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E-LEARNING PLATFORM ON ACCESS TO UNIVERSITY EDUCATION BY PUBLIC SERVANTS IN NIGERIA

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Abstract. E-learning is made more effective because; it is enabled student to students to easily interact, share, and collaborate across time and space with the help of e-governance platform. Zoom and the Microsoft classroom team can invite students from all around the world to join a conversation on a certain subject simultaneously. E-governance may be able to work on problem solving skills, as well as brainstorming and developing new ideas. As a result of the shared experiences and knowledge, students are able to express themselves and reflect on their own learning." For students, e-governance facilities provide greater opportunity for students to build critical (higher order) thinking abilities through constructive learning methods. Students' critical thinking abilities may improve with more time spent in an online classroom. Students' inventiveness can be enhanced through the use of computer-based instruction. Discover new multimedia tools and produce products in the styles that are easily available through games, CDs, and television. The use of e-learning has increased both teaching and learning quality by combining student autonomy, capacity, and creativity over time in developed countries." Teachers are catalysts for the integration of technology through ICT, and e-learning supports teaching by simplifying access to course content." Creating an ICT class will be much easier if educational institutions provide teachers with the assistance, equipment, and resources they need. The study adopted survey research design. The populations of the study are Students and staff. The study adopted simple random sampling technique to select a representative population. Both primary and secondary method of data collection was used to obtain the data. A chi-square statistical technique was used to analyze. Finding from the study revealed that, e-learning has increase accesses to universities educational by public servants in Nigeria. Public servants in Nigeria have utilized e-learning and Online Distance Learning (ODL) programme to into various degree programmes. Finding also shows that, E-learning plays an important role in teaching because it is oriented toward the use of information and communication technologies that have become a part of the everyday life and day-to-day government operations. E-learning contributes to new teaching methods and provides many advantages to society and citizens. The study recommends that the e-learning tools and internet facilities should be upgrade to foster any network challenges in the online facilitation and lecture delivery system.

Keywords: *E-Governance, E-Learning, Online Distance Learning, University Education Public Servants, Nigeria*

Introduction

In 2004, the National E-Government Strategy Limited was established to co-ordinate the framework for the gradual roll-out of national e-governance activities. Although, Nigerian government has made it mandatory for public officers to undergo ICT training for the purpose of furthering e-governance in public service. Some agencies of federal government of Nigeria that have been fully integrated into the e-initiative include; E-passport programmed of Nigerian immigration, Abuja Geographical Information System (AGIS) online land registration, National Youth Service Corps (NYSC online), West African Examination Council (WAEC) direct, Joint Admissions and Matriculation Board (JAMB), Automated System for Customs Data (ASTCUDA), National Examination Council (NECO), Post-cash of Nigeria postal service, Electronic Voters Registrations, On-line payment of fees in most tertiary institutions, On-line display of admission into most Nigerian Universities, Electronically Central Motor Registration (ECMR) records and other proposed electronic public service delivery exists in public service agencies (Adeyemo, 2013). National Open University of Nigeria (NOUN) was among the government agencies that adopted e-governance in order to enhance effective service delivery.

E-learning is made more effective because; it is enable student to students to easily interact, share, and collaborate across time and space with the help of e-governance platform. Zoom and the Microsoft classroom team can invite students from all around the world to join a conversation on a certain subject simultaneously. E-governance may be able to work on problem solving skills, as well as brainstorming and developing new ideas. As a result of the shared experiences and knowledge, students are able to express themselves and reflect on their own learning." For students, e-governance facilities provide greater opportunity for students to build critical (higher order) thinking abilities through constructive learning methods. Students' critical thinking abilities may improve with more time spent in an online classroom. Students' inventiveness can be enhanced through the use of computer-based instruction. Discover new multimedia tools and produce products in the styles that are easily available through games, CDs, and television. The use of e-learning has increased both teaching and learning quality by combining student autonomy, capacity, and creativity over time in developed countries." Teachers are catalysts for the integration of technology through ICT, and e-learning supports teaching by simplifying access to course content." Creating an ICT class will be much easier if educational institutions provide teachers with the assistance, equipment, and resources they need. This study seeks to examine the effect of e-governance and e-learning platform on access to university education by public servants in Nigeria.

Statement of the Problem

The National Open University of Nigeria (NOUN) has become a leading ODL institution in Africa providing functional, flexible, accessible and cost-effective education for all who seek knowledge. It currently has 78 Study Centres spread across the six geo-political zones of the country. The current student population stands at over Five Hundred Thousand (NOUN Bulletin, 2018). In order to achieve the mandate of providing functional, flexible, accessible and cost-effective education for all, NOUN leveraged on e-governance using Information and Communication Technology (ICT) to deliver an education tailored towards the globalized economy. This is meant to fill the gaps created by the conventional universities were easy access; flexibility and effective administrative system are lacking. After Twenty years (20) its existence, Has the university provide easy and flexible education using e-governance platform such as e-learning (**Zoom and Virtual Learning Environment**)? Recently COVID 19 pandemic in Nigeria further push for the conduct of online academic activities in the National Open University of Nigeria.

