorced		2	0.4
Sex	Female	318	60.8
	Male	205	39.2
School	U.I/DLC	198	37.9
	NOUN	187	35.8
	UNILAG DLI	138	26.4
Academic Level	100	199	38.0
	200	73	14.0
	300	72	13.8
	400	160	30.6
	500	19	3.6

Table 1 above shows a summary of the demographic characteristics of the respondents. It was revealed that the majority (53.2%) of the respondents fall within the 21-30 age group, and the majority (72.1%) of them are single as well as female, making the majority of the respondents with 60.8%. Also, U.I/DLC has the majority with 37.9% and 100 level students forming the majority (38.0%) of the students.

RQ1: What are the joint contribution of age, sex, marital status, school, and academic level to the prediction of OER awareness among ODL students?

Table 2: Summary of regression on the joint prediction of age, sex, marital status, school and academic level on OER awareness among ODL students

R=.844						
R2=.600						
Adj. R2=.730						
Std. Error=7.76117						
Model	Sum of Squares	Df	Mean Square	F	Sig. (p value)	Remark
Regression	73.244	5	414.649			
Residual	31141.884	517	60.236	5.243	.009	Sig.
Total	31215.128	522				

RQ2: What is the relative contribution of age, sex, marital status, school, and academic level to the prediction of OER awareness among ODL students?

Table 3: Summary of regression on the relative contribution of age, sex, marital status, school and academic level on OER awareness among ODL students

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig. (p-value)	Remark
	B	Std. Error	Beta (β)			
(Constant)	37.322	1.585	-	23.543	.000	
Age	.258	.479	.307	1.539	.006	Sig.
Sex	.254	.701	.016	.362	.717	Not Sig.
Marital status	.095	.909	.006	.105	.917	Not Sig.
School	0.354	.438	.364	1.809	.004	Sig.
Level	.161	.276	.302	1.582	.005	Sig.

Table 3 showed the unstandardized regression weight (β), the standardized error of estimate ($SE\beta$), the standardized coefficient, the t-ratio, and the level at which the t-ratio is significant. As indicated in the table, school ($\beta=.364$, $t= 1.809$, $p < 0.05$) was significant on the OER awareness among ODL students, followed by academic level ($\beta=.302$, $t= 1.582$, $p < 0.05$) and age ($\beta=.307$, $t= 1.539$, $p < 0.05$). However, sex ($\beta=.016$, $t= .362$, $p > 0.05$), marital status, ($\beta=.006$, $t= .105$, $p > 0.05$) have no relative contribution. This implied that School, Academic level, and age have a relative contribution to OER awareness among ODL students in Southwestern Nigeria while sex and marital status have no relative contribution.

RQ3: What is the joint contribution of age, sex, marital status, school, and academic level to the prediction of OER usage among ODL students in Southwestern Nigeria?

Table 4: Summary of regression on the joint prediction of age, sex, marital status, school and academic level on OER usage among ODL students

R=.926						
R2=.622						
Adj. R2=.680						
Std. Error=7.12037						
Model	Sum of Squares	Df	Mean Square	F	Sig. (p value)	Remark
Regression	705.777	5	141.155			
Residual	26211.745	517	50.700	2.784	.017	Sig.
Total	26917.522	522				

As indicated in table 4, it was found that the linear combination of the joint prediction of age, sex, marital status, school, and academic level on OER usage among open and distance learning students ($F(5/517) = 2.784, p < 0.05$). The result yielded a coefficient of multiple regression of $R=0.926$ and multiple R-square of 0.622 . The result also revealed that adjusted $R^2=0.680$, indicating that about 68.0% of the variance was accounted for by the independent variables. This implied that there was a joint contribution of age, sex, marital status, school, and academic level to OER usage among open and distance learning students in Southwestern Nigeria.

RQ4: What are the relative contributions of age, sex, marital status, school, and academic level to OER usage among ODL students?

