

INSTITUTIONAL READINESS FACTORS AND THE ADOPTION OF REMOTE LEARNING PLATFORMS AMONG UNIVERSITY STAKEHOLDERS IN NIGERIA DURING COVID-19 PANDEMIC

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Abstract

The advent of COVID-19 pandemic has brought the new normal, not only in social interactions but also in teaching-learning activities. It caused the sudden change by most education institutions to remote learning platforms as a result of state configuration policies that prohibited social gathering and enforced social distancing. Lack of empirical findings on responses of higher education stakeholders to the adoption of remote learning platforms during COVID-19 pandemic created an impetus to examine institutional readiness factors and the adoption of remote learning platforms among public and private universities' stakeholders. This descriptive survey design used a total population of all academic staff of universities in the Southwest Nigeria. One hundred and sixty eight (168) participants were randomly sampled across states in the Southwest using a validated on-line instrument designed on "Google form" and which had a Cronbach Alpha coefficient of ($r=0.70$). Data collected was analysed using blinder Oaxaca decomposition procedure of Stata. The result revealed that the tendency to adopt the remote learning platform by both private ($F_{(4, 41)}=3.15, p<0.05$) and public ($F_{(4, 113)}=2.93, p<0.05$) stakeholders was significant. The level of readiness of public institutions' stakeholders in terms of facilities, training, self-efficacy and perceived usefulness of remote platforms was not significant while the self-efficacy of private stakeholders was significant ($\beta = .063, t = 2.16, p<0.05$). The result informed the need for more trainings and provision of facilities for optimum readiness for any future emergency like COVID-19 pandemic.

Keyword: higher institution, remote learning, stakeholders, COVID-19, learning platform

Background

Higher education in Africa is traceable to the period of monastic system in the late BC and early AD when Alexandria Museum and Library were prominent in Egypt. Higher education then was influenced by Islamic, Arabic, Christian education and eventually by Christian missionaries. The advent of colonialism also had a great influence on classical higher education in Africa as the continent was exposed to western form of higher education brought by the colonial masters. In fact, secondary education, which produced

inputs for higher education during colonialism, was courtesy of Christian missionaries (Methodist, Anglican and Presbyterian churches).

Higher education in Africa during the colonial era operated as affiliate campuses of foreign French and English universities. Obanya (2004) reported that most premier universities in African countries were offshoots of foreign universities and were established as affiliate colleges or campuses. The author established further that University of Ibadan in Nigeria, University of Ghana in Ghana, and Fourah Bay College in Sierra Leone were affiliates of University of London. Similarly, universities of Yaoundé, Dakar and Abidjan were affiliate campuses of France's universities (Obanya, 2004). Their status as affiliate colleges changed into full-fledged universities after each of the countries gained independence. The policies of most colonial governments were to develop graduates that would occupy positions that required low or middle level manpower whereas, positions that required high level manpower were majorly occupied by foreigners. After many years of independence most affiliate campuses became full-fledge universities. The goal of higher education, especially university was to develop high level manpower that would occupy positions left by the colonial masters.

Higher education includes education received from colleges of education, polytechnic, universities and other degree or diploma awarding institutions. The prime aim of higher institutions was to develop middle or high-level manpower for industries, and for self-reliance. Prior to 1999, most Nigerian universities were administered by federal and state governments. Before that time, reports on tertiary institutions highlighted infrastructural decay and funding problems, evidenced by the approval of budgets that were far lower than what the institutions requested (Babalola. 2007). The author identified factors that were responsible for such trends as:

- i. The rising and competitive demand for funding by institutions leading to prioritisation by government.
- ii. Government's dwindling income due to unstable crude oil prices.
- iii. The hyper level of inflation that plagued the country then.