The study seeks to answer these specific research questions: what is the effect of e-learning platform (Zoom and Virtual Learning Environment) on teaching and learning experience for online learners in Nigeria?

What is the effect of e-learning platform on access to higher education in Nigeria?

Conceptual clarification

Concept of E-Learning

E-learning is one of the educational outcomes that have surfaced from the development of ICT. Its general concept is essentially learning which involves the usage of any electronic device, from computers to mobile phones, and which might, or might not, involve the usage of the internet (Web sites+ other applications) or an intranet (Local network system). E-learning could be presented through several resources, for example: computer software and internet websites. Moreover, other applications have been developed specifically for e-learning, such as Virtual Learning Environments (VLEs), which provide the user or the learner with numerous facilities like 25 comfortable access to learning materials, communication with lecturers or trainers and the other peers. The VLE provides flexible access to learning, as it can be accessed anywhere and anytime (Adam & Healy, 2000). There are many authors who have a positive

view of e-learning. One such example is Ruttenbur, Spickler, & luri (2000), who describe e-learning as "the use of networked technology that will make the revolution possible". Ruttenbur et al (2000) further argue that e-learning will play a critical role in changing the way we work and live. Ruttenbur et al (2000). However, some other studies provided the following declarations to describe and identify the idea of elearning. The European Commission (2001) describes e-learning as: "The usage of new multimedia technologies and the Internet to develop the quality of learning and teaching by easing access to facilities and services in addition to remote exchanges and collaboration" (The European Commission, 2001). The Joint Information Systems Committee (JISC) offered a parallel definition in 2003, defining e-learning as "learning facilitated and supported through using the information and communications technology (ICT)" (JISC, 2003). Likewise, Clark & Mayer (2003) have indicated that e-learning is the instruction delivered on a computer by way of CD-ROM, internet or intranet with the next qualities: containing content relevant to the learning objective; using instructional methods which include the examples and practice to support learning; using the media elements for example words and pictures to transport and deliver the contents and methods also, building fresh knowledge and skills linked to individual learning goals or to improved organizational performance. Clark & Mayer (2003) Stockley (2005) has defined e-learning as "the delivery method of a learning, training or education program by electronic means, e-learning is involving the usage of a computer or electronic device (e.g. a mobile phone) to provide training, or learning material".(Stockley, 2005). Also, Oblinger and Hawkins (2005) suggest that e-learning has transformed from being a completely online course to use technology to deliver selected parts or all of course, independent of a fixed place or time. This means that students can be domestic, travelling or can learn at any distance (Oblinger and Hawkins, 2005). Nevertheless, there are differences of view regarding the definition of e-learning from other professionals working in this field, such as Dublin & Cross (2003) and Oblinger and Hawkins (2005) who demand that there is no definition accepted by all researchers. In the opinion of Oblinger and Hawkins, "everybody knows what you mean when you talk about e-Learning: however, the term e-learning means different things to different people" (Oblinger & Hawkins, 2005). Also, Heinze and Procter and Zemsky & Massy in 2004 addressed the same point, adding, "Yet, the e-learning is a concept in search of consistent definition". They argued that it is difficult to find a commonly accepted definition of e-learning (Zemsky and Massy (2004). In summary, new technologies, including computer networks, interactive-media, digital technologies, and the internet significantly increase the reach of e-learning provision. It enables and allow students to connect and interact with each other, and with their teachers, at any time, and it has opened up a universal market. Thus, many institutions have been attracted to e-learning systems and the e-learning market has grown continuously (Harun, 2001). In 2003, industry analysts situated the size of the e-learning market at 3 billion USD in the United States alone; the number grew to almost 15 billion USD by 2005, 18 billion USD in 2010, 26 and it is expected to reach 24 billion USD by 2015 (Adkins, 2013). Carayannis (2015) described the advantages of using e-learning systems in modern educational institutions. E-Learning, in comparison with traditional learning, significantly reduces the time needed to locate information. It also offers access to online resources, databases, periodicals, journals and other material. If a student has trouble understanding part of the coursework, finding tips on the matter couldn't be easier than having immediate access to supplementary, unlimited and mostly free material online. Those characteristics can potentially maximize the time spent actually learning rather than looking for information; this is the first benefit from the e-learning. Also, there are numerous benefits such as the cost of training; the speed to use the education packages faster without waiting for a training representative. Also, can provide feedback on training immediately. This suggests that e-learning offers a wide range of opportunities that need exploring and thus the proposition is that e-learning can be defined through three broad domains: E-learning is a distance education method: Most of the authors working in this field have