Table 5: Summary of regression on the relative contribution of age, sex, marital status, school and academic level on OER usage among ODL students

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig. (p-value)	Remark
	B	Std. Error	Beta (β)			
(Constant)	42.256	1.454	-	29.054	.000	
Age	.156	.439	.020	.356	.7226	Not Sig.
Sex	1.741	.643	.188	2.709	.007	Sig.
Marital status	1.874	.834	.120	2.247	.025	Sig.
School	.477	.401	.113	1.877	.041	Sig.
Level	.044	.253	.008	.174	.862	Not Sig.

Table 5 showed the unstandardized regression weight (β), the standardized error of estimate ($SE\beta$), the standardized coefficient, the t-ratio, and the level at which the t-ratio is significant. As revealed in the table, sex ($\beta=.188, t= 2.709, p < 0.05$) was tested significant on the OER usage among open and distance learning students, followed by Marital status ($\beta=.120, t= 2.247, p<0.05$) and school ($\beta=.113, t= 1.877, p<0.05$) all have relative contribution while age ($\beta=.020, t= .356, p>0.05$), academic level ($\beta=.008, t= .174, p>0.05$) have no relative contribution. These results imply that, while sex, marital status, and school have a relative effect on OER usage among ODL students in Southwestern Nigeria, age and academic level of the student have no relative effect on OER usage.

Discussion

The findings from this study provide critical insight into the joint and relative contributions of demographic factors such as age, sex, marital status, school, and academic level to the prediction of OER awareness and usage among open and distance learning students in Southwestern Nigeria. The study revealed

that there was a significant joint linear prediction of age, sex, marital status, school, and academic level on OER awareness and usage among open and distance learning students. Specifically, it was revealed that School, Academic level, and age have a significant relative contribution to OER awareness while sex, marital status, and school have a significant relative contribution to OER usage among ODL students in Southwestern Nigeria. However, sex and marital status have no relative contribution to OER awareness, and age and academic level have no relative contribution to OER usage among the students. This is an indication that the demographic characteristics of the ODL students play a significant role in their level of OER awareness and usage, most especially school of study. This result aligns with previous findings on related works (Razilan, Safawi, Mohd, Fadhilnor, and Zahari, 2014; Emiri, 2015). Particularly, school of study could enhance the level of awareness and usage depending on the OER policy in the university. For instance, in a school where there is much emphasis on OER development and learners' interaction with OER, learners tend to be more aware and use OER better than schools that do not prioritize the development and use of OER to supplement teaching materials for the distance learning students.

Also, the result indicates that age has significant effects on OER awareness and this could be attributed to the fact that majority of the respondents are in their active age and are digital enthusiasts which tend to make them explore different areas that they can access many materials freely to augment the course modules given to them thereby increasing their level of OER awareness. Equally, the academic level of the students also significantly contributes to the OER awareness among the learners as the level analysis of the results showed that 500, 300, 100, 400, and 200 ranked 1st, 2nd, 3rd, fourth and fifth respectively on awareness scale. On the other hand, sex and marital status significantly have a relative contribution to OER usage among the ODL students as a result showed that male ODL students' OER usage is higher than the female counterpart.

Conclusion and Recommendations

This study has attempted to bridge the research gap on joint and relative contributions of demographic factors such as age, sex, marital status, school, and academic level to the prediction of OER awareness and usage among open distance learning students in southwestern Nigeria. The results of the study indicate that there was a significant joint linear prediction of age, sex, marital status, school and academic level on OER awareness and usage among open and distance learning students and it was further revealed that School, Academic level and age have a significant relative contribution to OER awareness amongst other findings. It was therefore concluded that if all these demographic factors are appropriately considered in the drive towards increasing OER awareness and usage among ODL students, there is a greater

chance that high fees can be achieved both in terms of awareness and usage of open educational resources among the students in order to boost their academic performance and in turn improve productivity level of ODL institutions in the country.

Based on the findings of this study, the following recommendations are made: There should be concerted efforts by ODL institutions to find suitable means to improve OER awareness and usage among the students for better academic performance among the students.

Universities, most especially dual-mode institutions, should prioritize the development and use of OER to supplement learning materials for ODL students as this has been proven to have a positive effect on the academic productivity of the institutions and invariably increase the academic performance of students.

There is a need for further exploration of the contributing effects of these demographic factors on OER awareness and usage among larger sample size for better generalization for the country

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