

# PERCEIVED INFLUENCE OF EMERGING TECHNOLOGIES ON LIFELONG LEARNING AND RESILIENCE AMONG WOMEN WHO DARE OPEN DISTANCE LEARNING

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## Abstract

*In this study, the authors investigated the influence of emerging technologies on lifelong learning and resilience among women who dare Open and Distance Learning in a dual mode tertiary institution in the South-West geographical zone of Nigeria. The sample consisted of 431 female learners from the three available departments; Management Sciences, Social Sciences and Science Education. Both secondary and primary data were collected; the latter was collected using a questionnaire on Google Forms. The data were analysed descriptively and using the ordinary least squares regression with robust estimates of standard error. This latter method helps to overcome the possible econometric problems of serial correlation and heteroscedasticity in the model. Preliminary data shows that women enrolments over a period of ten years have consistently increased. Also, most learners were aware of the emerging technologies except technologies such as edublog.com, Edmodo, Weebly and Wiki spaces. The regression result shows that emerging technologies influenced lifelong learning and resilience of the women. Meanwhile, emerging technologies that influenced lifelong learning and resilience were google classroom and facebook only, while google drive posed a negative influence. Thus, more robust technologies, special female facilities and newly emerging technology job oriented fields should be introduced.*

**Keywords:** Emerging Technologies, Lifelong learning, Resilience, Open and Distance Learning, Women.

## 1. Introduction

Considering the scientific, emerging technologies and global pandemic of modern times, and the rate of explosion of knowledge in which man is constantly being inundated daily by new information, initiatives for innovations and changes in educational deliveries are inevitable. Every nation of the world strives to empower its citizenry to face the global challenges of the 21<sup>st</sup> Century. In Nigeria, education is described as ‘an instrument per excellence (NPE, 2018), an authentic way of developing the total capacities and potentials of human capital as well as sound learning society fit and significant to the 21<sup>st</sup> Century. Similarly, education has been identified by the United Nations as a tool for the attainment of all the seventeen Sustainable Goals. Every citizen needs to have access to lifelong learning that enables them to function appropriately in the society. There is a need for a type of education that allows for flexibility, accessibility and openness for all. The Open and Distance Learning (ODL) is such a vehicle. Such education provides flexible learning opportunities to learners while freeing them from time and place constraints (Commonwealth of Learning International, 2001; Shabani & Okebukola, 2002 and Oladipo & Okiki, 2020). Succinctly, lifelong learning, Open distance learning and technologies are interlinked.

Some authors have acknowledged the hurdles faced by women that enroll in online courses (Burge, 2001; Furst-Bowe & Dittmann, 2001). Some of the challenges include lack of family and institutional support, feelings of isolation, concerns for cost and time limitations (Furst-Bowe & Dittmann, 2001; Kramarae, 2001). The roles women perform are numerous and varied from one culture to another. Basically, a woman is a multi task individual and performs three fundamental roles which are: productive, reproductive and societal/communal responsibilities. Almost in all cultures, women are perceived as managers of homes and children minders. However, in modern times, it is no longer a taboo for a woman to be educated. With ODL, women who have been denied formal education because of one reason or the other have benefited immensely.

Although, there has been increased female learners enrolment in Distance Learning Institute (DLI) of the University of Lagos and other Open Distance Institutions in Nigeria, research is sparse on the influence of emerging technologies on lifelong learning and resilience. It is against this backdrop, that the present study is being carried out to investigate the influence of emerging technologies on the life- long learning and resilience among women who dare ODL.

## **2. Literature Review**

A review of literature shows that women including housewives, single mothers and young women who wish to upgrade their education do so through the medium of ODL. Open and Distance Learning has been a great feat in Nigeria, since it centres on distance teaching and learning, open for all ages, in which the learner and facilitator have only been separated from each other in space and in time (Osipita, 2016). Globally, large numbers of learners with the desire for learning have been able to receive quality education through ODL (Gensler (2014). According to Stephanie (2013), many women with family and career commitment now have access to quality education through Open and distance Education. Despite being career women and still been faced with various responsibilities of raising children and caring for their homes, those who receive support as well as mentorship, and are able to learn through emerging technologies have developed capabilities and leadership skills (O'Neil, Plank & Domingo, 2015). Sahni (2015), is therefore of the opinion that education helps women assert their rights and are able to realise their potential in all ramifications, hence women education is valuable.