accepted that the conceptual idea of the term e-learning indicates distance education or education delivered online. E-learning is transactions facility on the web: Some writers have highlighted that the facilities offered via the Learning Management Systems (LMS) exemplify a second e-learning big success. The LMS proposal is an extensive set from the options and communication tools to service the lecturers and their students' interactions and implement daily activities that help improve the learning process. E-learning is electronically facilitated learning: This domain relates to the material of e-learning courses itself, rather than the electronic system, whereas it focuses on the material design of the e-books, CD-ROMs and Web sites, to assessment and electronic tests. Even though there are natural differences in all of those tools, they are all mediated electronically (Zemsky and Massy, 2004). This thesis could give a brief definition for e-learning from the conclusion that most of the definitions imply, which focuses on the means of delivery, but not on the process of learning. Those definitions viewed e-learning in terms of its numerous delivery options, but missed the learning process situation. However, the definition put forward by the Council of the open and distance learning quality did not ignore the learning process situation; whereas the definition was included the word created, in the sentence "effective learning process created..." means that the learning takes place. On the other hand, most the types of services and support tools could be provided in an e-learning system; whereas, the outcome may not be learning. From this argument, e-learning may be named [e-education]; but it might not be defined as e-learning as the process of interaction with electronically mediated education materials; except or unless the learning takes place. Where there is a focus on the learning process rather than the meaning of delivery, this study is accepting the definition formed by Mason and Rennie since (2006), which is as follows: "the e-learning is the effective learning process created by combining digitally delivered content with (learning) support and services"(Mason and Rennie, 2006, p.13-15).

Adoption and Utilization of Technology in Education

The advent of technology in education most especially Information and Communication Technology (ICT) has pager the quality and efficiency of education to the extent that there is no need for physically present to the classroom. ICT in education involves the adoption of general components of information and communication technologies in the teaching and learning process. Farajollahi & Sanaye'i, (2009) submitted that distance education, flexibility, interaction, active learning, cooperation and motivation are some features of ICT in education which makes e-learning different from other method in content, audience, learning style and needs of users. ICT in education there promotes diversity in content and different learning styles, it accommodates large number of audiences as well as different needs of users.

Also, Persaud (2006) emphasized that the integration process between ICT and school leadership involved a paradigm shift in the head teacher's ways of thinking. At the same time, coupled with the teacher's readiness to use ICT, students must also be knowledgeable and ready to use ICT for educational advancement. Ghavifekr, Afshari & Amla Salleh, (2012) submitted that in integrating ICT into curriculum development, schools and other educational institutions are supposed to prepare students to live in "a knowledge society". The most important factor that affect both teacher's and student's readiness to use ICT is technical assistance. Technical difficulties can become a major problem and a source of frustration for students and teachers in school which is capable of disrupting teaching and learning process. Jamieson-Proctor, Albion, Finger, Cavanagh, Fitzgerald, Bond, & Grimbeek, (2013) was of opinion that if there is lack of technical assistance and no repair on it, teachers are not able to use the computer for temporarily. This is not limited to use of computer alone, rather, any educational technology requires technical assistance in order not to discourage the users. In the same manner, Türel and Johnson's study (2012) revealed that technical problems become a major barrier for teachers. These problems include low connectivity, virus attack and printer not functioning. However, there are a few exceptions. Yang & Wang, (2012) submitted that schools

in the countries like Netherland, United Kingdom and Malta have recognized the importance of technical support to assist teachers to use ICT in the classroom while school in developing countries most especially in Nigeria where there are not enough teachers not to talk of technical assistant.

If all these challenges could be work on adoption and utilization of technology in schools is capable of improving and increasing the quality, accessibility and cost-efficiency of the delivery of instruction to students.

Jamieson-Procter et al., (2013) submitted that when students are familiar with technology and they learn better within technology-based environment because the use of technology in education contributes a lot in the pedagogical aspects in which the application of ICT will lead to effective learning with the help and supports from ICT elements and components. The adoption and utilization of technology to teaching and learning will not only assist student to learn better and faster but rather overcome the flaws in the traditional education system.

The adoption and integration of technology has given so many universities around the world the opportunity to conventional and distance education modes of education. Osuji (2010) submitted that most universities in Kenya use the single mode conventional system of education, while some run the dual mode, while two institutions run the single mode distance education. Higher institutions in Nigeria also run conventional and distance education modes of education. An example of this is Distance Learning Centre (DLC) of University of Ibadan and Distance Learning Institute (DLI) of University of Lagos.