These debacles led federal government to opt for public private partnership (PPP) in higher education. In 1999, the university regulatory body in Nigeria, National Universities Commission (NUC), granted license to the first three private universities who met the conditions for running full-fledged universities. They were Igbinedion University; Babcock University and Madonna University (Ajadi, 2010). In 2019, National Research Foundation (NRF, 2019) reported that there were 40 federal, 47 state and 74 private universities in Nigeria. Literature revealed that private institutions seemed to receive attention from non-governmental organisations (NGOs), churches, communities and individuals, hence the acquisition of more facilities. Besides, the administrative leadership styles in private institutions allow close monitoring and supervision of both human and material resources in the schools. This makes anything provided to be properly maintained (Ntukidem, Ntukidem, and Eyo, 2011). However, differential pattern of administration have been observed. The National Universities

Commission (NUC) plays a major role in ensuring that facilities in universities meet minimum standards as prescribed in the Benchmark Minimum Academic Standards (BMAS) documents against which facilities are assessed. Despite this effort, recurrent reports on the status of basic information and communication technology (ICT) facilities in Nigerian public and private universities emphasize lack of ICT knowledge and experience among university teaching staff (Nwachukwu & Asom, 2015) and absence of training in the usage of ICT facilities (Amusa & Ainmo, 2016; Nkoyo & Egbe, 2016). In addition, Ige (2012) observed that many lecturers in private universities are retirees who, apart from being too old, lack fresh ideas and skills to handle 21st century classroom situations.

Eze, Chinedu-Eze and Bello (2018) contend that most studies have focused on public higher education institutions (HEIs) and largely ignored their private counterparts. Bukhari (2010) observed that although some universities, especially the private ones, try to embrace complete utilization of e-learning facilities by allocating funds for their procurement, they have failed to accomplish this objective. Eze, Chinedu-Eze, and Bello (2018) argued that private HEIs in Nigeria are more IT-driven than public HEIs because they have greater operating agility and make faster adoption decisions resulting from their ownership and goal patterns. They often fall short of their goals because of network and power fluctuations, limited resources, poor societal awareness and enlightenment. The foregoing suggests that private higher institutions are more likely to be IT-driven than public ones.

The pattern of private and public higher institutions' adoption of remote learning platform during COVID-19 pandemic is yet to be reported in the literature. Studies indicate different strands of corona viruses. The first strand, identified around 1960, was called Middle East Respiratory Syndrome (MERS) and was termed MERS-COV. It was spread, mainly, through direct contact with the intermediate host or consumption of the virus (Yin & Wunderink, 2018; Zhou, Yang, Wang, Hu, Zhang & Zhang, 2020). It should be noted that MERS-COV spread mainly in the Middle East.

Between December 2003 and January 2004, another corona virus called Severe Acute Respiratory Syndrome (SARS) emerged in China. . Due to its capability to mutate rapidly under ambient conditions, it was reported that SARS had two species: SARS-CoV and SARS-CoV-2 (Letko & Marzi, 2020). SARS-CoV-2 may readily transmit, while it caused less serious human infections than SARS-CoV (Simmons, Gosalia, Rennekamp, Reeves, Diamond & Bates, 2005). It was also reported that over 8,000 people from 29 countries and territories were infected, and at least 774 died worldwide due to the outbreak of SARS-CoV (Jame, 2020). Since MERS and SARS were confined to the Middle East, there was neither a global shutdown of economic, religious and education activities nor the need to prepare for future occurrences.

Sixteen years after, between December 2019 and January 2020, a more deadly strand of corona virus that spread easily was reported to have emerged in the Wuhan province in China. It was called COVID-19 and it swept across China and extended to

nearly all countries of the world (Dharmendra, Risharbha & Pramod, 2020). The global outbreak has been ascribed to the three main reasons: it started during the time of China Spring Festival with high level of attendants. Secondly, more detailed molecular mechanisms of viral binding and entry manners were yet to be elucidated, which hampered the development of targeted therapy. Thirdly, available data suggested that the SARS-CoV-2 may be less virulent than SARS-CoV and MERS-CoV with the previous 3.4 analysed mortality (COVID-19) which is lower than the death rate of SARS (9.6) and MERS (around 35) respectively (de Wit, Doremalen, Falzarano & Munster, 2016).