Rapid changes in technology in human history have been observed and these changes affect both our personal and professional lives (Sullivan, Fulcher-Rood, Kruger, Siple & Van Putten, 2019). As a result, for lifelong learning, diverse resources and tools have been adapted to suit various academic needs in order to meet the fast pace of the world (Sullivan *et al.*, 2019).

Extant literature have shown emerging technologies as influential tools for promoting social interaction as well as for teaching and learning purposes. According to Davis III, Deil-Amen, Rios-Aguilar and González Canché (2011), exploring social media via the internet (web-based) for academic interaction is now on the rise. Across Canada, New Zealand and United States, research has found that the use of Social media revealed YouTube and Facebook as the most frequently used even for academic purpose (Reuben, 2008). Moxley (2006) in his research, discovered that educators have rapidly embraced wikis; which has been recognized as one of the web-based emerging technologies.

A Study by Ntlabathi, Nkonki and Mkonqo (2014) on the use of emerging technologies in Higher Education revealed that lecturers have positive perception about the support received by their use of black board to facilitate learning, which has improved teaching and learning. However, they also recommended the use of technologies such as facebook, wikis and blogs for learners to experience in-depth learning. Garrison and Kanuka (2004) in their study opined that both learners and tutors need support and access to emerging technologies with necessary skills, as well as the technical know-how for the implementation. Consequently, Beldarrain (2006) has argued that though “emerging technologies” have promoted a lot of benefits and support in teaching and learning both in asynchronous and synchronous conditions but still faced with global challenges that may impede the implementation. However, there seems to be dearth of literature on the use of emerging technologies on lifelong learning and resilience among women who dare Open and Distance Learning, hence the need for this study.

## **3. Methodology**

### **Theoretical Framework**

This study hinges on the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis, & Davis (2003) because of its well-developed and intensive structure to test technology acceptance and adoption. It is less complex, easy to understand and apply as it is being adopted in the present study. The UTAUT model consists of five main concepts namely: performance expectancy, effort expectancy, social influence, facilitating conditions and behavioural intention which influence use behaviour and user acceptance. These concepts are further influenced by age, experience, gender and voluntariness of use, which are the moderating variables (Venkatesh *et al.*, 2003). Figure 1 illustrates the UTAUT model.