Historically, Anderson & Dron, (2011); Kentnor, (2015) submitted that distance learning which is currently been referred to as online learning in the contemporary world evolves over the last three centuries with key delivery systems of the available tools of the postal system; radio and television; and interactive technologies as at that time. This simply shows that distance learning has been in existence before the advent of computer hence, computer and its technologies only enhance its delivery and perhaps changed its nomenclature from distance learning to online learning.

Jhurree (2005) submitted that much has been said and reported about the impact of technology especially computers in education. It was reported that computers is been used initially to teach computer programming but the development of the microprocessor in the early 1970s saw the introduction of affordable microcomputers into schools at a rapid rate. This is suffice to say, the advancement of computer influences almost all aspects of our lives from work, relationship with others, processing of data to information, analyze and share information, entertain ourselves among others. This does not exempt education which transforms it from traditional to online settings. Yusuf, (2005) submit that the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research.

Studies have shown that distance learning gains popularity every day, significantly expanding the teaching and learning space not only because computer technologies allow exchange of information meaningfully at any distance within the framework of the student-teacher system but because it allows students to learn inter-faculty university programmes in an in-depth and conducive atmosphere (Beese, 2014; Aktaruzzaman & Plunkett, 2016). This shows that adoption of technology in education sector has facilitated the meaningful exchange of student-teacher information without minding the distance.

Georgiadou, and Siakas (2006) submitted that technology in education gives learners the opportunities to learn from another position either locally, regionally or internationally and even while on the move due to the availability of mobile devices. It also affords the learner the opportunities to learn at their own pace and without a fixed timetable over prescribed academic sessions unlike traditional mode of education. While teachers or

facilitators also benefits in the same direction with learners from the flexibility of online education with the adoption of technology in education.

In the same manner Popovich and Neel, (2005) submitted that the obvious advantages of online programs to the university include increasing enrollments and profits, extending university reach, increasing student technological skills, mitigating the projected shortfall in instructors, eliminating overcrowding of classrooms, reducing infrastructure cost, allowing students to work at their own pace and learning style, reducing faculty bias, and improving retention and graduation rates. Online education requires certain skills from design, to support system among others before any university can embark on it, but the salient question is that how ready are universities around the world most especially universities in developing countries?

Kentnor, (2015) submitted that that lack of understanding of online pedagogy and online learning styles, lack of administrative support for online education and for marketing the program, number of students enrolled, faculty qualifications, tuition rates, and length of the program can doom the program to failure.

In the same manner, studies have shown that there are still some institutional and financial obstacles to holistic implementation of a distance learning framework, such as shortage of skilled teachers (Baran, Correia & Thompson, 2011) a nd the lack of technical equipment (Rogerson-Revell, 2015) and poor government support (Piña, 2010). From the students perspectives Porter, Hampshire, Milner, Munthali, Robson, De-Lannoy, and Abane, (2016) argues that majority of African students might access Internet and related education content on their mobiles, but it is important that the harmful impact such as addiction to smart phones is also taken into consideration while formulating policy (especially for school going students) to ensure better educational outcomes.

Challenges of e-governance adoption

There are many organization both public and private depend on the technology to advertise their business or to enhance the product information to the customers, the adoption rate of Technology is still below satisfaction. There are many exemptions and tax incentives like (tax exemptions, modern infrastructures, globally completely tariffs and no import duties) (Tam, 2013) Nowadays, Information and communication technology is considered as a necessary tool in human life. Everybody without considering its gender in present society have to acquire knowledge about basic ICT skills to work in an accepted manner and effectively, in order to improve and make progress and triumph in their working lives. Malaysia government takes technological policies in order to provide a constant incentive for innovation in technology and not just staying on adoption or diffusion of technology. According to Rosnah and Hashmi (2005), selection and implementation of such strategies can direct toward less adoption of technology. According to Osman, (2004), however, Malaysian SMEs have well balanced information regarding to possible advantages of manufacturing technologies but regretfully these companies are suffered from lack of information about certain methods and approaches that technology can assist their businesses. Edison & Geissler, (2003) Said that there is a tough process in order to know about the influence of technology on society and its members when it is overestimated. Technology affects everyone in the society as it changes the fabric and leads to expedite the process of economic development and innovation. (Turner, 1984) Provided empirical studies and shows that "technology can potentially have impact on the nature of the work, job satisfaction, and the quality of work life." Thus as Agarwal and Prasad, (1999) proposed that if the technology or system is not utilized effectively and efficiently may not provide an appropriate results. Tam, (2013) Indicated that it is very difficult for an organization to adopt the new technology in replace of old technology very fast. Not all the companies can implement the new technology. It was found that there is always an eagerness in the people to adopt the new technology. In addition, the information system department needs an individual to adopt the new technology in order to make easy for the staff to use the system.