The World Health Organization (WHO, 2020) website reported that the first case of COVID-19 was discovered in Wuhan province, China and that the virus would spread to almost all the countries of the world. 17, 005, 983 affected persons and 666, 857 deaths (ECDC, 2020) had been reported at the time of putting this study together. COVID-19 pandemic does not only result in alarming mortality rate, it has its grip on other sectors of government apart from health. It caused the shutting down of the economy, religious gatherings, the educational institutions and other social institutions. China closed her schools at the outset of the pandemic in January 2020 and imposed a nationwide lockdown forcing students' learning to be transmitted via on-line platforms on 17 February. By April 27, their schools were reopened to prepare students for college entrance exams.

Basilaia & Kvanvadze (2020) reported that general education in the United States changed in the spring semester of 2020 when the first case of COVID-19 infection was detected in Georgia, USA. This led to the suspension of schooling in Georgia from 2nd March on the recommendation of the state's Ministry of Education, Science, Culture and Sport (MES 2020, the official statement of the Minister). On March 21, the country announced a state of emergency for one month with restrictions (The government of Georgia, 2020). The situation led to the forced stay at home of 592, 900 students in 2,313 schools countrywide (Geostat, 2020).

The abrupt shutdown of educational institutions, particularly primary and secondary schools, not only affected students' learning activities in school but also parents as learning continued while at home. Previous school closures in response to epidemic and pandemic situations shed light on various learning issues outside the school setting. For instance, during the 1918-1919 influenza pandemic in the United States, school closure and public gathering bans were associated with lower mortality rates and various students' learning problems (Simon, 2020).

Parents missed work when schools were closed in order to take care of their children thus, incurring wage loss in many instances. The situation negatively impacted productivity (Davis, Markel, Navarro, Well, Monto & Aiello; 2015). Localised school closure placed burdens on academics as parents, guardians and officials redirected children to tutorial classes (Wardrop, 2009). The Japan Times on-line (TJTO, 2020) reported that shutting down schools had adverse effects on students learning and the effects are disproportionate for under-privileged learners who had fewer educational

opportunities outside the school premises. Jordan (2020) also submitted that during close-down of schools, parents often facilitate learning activities of their children at home and struggle to perform the tasks which ordinarily they may not know how to carry out. This is especially true of parents with limited education and resources.

During the closure of schools because of COVID-19 pandemic, various measures were taken to facilitate students' learning. In the United States of America, some school districts offered alternative child learning options (Times, The Moscow, TTM, 2020). The Governor of Maryland mandated that specific children learning services remain opened for the children of emergency personnel while Washington State and California left it to the discretion of caregivers and teachers (TTM, 2020). Basilaia & Kvanvadze (2020) reported that in Georgia, Public Broadcaster's First Channel launched the educational project titled - "Teleskola" (TV School). There was live transmission of lessons on different subjects on some TV channels in the U.S. In Africa, at the level of primary and secondary schools, different initiatives were introduced to facilitate learning on television stations and the radio as substitutes for face-to-face interaction in school. These were given different nomenclatures such as "school at home" in Côte d'Ivoire "school on TV" in Cameroon, "learning at home" or "teachers' room" in Senegal, "school at home" in Togo and "school on-screen" in Benin republic. In Nigeria, there was no special directive from the federal government; each state and school determined the modality of students' remote learning. For instance, Oyo State created learning platforms on radio and social media for primary and secondary categories of learners and some schools also facilitated their students' learning at their discretion. UNESCO (2020) reported that Africa was the only continent where all countries have opted for a national schools' lockdown.

Differential learning opportunities have been noticed, which is an indication that on-line and remote learning cannot be unconnected with inequality in opportunity to learn among students and institutions based on ownership, location differences and pattern of administration. While some states in Nigeria (Oyo, Ogun & Lagos states), teachers have started on-line and social media teaching-learning interaction with their students, many states in the North Eastern part of the country are still gathering momentum. Nigerian Education in Emergencies Working Group (NEiEWG, 2020) reported that international assistance and funding will be made available for the implementation of COVID-19 response activities to ensure that children were able to continue their education in states prone to terrorism in North Eastern Nigeria.