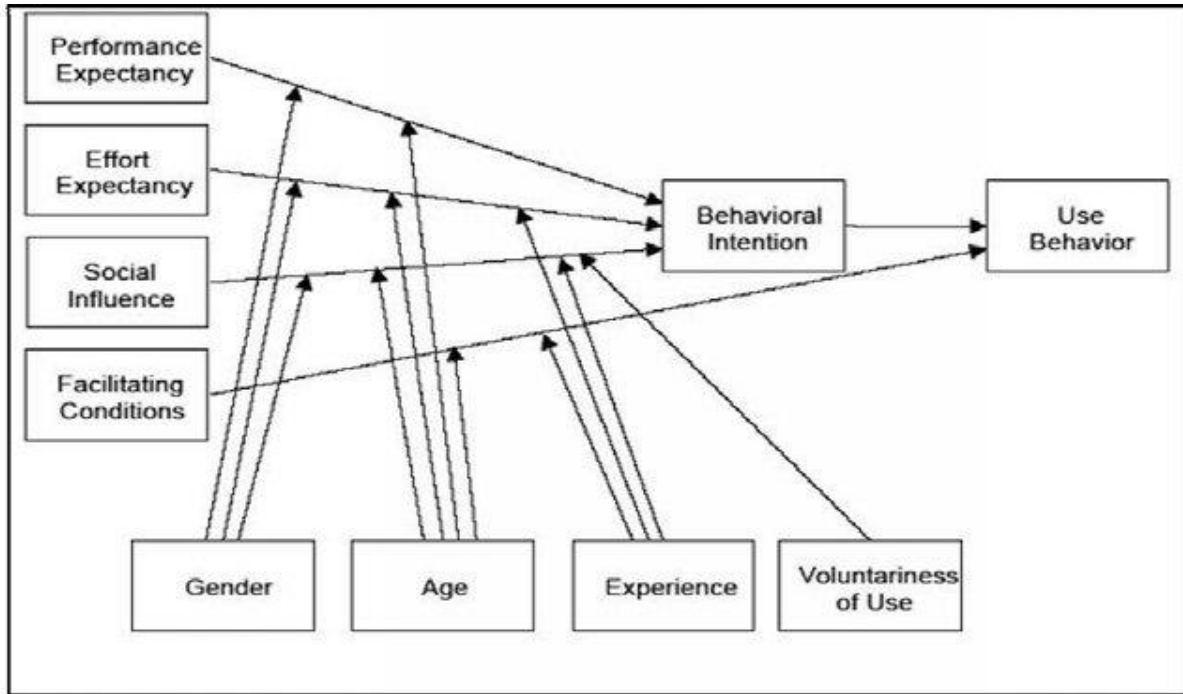


Figure 1: UTAUT model (Venkatesh *et al.*, 2003)

### Research Questions

The following research questions were answered in the study:

1. What is women enrolment trend into Distance Learning Institute (DLI), University of Lagos in the period under study?
2. What are the the personal characteristics of women who dare Open Distance Learning (ODL)?
3. Which of the emerging technologies are women who dare ODL aware of ?
4. What are the relevance of emerging technologies to women who dare ODL?

### Hypothesis

1. Emerging technologies do not significantly influence lifelong learning and resilience among women who dare ODL?

### Method

The study adopted a survey research design. The primary data generated was analysed using descriptive statistics of frequency tabulation and the ordinary least squares method with robust estimates of standard errors. The hypothesis was tested at 0.05 level of significance.

### Participants

The target population for the study comprised all the 9,487 female learners in years 200 to 600 in the Distance Learning Institute, University of Lagos, Nigeria. DLI was chosen based on the fact that within the Nigerian University System, it is one of the oldest practitioner of ODL and has the longest history of distant learning education with the objective of increasing access to education for all and promoting lifelong learning. In addition, DLI's delivery learning methods make use of innovative social and educational technologies. Female learners who are in the 200-600 levels and aged 18 and above were classified as women and are suitable for the study because they have interacted with the different technologies deployed for facilitation and learning of different courses. The choice of women was informed based on the fact that they are more multitasked than men and lagging in education based on customs and tradition of Africans (Stoet, O'Connor, Conner, & Laws 2013).

A total of 431 female learners (n= 431) in the Management Sciences, Education and Social Sciences departments participated in the study via a Google form link which was uploaded on all learners' platforms within two weeks.

The minimum sample size was obtained using the Yemane's method (Yemane, 1967) as follows:

$$n = N / 1 + N (e)^2$$

Where, n is the sample size; N is the population size; and e is the significant level of 5 % .

Given the population of female students of 9487, the sample size is computed as  $n = 9487 / 1 + 9487(0.05)^2 = 383.82 = 384$ . This value coincides with the minimum sample size for nearly any large population size or unknown population as put forward by Hazra and Gogtay (2016). Therefore, the sample size of 431 used is appropriate for analysis of the population features.

The learners in the sample were selected by probability as anyone in the population who fills the questionnaire via the Google form link automatically becomes a member of the sample.

### **Instrument and data collection**

The questionnaire developed used likert scale. It was given to two experts in educational technology for content and face validity. It was then pilot tested among 50 students in the faculty of education. From the pilot survey, the questionnaire was tested for reliability using the standardized Cronbach's Alpha. The results indicated that the instrument was reliable since the Cronbach's Alpha statistics of 0.946 was obtained. Also, secondary data on learners enrolment from 2010 to 2020 was collected from the Records department of DLI.