Although the implementation of e-government has begun in Nigerian universities, e-governance activity in Nigeria is still low. There are profuse challenges impeding full implementation of e-Government in Nigerian Universities. Some of such barriers are:

Low ICT literacy rate: While there is much hype about ICT among the younger generation, the overall professionalism about ICTs among the staff and students is low, especially as new things always emerge in this IT world. Personal computers are still regarded as an elitist commodity. In fact, staff and students in some of Nigerian universities still prefer access to documents and circulars manually because of ignorance and under-civilization especially in the northern part of the country.

Low ICT literacy rate is a serious impediment for the adoption of e-Government in Nigerian universities as it hampers both the appreciation and appropriation of e-Government services.

Lack of necessary regulatory framework: The IT regulatory framework in some Nigerian universities has not yet been restructured to fully accommodate e-government.

Within some universities for instance, an e-mail has no official value and digital signature are not accepted. Again, there are no serious laws on electronic governance.

Poor ICT infrastructure: The ICT infrastructure requirement for e-Government takeoff in Nigerian universities are still rudimentary. There are no available computers, internet facilities, computer laboratories, among others. Despite the boom of computer and GSM services, which has increase accessibility and provided less demanding interfaces for people to connect to government provided services, there are still higher number of staff and student lagging behind who are unable to obtain enough due to poverty and illiteracy. Moreover, the cost of internet usage remains too high for a majority of people. Therefore, not only the infrastructures will be standardized, but also the cost of accessing them.

Corruption: Corruption has had negative effect on many projects in Nigerian universities and ICT is no exception. Embezzlement or siphoning of funds allocated for projects is a common feature among university administrators.

Lack of Committed Leadership: The paucity of committed leadership with the capacity to articulate broad e-government vision and also galvanize the necessary resources needed to implement e-government projects and programmes in Nigerian universities. The role of committed leadership in e-government adoption and implementation can never be overemphasized.

Epileptic Power supply: Nigeria is a nation of more than 160 million people, a home to one-quarter of Africa's population but its leaders failed to provide 4000 megawatts of electricity to this populous nation (Cheri, 2013). In Nigeria power outages are recurrent and the power sector operates far below its capacity. With very few Nigerians having access to electricity, and since there are yet no computers or ICT device that currently runs without electricity, it becomes very difficult for e-Government in Nigeria and Nigerian universities.

Financial implications: Installing ICT based e-governance requires huge capital. Fund is required to train staff and to release them from normal duties for training. Fund is again required to be able to pay computer teachers. Fund is also required to execute projects, such as establishing e-learning centers, organizing workshops, seminars, etc.

Review of Empirical Studies

More so, Ihuoma, Enechojo, & Ronke (2012) examined the effect of Information, Communication and Technology on youth's potentials and behaviour in which survey research was conducted with 550 convenience samples in Benue metropolis, North Central Nigeria. The results show that "e-governance or information communication and technology has created a lot of potentials for youth. The empirical results indicate that there is a joint significant influence

of ICT on social development and behavior among youths". However while ICT remained constant and significant, none of the other variables contributed significantly independently.

Wayne (2012) examined the impact of e-governance on Innovations and Business, the result of the study reveals that "e-governance plays a vital role in advancing economic growth and reducing poverty among youth". A survey of firms carried out in 56 developing countries finds that firms and small business that use e-governance grow faster, invest more, and are more productive and profitable than those that do not". The study analyzed that, e-governance or Information Technologies (IT) has had uneven deployment both between nations and within nations. These differences in the use of IT and the Internet among government institution are part of the 'digital divide

Oladunjoye & Audu (2014) examined the Impact of Information and Communication Technology on national development and its Vocational Opportunities in Nigeria *published in* Journal of Good Governance and Sustainable Development in Africa, Vol. 2, No 1, Jan., 2014, Studies reveals that "the ICT era have created various types of jobs from Chief Information Officer in big enterprises or government agencies to the computer shop operators since early 90's. Vendors of hand held phones and their accessories are common sight in every community". There are various types of IT based businesses such as document processing centres, cybercafé, computer training centres, computer services and repairs, hand set services and repairs, internet, programming, cable and satellite TV installations, etc. with very little take off funds. They are common vocations to empower youth (Oladunjoye and Audu 2012; Olasanmi, Ayoola and Kareem 2012).

Ndukwe (2012) also observed that Nigeria's telecommunication and ICT sector has improved tremendously in its attempt to provide unlimited internet services to the citizens. Records from the Ministry of Communication Technology reveal that mobile subscriptions increased from 95million in 2011 to 134.5million as at September, 2014.