Differential adoption of remote learning platforms among owners of HEIs could be attributed to assorted factors. Several researchers (Keramati, Mofrad & Kamarani, 2011; Bhuasiri, Xaymoungkhoun, Zo, & Rho, 2012; Chen & Tseng, 2012; Ahmed, 2010; Hu & Hui, 2012) reported that adoption of remote learning platform is motivated by geographical and savvy remote reach, separate learning environment, juicy paybacks, and continuous upgrade of skills within a short time. Other motivating factors are learners' control in terms of adaptability, flexibility, convenience, and cost effectiveness

in programme delivery and management. In addition, Gewin (2020) observed that there was no prior training for students and teachers on how to use remote learning platforms for teaching-learning activities before COVID-19. This condition could engender variation in the adoption of remote learning platforms by private and public schools in Nigeria.

The COVID-19 pandemic indeed created a new environment for learning. Most on-site school activities were changed to on-line platforms with the immediate home environment serving as a location for learning. Literature shows that the adoption of remote or on-line learning platforms is determined by the level of ICT training received, available ICT facilities, perceived usefulness of the platforms and level of users' self-efficacy. Most empirical studies that examined adoption of remote platform facilities for teaching were conducted before the advent of COVID-19. No known study compared differential adoption of remote platforms for learning between private and public universities in the South-West, Nigeria. This study, therefore, investigated institutional readiness factors and the adoption of remote learning platforms among public and private universities stakeholders in Nigeria during COVID-19 Pandemic. The result will serve as a guide to university education stakeholders in Nigeria in identifying determinants of the adoption of remote platforms for learning and the difference in readiness for such adoption. The broader goal is to devise actionable strategies to curb bottlenecks in the event that remote learning tradition lasts beyond the COVID-19 pandemic. University staff's perceptions of the use of remote platforms for learning will be revealed to stakeholders in education to determine its continuity after the COVID-19 pandemic.

The study purposed to examine institutional readiness factors influencing adoption of remote learning platforms among public and private university stakeholders in Nigeria during COVID-19 pandemic. It investigated:

- How the level of training given to private university's staff, availability of ICT facilities, perceived usefulness of remote learning, and self-efficacy in using remote learning platforms could influence their adoption of remote learning platforms during COVID-19 pandemic.
- How institutional factors such as training, ICT facilities, perceived usefulness of remote learning and staff self-efficacy in handling remote learning platforms influence the adoption of remote learning platforms by public universities in the South-West, Nigeria during COVID-19 pandemic.
- Disparity in level of preparedness for the adoption of remote learning platforms during COVID-19 pandemic.

Research Questions

1. Would the level of training, ICT facilities, and perceived usefulness of remote learning and self-efficacy of private higher institution stakeholders reliably

- predict the adoption of remote learning platforms during COVID-19 pandemic in Nigeria?
2. How reliably would the level of training, ICT facilities, perceived usefulness of remote learning, and self-efficacy of public higher universities stakeholders predict the adoption of remote learning platforms during COVID-19 pandemic in Nigeria?
 3. Are there differences in the adoption of remote learning platforms between public private higher institution stakeholders during COVID-19 Pandemic in Nigeria?

Methodology

A cross sectional study was conducted across different private and public stakeholders of universities in South-West, Nigeria. Quantitative method of data collection was adopted using on-line questionnaire to solicit opinions in form of facts and figures. The study population comprised academic staff of Nigerian universities. Convenient sampling technique was employed to select 168 participants across universities and states in South-West, Nigeria using an on-line instrument designed in “Google form” (https://docs.google.com/forms/d/1OqLZu3C_6hG1CGrZ9xBdzTLm41JM_9FFKvVdFzc1szs)

The instrument elicited information on variables such as location, adoption of on-line platforms, training of staff, digital citizenship, staff self-efficacy and availability of facilities for remote teaching-learning activities during COVID-19 pandemic. The reliability of the instrument was established using Cronbach Alpha reliability approach to obtain the coefficient of “r”=0.702 which was an indication that the instrument was reliable. The data collected were analysed using blinder Oaxaca decomposition procedure of Stata.

Results

The result was presented according to research questions raised in the study as follows;

Research Question 1

Would the level of training, ICT facilities, perceived usefulness of remote learning and self-efficacy of private higher institution stakeholders reliably predict adoption of remote learning platforms during COVID-19 pandemic in Nigeria?