## **4. Discussion of Results**

### **Preliminary Results**

**Table 1: Female enrolment in DLI from 2010- 2020**

<u>S/No</u>	<u>Session</u>	<u>Female</u>
<u>1</u>	<u>2010/2011</u>	<u>5,778</u>
<u>2</u>	<u>2011/2012</u>	<u>6,361</u>
<u>3</u>	<u>2012/2013</u>	<u>6,969</u>
<u>4</u>	<u>2013/2014</u>	<u>7,350</u>
<u>5</u>	<u>2014/2015</u>	<u>5,075</u>
<u>6</u>	<u>2015/2016</u>	<u>7,982</u>
<u>7</u>	<u>2016/2017</u>	<u>6,386</u>
<u>8</u>	<u>2017/2018</u>	<u>8,434</u>
<u>9</u>	<u>2018/2019</u>	<u>8,855</u>
<u>10</u>	<u>2019/2020</u>	<u>9,487</u>
	<u>TOTAL</u>	<u>72,677</u>

The data presented in Table 1 shows that the number of female enrolment has been on the rise over the periods. The only exceptions were in 2014/2015 and 2016/2017 sessions in which female enrolment fell from what it was in the previous session.

**Table 2: Personal Characteristics of Respondents**

<b>Age of Respondents</b>			
	Freq.	Percent	Cum.
21-25 years	148	34.34	34.34
26-30 years	154	35.73	70.07
31-35 years	62	14.39	84.45
36-40 years	27	6.26	90.72
41-45 years	15	3.48	94.2
46-50 years	6	1.39	95.59
51 years and above	4	0.93	96.52
Less than 20 years	15	3.48	100
<b>Total</b>	<b>431</b>	<b>100</b>	
<b>Employment Status</b>			
	Freq.	Percent	Cum.
Employed in a Private sector	197	45.71	45.71
Employed in a Public sector	58	13.46	59.16
Not employed	47	10.9	70.07
Self Employed	129	29.93	100
<b>Total</b>	<b>431</b>	<b>100</b>	
<b>Income</b>			
	Freq.	Percent	Cum.
101,000 - 200,000 Naira	50	11.6	11.6
201,000 Naira and above	15	3.48	15.08
30, 000- 100, 000 Naira	366	84.92	100
<b>Total</b>	<b>431</b>	<b>100</b>	
<b>JAMB Exam Attempt</b>			
	Freq.	Percent	Cum.
No	60	13.92	13.92
Yes	371	86.08	100
<b>Total</b>	<b>431</b>	<b>100</b>	

**Source: Authors' Survey, 2022**

The results in Table 2 suggest that the majority of those enrolled into the programme are of age-ranges 26 – 30 years (154 individuals) and 21 – 25 years (148 individuals). The distribution largely shows that enrolment declines with age-range.

Also, the results show that majority of enrolled individuals are employed in the private sector (197 individuals), while a sizeable number of them are self employed (129 individuals). About 10 percent of them are unemployed. In terms of income distribution, the majority (representing about 85 percent) earns between 30,000 naira and 100,000 naira while others (about 15 percent of them) earns above 100,000 naira. Besides, majority of the respondents (about

86 percent) have attempted the Joint Admissions and Matriculation Board (JAMB) examination for a full time admission before enrolling into the ODL programme.

**Table 3: Awareness of Emerging Technologies**

<b>Blog and Blogging Resources</b>			
	Freq.	Percent	Cum.
Not Aware	139	32.3	32.3
Aware	292	67.7	100
<b>Total</b>	431	100	
<b>EduBlog.org</b>			
	Freq.	Percent	Cum.
Not Aware	243	56.4	56.4
Aware	188	43.6	100
<b>Total</b>	431	100	
<b>Bloggers.com</b>			
	Freq.	Percent	Cum.
Not Aware	197	45.7	45.7
Aware	234	54.3	100
<b>Total</b>	431	100	
<b>Class websites/ Course Management tools</b>			
	Freq.	Percent	Cum.
Not Aware	28	6.5	6.5
Aware	403	93.5	100
<b>Total</b>	431	100	
<b>Edmodo</b>			
	Freq.	Percent	Cum.
Not Aware	328	76.1	76.1
Aware	103	23.9	100
<b>Total</b>	431	100	
<b>Google Classroom</b>			
	Freq.	Percent	Cum.
Not Aware	140	32.5	32.5
Aware	291	67.5	100
<b>Total</b>	431	100	
<b>Moodle</b>			
	Freq.	Percent	Cum.
Not Aware	121	28.1	28.1
Aware	310	71.9	100
<b>Total</b>	431	100	
<b>DLI LMS</b>			
	Freq.	Percent	Cum.