Ndukwe (2012) identified both positive and negative impacts of IT on governance: the study further reveals that "more often than ever before, technology has transformed the way younger generation communicate and access information. Two major assumptions underlie the role of IT: the first is that the proliferation of these technologies is causing rapid transformations in all areas of life; the second is that e-governance function to unify and standardize culture". The study also identified several areas where e-governance has provided services. These include: Networking, Programming, Repairing and maintenance, Computer sales, Phone sales; Parts and accessory sales, Document processing; and Phone calls, etc.

United Nations (2009) evaluated the impact of e-governance on ministry of youth development. The study revealed that, e-governance has changed the way young people interact socially, as digital communication has increasingly replaced traditional forms of interaction. IT or e-governance offers youth autonomy from families with access to vast virtual social networks that provide more instantly-gratifying, but less personal interactions.

Jovana (2014) examined E-Learning Implementation in Developing Countries: Perspectives and Obstacles. In-depth interviews were conducted to get a more extensive picture of educational institutions that use e-learning in the teaching process. The results of this research indicate that E-learning nowadays plays an important role in teaching because it is oriented toward the use of information and communication technologies that have become a part of the everyday life and day-to-day business. E-learning contributes to traditional teaching methods and provides many advantages to society and citizens. But the potential implementation of e-learning in developing countries faces a number of obstacles, mainly due to the restricted resources of professors and institutions measured both in time and financial terms.

Martha, Junus, Santoso, Suhartanto, (2021). Assessing Undergraduate Students' e-Learning Competencies: A Case Study of Higher Education Context in Indonesia. This study

extended samples from several public and private universities in Indonesia to get a broader picture of e-learning readiness in various faculties with diverse university online learning cultures. This study used Rasch analysis to determine the validity and reliability of the instrument and differential item functioning (DIF) analysis to identify responses based on students' demographic profiles. The results show that most students were ready to study online, but a few were not ready.

Moreover, the results show significant differences in students' e-learning readiness based on the academic year at university, the field of study, the level of organizational e-learning culture of the university, gender, and region.

Roland (2007) examined the potential negative impacts of IT or e-governance on development. The study revealed that, ICT offers opportunities for youth empowerment and education, particularly in societies where resources are limited. Researches has shown that the youths in various locations can use IT or e-governance to maintain cultures, gain knowledge, develop skills and generate income.

Adwoa And Tiwaah (2008) examined the impact of e-governance on service delivery in Ghana University. The study result of the study result shows that ICT is working towards total transformation of university education in Ghana.

De-Wet, Koekemoer & Nel (2016) examined impact of Information, Communication and Technology (ICT) on employees' work and personal lives. The empirical results showed that, e-governance play a significant role on employees' work and family domains. It was evident from the data that the role of e-governance was predominantly experienced as positive, although some negative influences were also experienced. Participants also indicated a degree of dependency on e-governance to complete everyday work and family tasks. The role of e-governance on employees' relationships was also experienced as positive and negative. The research highlighted that employees should make a conscious decision in managing their e-governance to decrease the negative influence thereof on their domains.

McKenzie (2007) examined the impact of Information and Communication Technologies (ICTs) on youth unemployment in the Sub-Saharan African (SSA) during the period 1995-2010, the study employs a dynamic panel data method for a sample of 30 SSA countries, measuring the e-governance facilities by mobile cellular subscriptions and the number of internet users. The empirical results show that "mobile subscriptions have a negative and significant effect on youth unemployment in SSA countries, implying that communications boom in the last decades has promoted the youth employment". The impact of internet is found to be negative but it is not significant, confirming the weakness of internet infrastructure in SSA, to improve the employability of young workers in SSA.

Daniella (2013) analyzed the impact of government IT initiative and Mobile on Youth Engagement among Cities in the Developing World. The study revealed that, e-governance Using IT such as; computers, internet , social media and Mobile technologies was effect tool of fostering Self-Organization in Urban and Neighbourhood Governance. The results also show that, almost half of the total involves programs or projects where youth are developing e-governance or IT initiatives for all citizens and NGOs are designing IT programs for youth. These observations reflect the creative and dynamic nature of IT in the hands of youth as they explore ways to connect with others in relationship to community and local government. They also lend credence to the notion that youth are in many ways the leaders of IT governance initiatives for all citizens innovating technology, generating content and developing applications.

United Nations (2018) examined e-governance and service delivery in higher institution in developing countries. The study revealed that, the basic e-governance delivery services in higher institution are the use of online services through mobile apps. This study conducted by

United Nations (2018) only examines e-governance and service delivery in higher institution in developing countries did not examine the application of e-governance in Nigeria.