Table 1: Predictors of Adoption of Remote Learning Platforms during COVID-19 Pandemic among Private Universities in Nigeria

Adoption	Coef.	St.Err.	t-value	p-value	95 Conf Interval	Sig
Training	-.131	.077	-1.69	.098	-.286	.025
Facilities	-.059	.105	-0.56	.578	-.272	.154
Self-efficacy	.063	.029	2.16	.037	.004	.123

Perceived Usefulness	-.026	.059	-0.44	.664		-.145	.093
Constant	1.649	.801	2.06	.046		.033	3.266
Mean dependent var		1.543	SD dependent var			0.690	
R-squared		0.235	Number of obs			46.000	
F-test		3.148	Prob> F			0.024	
Akaike crit. (AIC)		93.047	Bayesian crit. (BIC)			102.190	

Table 1 presents the results of analysis on the predictors of adoption of remote learning platforms during COVID-19 pandemic in Nigeria. The result revealed that independent variables taken together were the determinants of adoption of remote learning in the private universities ($F_{(4, 41)}=3.15$, $p<0.05$). However, staff self-efficacy ($\beta = .063$, $t=2.16$, $p<0.05$) was the only significant predictor of adoption of remote learning among private universities whereas status of training (received or not received) ($\beta = -.131$, $t=-1.69$, $p>0.05$), available facilities ($\beta = -.059$, $t=-0.56$, $p>0.05$) and perceived usefulness of remote platforms ($\beta = -.026$, $t=-0.44$, $p>0.05$) were not significant.

Research Question 2

How reliably would the level of training, ICT facilities, perceived usefulness of remote learning and self-efficacy of public higher institution stakeholders predict adoption of remote learning platforms during COVID-19 pandemic in Nigeria?

Table 2: Predictors of Adoption of Remote Learning Platforms during COVID-19 Pandemic among Public in Universities in Nigeria

Adoption	Coef.	St.Err.	t-value	p-value	[95 Conf Interval]	Sig
Training	-.078	.057	-1.37	.173	-.191	.035
Facilities	-.079	.068	-1.16	.248	-.213	.055
Self-efficacy	.022	.018	1.23	.221	-.013	.056
Perceived usefulness	-.039	.039	-1.00	.319	-.115	.038
Constant	2.178	.477	4.57	0	1.234	3.122 ***
Mean dependent var		1.500	SD dependent var		0.760	

R-squared	0.094	Number of obs	118.000
F-test	2.931	Prob> F	0.024
Akaike crit. (AIC)	267.310	Bayesian crit. (BIC)	281.164

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 2 shows the result of the analysis on the predictive influence of staff training, availability of ICT facilities, staff self-efficacy and perceived usefulness of remote learning platforms of the public universities stakeholders in the South-West, Nigeria. The result revealed that the predictors are determinants of adoption of remote learning platforms $F_{(4, 113)} = 2.93$, $p < 0.05$). However, the relative contributions of the predictors, training ($\beta = -.078$, $t = -1.37$, $p > 0.05$), facilities ($\beta = -.079$, $t = -1.16$, $p > 0.05$), self-efficacy ($\beta = .022$, $t = 1.23$, $p > 0.05$) and perceived usefulness of remote learning platforms ($\beta = -.039$, $t = -1.00$, $p > 0.05$), were not significant. Therefore, level of training of public university staff, available facilities, self-efficacy in using remote learning platforms and perceived usefulness of remote learning platforms by public university stakeholders could not predict the adoption of remote learning platforms during COVID-19 pandemic in Nigeria.

Research Question 3

Is there a difference in the adoption of remote learning platforms between public and private higher institution stakeholders during COVID-19 Pandemic in Nigeria?

Table 3: Differences in the Adoption of Remote Learning Platforms between Public and Private Universities during COVID-19 Pandemic in Nigeria.