Not Aware	14	3.2	3.2
Aware	417	96.8	100
<b>Total</b>	431	100	
<b>Weebly</b>			
	Freq.	Percent	Cum.
Not Aware	326	75.6	75.6
Aware	105	24.4	100
<b>Total</b>	431	100	
<b>Wiki Spaces</b>			
	Freq.	Percent	Cum.
Not Aware	250	58	58
Aware	181	42	100
<b>Total</b>	431	100	
<b>Drop Box</b>			
	Freq.	Percent	Cum.
Not Aware	203	47.1	47.1
Aware	228	52.9	100
<b>Total</b>	431	100	
<b>Google Drive</b>			
	Freq.	Percent	Cum.
Not Aware	43	10	10
Aware	388	90	100
<b>Total</b>	431	100	
<b>Twitter</b>			
	Freq.	Percent	Cum.
Not Aware	51	11.8	11.8
Aware	380	88.2	100
<b>Total</b>	431	100	
<b>Facebook</b>			
	Freq.	Percent	Cum.
Not Aware	25	5.8	5.8
Aware	406	94.2	100
<b>Total</b>	431	100	
<b>WhatsApp</b>			
	Freq.	Percent	Cum.
Not Aware	10	2.3	2.3
Aware	421	97.7	100
<b>Total</b>	431	100	
<b>Telegram</b>			
	Freq.	Percent	Cum.

Not Aware	8	1.9	1.9
Aware	423	98.1	100
<b>Total</b>	431	100	

**Source: Authors' Survey, 2022**

The results in Table 3 revealed that the majority of respondents are aware of emerging technologies except technologies like edublog.com, Edmodo, Weebly and Wiki spaces.

**Table 4: Results of the Relevance of Emerging Technologies to Respondents**

	SA(%)	A(%)	D(%)	SD(%)
Emerging Technologies help me retrieve learning materials	39.68	55.68	3.71	0.93
It fosters the learning culture in me	23.67	69.61	6.03	0.7
It saves time spent on learning	22.97	65.43	10.67	0.93
It allows learning at my individual pace	36.89	58.47	4.18	0.46
I have instant access to Information	41.76	52.9	4.87	0.46
I am capable of retrieving contents	29.47	63.11	6.5	0.93
It reduces geographical boundaries	27.15	60.09	11.6	1.16
It fosters autonomy in Learning	19.95	68.45	10.21	1.39
It encourages collaboration	26.45	65.2	6.96	1.39
It implements motivating learning initiatives	29	66.13	4.18	0.7
It encourages flexibility in learning	35.73	61.02	2.09	1.16

**Source: Authors' Survey, 2022**

The results in Table 4 largely show that most of the respondents are of the opinion that emerging technologies have greatly impacted their endeavours positively. For instance, the results show that majority of respondents believe that emerging technologies help them retrieve learning materials. The results also show that majority of respondents believe that emerging technologies save time spent on learning. They also revealed that majority of respondents believe that emerging technologies allows learning at their individual pace and help them have instant access to information. In a way, these findings support the previous findings in the studies by O'Neil, Plank and Domingo (2015) and Garrison and Kanuka (2004).