Wikus, (2017) assessed "e-Government & Public Service Delivery: Enabling ICT to put "People First" A Case Study from South Africa". The study revealed that, e-Government has influences Public Service Delivery through the use of ICT facilities with People focused based enabler in South Africa.

Abdullahi, (2016) examined e-governance and public service delivery in Nigeria: A digital solution:" The study revealed that, e-governance is the real digital solution to service delivery in the Public Service.

Yakubu, (2016) examined Effect of e-governance on public service delivery in Nigeria Immigration Service. The study revealed that, e-governance has enhanced efficiency of service delivery in the Nigeria Immigration Service

Hycenth, (2016) examined the "Effect of ICT on the conduct of 2015 General election in Nigeria". The study revealed that, ICT has been general effective in the conduct of 2015 General election in Nigeria

Ibrahim, (2018) examined the "e-governance and electoral reform. The study revealed that, e-governance has significantly improve the conduct of general election in Nigeria

Abasilim (2017) examined attaining a better public service delivery through e-governance adoption in Nigeria". The study revealed that, e-governance to some extent has transform the Civil Service for better service delivery

Gap in Literature

Based upon the collected literatures from the studies conducted on e-governance in Nigeria and other foreign countries, It was observed that, very few limited researches have been carried out on e-governance and service delivery in educational institution in Nigeria. From the empirical studies (Wikus, 2017; Abdullahi, 2016; Yakubu, 2016; Hycenth; 2018; Abasilim, 2017; Ihuoma, Enechojo, & Ronke; 2012) there are specific research gap to be filled with regard to e-governance in Nigeria Universities system. No previous research shows the comprehensive analysis of e-governance service such as e-learning, e-registration, e-payment as determinant of effective e-governance service delivery in University system. e-governance in this study is seen as a multi-channel of e-services delivery that serve the demands of management, staff and students in the performance of administrative function in accordance with the organizational mandate.

Institutions achieve increase in productivity combined with a higher service level by automating and simplifying processes. Same way, producing and offering public services electronically facilitate ease and convenience for achieving organizational objectives. ICT in universities usually revolutionizes the relationship between management and staff and between staff and students as more and more services are offered online. The development of e-services should not only focus on making the service available on the Internet, but also examine the different delivery platforms of the service such as email, mail merge, teleconference, video communication, hotlines, etc. A multi-channel access mix with a range of different contact points: student registration site, online purchase of form, student help desk, telephone hotline, shops, online result, online staff record and their profile, online student record and their addresses will enable the development of an improved and more coherent organizational service. Also the work of scholars reviewed above does not provide us with the relationship between benefit of e-governance and its challenges.

This study provide the benefit of e-governance as a greater and convenience way of offering better services to all citizens (citizens' satisfaction) and ultimately lead to a knowledge-based society. The study also provide that, e-governance in public organization enable

government bodies and agencies to be automated and interconnected through the use of ICT gadget to interact with each other and perform their day-to-day administrative function using electronic means. The study also establish that, e-governance is use to maintain electronic communication for interact between government, business and citizen.

However, from empirical studies reviewed above none of the study discussed or carryout study on the effect of ICT on service delivery with reference to National Open University of Nigeria. This study will therefore cover the research gap.

Theoretical framework

Diffusion of Innovation Theory

For the purpose of this study, Diffusion of Innovation Theory was adopted**.** Diffusion of Innovation Theory was adopted because; it is a social process that occurs among people in response to learning about an innovation such as a new evidence-based approach for extending or improving educational learning outcome. In its classical formulation, diffusion involves an innovation that is communicated through certain channels over time among the members of a social system.

Diffusion of Innovation Theory was propounded by E. M Rogers in 1962. Diffusion is the process of communicating innovation among organizational members through specific channels over time and generating alterations in the structure and function of a social system over time (Rogers, 1995). Rogers (1995), diffusion occurs within a social system whose structure affects the diffusion process in several ways. These social systems constitute a boundary, in which an innovation diffuses (Rogers, 1995). Rogers (1995) identified significant difficulties that can obstruct the adoption of a new idea, even when the idea has obvious advantages.

Diffusion of innovations is a theory profound by Everett Rogers that seeks to explain how, why, and at what rate new ideas and technology spread. Rogers argues that diffusion is the process by which an innovation is communicated over time among the participants in a social system. For Rogers (2003), adoption is a decision of "full use of an innovation as the best course of action available" and rejection is a decision "not to adopt an innovation". Rogers defines diffusion as "the process in which an innovation is communicated thorough certain channels over time among the members of a social system". As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations. Scope and Application Diffusion research has focused on five areas: (1) the characteristics of an innovation which may influence its adoption; (2) the decision-making process that occurs when individuals consider adopting a new idea, product or practice; (3) the characteristics of individuals that make them likely to adopt an innovation; (4) the consequences for individuals and society of adopting an innovation; and (5) communication channels used in the adoption process.