Adoption	Coef.	Std.Err	Z	P>z	[95Cof.	Interval]
Differential						
Prediction_1	1.5	0.071	21.120	0.000	1.361	1.639
Prediction_2	1.543	0.105	14.640	0.000	1.337	1.750
Difference	-0.043	0.127	-0.340	0.732	-0.293	0.206
Decomposition						
Endowments	-0.022	0.062	-0.350	0.725	-0.143	0.100
Coefficients	-0.034	0.118	-0.290	0.771	-0.266	0.197
Interaction	0.013	0.034	0.370	0.709	-0.054	0.080

Table 3 presents the results of decomposition and difference in the adoption of remote learning platforms between the two stakeholders. The results revealed that the coefficient of the difference between the two variables is not significant ($\beta = -0.043$, $z = -0.340$, $p > 0.05$). This implies that the adoption of remote platforms for teaching-learning activities during COVID-19 pandemic period in Nigeria takes similar pattern among private and public universities stakeholder in Nigeria.

Discussion

The findings of the study revealed that the level of preparedness of public universities is low due to lack of basic determinants of adoption of remote learning such as training, facilities, staff self-efficacy in handling of remote learning platforms and perceived usefulness of the remote learning. This could be because there was no preparation for the adoption of remote learning platforms before the advent of COVID-19 pandemic. This observation supports the report of Gewin (2020) who submitted that there was no prior training for students and teachers on how to use remote learning platforms for teaching-learning activities before the COVID-19 pandemic in some institutions. Bello and Aderibigbe (2014) identified inadequate communications infrastructure, limited financial resources, limited data management capacity, low bandwidth, and inadequate supply of electricity as challenges of adoption of remote learning in Nigerian institutions. The finding further revealed that stakeholders of private universities are ready for the adoption of self-efficacy in using remote learning platforms. This is an indication that they could effectively utilize remote learning platforms as adopted by their institutions. This result contradicts the findings of Ige (2012) that many lecturers in the private universities are 'retirees' who apart from being too old to deliver are myopic about fresh ideas and skills to handle 21st century classroom situations. They, however, agree with Chinedu-Eze et al (2018) that private HEIs in Nigeria may be more IT-driven than their public counterparts as they are self-financing and are assumed to have greater operating agility to make faster adoption decisions than public HEIs.

The results of the study also revealed that there was no difference in the adoption of remote learning platforms by private and public universities in Nigeria. This could be because stakeholders in higher education made no provision for education activities during COVID-19 pandemic. Similar to what happened in the United States, Nigeria closed down all schools at every level on 19 March, 2020 and reopened them on 6 July, 2020 to allow primary school pupils in terminal classes to prepare for common entrance examinations, terminal junior secondary school students to prepare for Basic Education Certificate Examination and Senior Secondary School Certificate Examinations for the secondary school students in terminal class. The action was reversed on 8 July, 2020 and the resumption date postponed till 2021 by the Federal Ministry of Education due to the possibility of a spike in the number of COVID-19 infections since teachers and students might be unable to implement the social distancing policy and manage the situation in classroom settings. Public disenchantment on the postponement of resumption led to

early reopening at of schools at the discretion of state governments. However, learning activities in both private and public higher institutions were paralysed during the period. This could account for the lack of significant difference in adoption of remote learning in both public and private universities.

Conclusion and Recommendations

Social distancing and prohibition of social gathering associated with covid-19 pandemic necessitated the adoption of remote learning for teaching-learning activities but many education stakeholders and tertiary institutions in Nigeria made little or no use of the opportunity. It could also be inferred that private university staff were more ready for adoption, in term of their self-efficacy, than their public counterparts. Based on the findings and conclusions made, it could be recommended that:

1. National University Commission (NUC) should provide guidelines for the adoption of on-line platforms with respect to facilities and training for both public and private universities.
2. Both private and public university stakeholders should provide adequate facilities for optimum readiness in case of any future emergency like COVID-19 pandemic.
3. Higher institutions' stakeholders should strike a balance between the use of traditional and on-line learning platforms by giving equal opportunities to teaching staff to acquire needed efficacy in using emerging technologies to facilitate remote learning or classroom interaction using latest or innovative educational media.
4. Higher institutions should design their curricula allow remote and onsite implementation among learners of different academic abilities, locations and socio-economic status.

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