## Main Results

**Table 5: Regression Analysis of the Impact of Emerging Technologies on Lifelong Learning and Resilience among Women who dare Open Distance Learning**

Variable	Coef.	Std. Err.	T	p-value
Blog & Blogging Resources	0.080	0.084	0.95	0.341
Edublog.org	0.094	0.098	0.96	0.338
Bloggers.com	0.019	0.082	0.23	0.815
Class websites/Course Management tools	0.027	0.095	0.29	0.775
Edmodo	0.043	0.115	0.38	0.706
Google Classroom	0.204***	0.073	2.78	0.006
Moodle	0.089	0.080	1.11	0.266



DLI LMS	-0.073	0.110	-0.66	0.508
Weebly	0.156	0.099	1.58	0.115
Wiki Spaces	0.057	0.084	0.68	0.494
Drop Box	-0.051	0.082	-0.62	0.535
Google Drive	-0.201**	0.089	-2.24	0.025
Twitter	-0.023	0.085	-0.28	0.780
Facebook	0.229**	0.093	2.46	0.014
WhatsApp	-0.003	0.114	-0.03	0.976
Telegram	-0.113	0.112	-1.01	0.313
Constant	2.806	0.047	59.66	0.000
F-statistic	2.67			0.000

**Source: Authors' Computations, 2022**

Note: \*\*\* indicates significance at 1%; \*\* indicates significance at 5%.

The results presented in Table 5 revealed that among the emerging technologies considered in the study, only the influence of Google classroom, Google drive and Facebook are found to be statistically significant while the influence of other emerging technologies is found to be insignificant. Both google classroom and facebook have positive influence on lifelong learning and resilience among women who dare Open Distance Learning while google drive has a negative influence. This finding is in congruence with the findings of the studies by Reuben (2008) and Ntlabathi, Nkonki and Mkongo (2014). The reported F-statistic value of 2.67 and its p-value of 0.000 suggests that the overall model is statistically significant and in good fit.

**Table 6: Variance Inflation Factor (VIF – For Multicollinearity Test)**

Variable	VIF
WhatsApp	4.17
Telegram	3.63
Facebook	3.15
DLI LMS	2.8
Class websites/Course Management tools	2.36
Twitter	2.31
Google Drive	2.09
Blog & Blogging Resources	1.8
Bloggers.com	1.78
Edublog.org	1.64
Drop Box	1.52
Wiki Spaces	1.49
Moodle	1.44
Google Classroom	1.43
Weebly	1.36

Edmodo	1.29
<b>Mean VIF</b>	<b>2.14</b>

**Source: Authors' Computations, 2022**

As for the multicollinearity test, the results presented on Table 6 show that the VIF values for each of the explanatory variables are lower than 10. According to Asteriou and Hall (2015), VIF value below 10 suggests absence of severe or problematic multicollinearity in the model.

## 5. Conclusion and Recommendations

This study has examined the perceived influence of emerging technologies on lifelong learning and resilience among women who dare Open Distance Learning. Given the finding that women enrolment in ODL programme is on the increase, government across levels need to further promote ODL education through enactment of relevant legislations and enhanced funding. This has the tendencies of reducing illiteracy rate and promoting women participation in government and the economy. It is instructive to note that ODL programme is being patronized more by young people in the ages 21-30, contrary to the belief that the programme is largely meant for older people. However, the facts that most women in this age bracket would have preferred to enroll on a full time programme suggests that managers of ODL programmes must continue to upscale the standards of such programmes. It is suggestive that most of the women on ODL programmes in Nigeria might have challenges with payment of their school fees given their income levels. Thus, it is pertinent that a functional and robust programme for loan facility should be put in place for such learners while ensuring that there are no adverse selections of the learners in order to avoid mounting of bad debts.

Most learners on ODL programmes in Nigeria are aware of the emerging technologies except technologies such as edublog.com, Edmodo, Weebly and Wiki spaces. Therefore, it is pertinent that government at all levels in the country must encourage and promote the creation of technological hubs in cities and villages. This would promote further awareness and use of new technologies as well as the development of indigenous technologies in the country. However, this cannot be achieved without massive investment in infrastructures especially education and power. Besides, the fact that emerging technologies influence lifelong learning and resilience of women in Nigeria, suggests that facilitators and lecturers must continue to sharpen their skills on the use of new pedagogy technologies in the delivery of quality lectures, so that learners can learn on their own easily and enthusiastically at their convenient places and time. Universities and other higher institutions of learning in Nigeria must continue to upscale their training programme for ODL.

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