Assumption of the Theory

Four main elements in diffusion of innovation Rogers propose that four main elements influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. This process relies heavily on human capital.

The innovation must be widely adopted in order to ensure self-sustainance. Within the rate of adoption, there is a point at which an innovation reaches critical mass. The information flows through networks. The nature of networks and the roles opinion leaders play in them determine the likelihood that the innovation will be adopted.

Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information medium, such as the Internet. Opinion leaders exert

influence on audience behaviour via their personal contact, but additional intermediaries called change agents and gatekeepers are also included in the process of diffusion.

Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. Diffusion therefore is the "process by which an innovation is communicated through certain channels over a period of time among the members of a social system". An innovation is "an idea, practice, or object that is perceived to be new by an individual or other unit of adoption". "Communication is a process in which participants create and share information with one another to reach a mutual understanding" (Rogers, 1995)

Rogers stated perceptions of these predicted the rate of adoption of innovations. Rogers defined the rate of adoption as the relative promptness with which participants of a social system adopt an innovation. The structure of a social system can also facilitate or impede the diffusion of innovation in the system; Rogers noted that understanding the diffusion of innovations helps to explore and explain why some new technologies spread faster and wider than others do. Rogers identified established behaviour patterns in members of a social system, termed system norms, as potential barriers to change.

Relevance of theory to the study

Rogers' Innovation Diffusion Theory is one of the most popular theories for studying adoption of information technologies (IT) and understanding how IT innovations spread within institutions. According to this theory, innovation is an idea, process, or a technology that is perceived as new or unfamiliar to individuals within a particular area or social system. Diffusion is the process by which the information about the innovation flows from one person to another over time within the social system. There are four main determinants of success of an IT innovation in hospitals are: communication channels, the attributes of the innovation, the characteristics of the adopters, and the social system. The communication channels refer to the medium through which people obtain the information about the service and perceive its usefulness. It involves both e-facilities and interpersonal communication. The attributes of an innovation to hospital include five user-perceived qualities: relative advantage, compatibility, complexity, trialability and observability. Relative advantage is the degree to which the user perceives benefits or improvements upon the existing system by adopting in the hospital. These studies demonstrated that Rogers' innovation theory is useful for conceptualization of technology adoption in the context of e-medicine. Therefore, this theory was used in the study as the theoretical framework to examine and explain the effect of electronic medical record, on service delivery. This theory is also relevant to the study because it use to accelerate the adoption of important innovation that typical aimed to change the pattern of public organization. The theory also explains how, why and at what rate new idea and technology be spread with the organization.

The theory equally helps also describe the dynamics of technology acceptance by describing the factors that may affect the intentions of potential university stakeholders. This theory therefore promotes information exchange between staff-Students and universities - communities through the uses information communication devices.

Research Methodology

Research Design

Survey and documentary research design method was utilized by the researcher. The survey design involves the use of questionnaires, interview and observation to generate data in order to answer the research question(s) and/or analyze specific hypothesis. This design was adopted because it often focuses on the characteristics of a population. Documentary design are data sets, already collected either research or non-research purposes. This design was employed

because it has prospects of authenticity as it is free from respondents' ignorance, unwillingness to cooperate, bias and dishonesty.

Population, Sample and Sampling Technique

The target population of this study comprises of Students and staff of the National Open University of Nigeria Abuja Study Centre. The choice of Students as part of the Population is to know how e-governance impact on their study, this because they are the end users of e-governance in National Open University of Nigeria. The choice of staff on the other hand is to know the extent of e-governance application to service delivery in National Open University of Nigeria.

From the above population, stratified and simple random sampling technique was used to select a representative population for the study. Purposive random sampling technique was used to select representative sample from two stratums: staff and Students.

The total population of the study is 127, 213 which comprises 127, 186 Student and 27 staff. This number was obtained from the office of university Deputy Registrar. Robert & Krejcie sample size determination was used to determine the sample size for student's category. The Formula is stated as:

$$n = \frac{X2NP\ (1-P)}{d2\ (N-1) + X2P\ (1-P)}$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

$$s = \frac{3.84(127, 213)\ (0.5)\ (1-0.5)}{0.0025\ (127, 213-1) + 3.84(0.5)\ (1-0.5)}$$

$$= \frac{3.84(127, 213)\ (0.5)\ (0.5)}{0.0025\ (127, 213) + 3.84(0.5)\ (0.5)}$$

$$\frac{122124.48}{318.03+0.96}$$

$$\frac{122124.48}{318.99}$$ Sample size = 383

Secondary data sources enable the researcher to retrieve materials from appropriate authorities. The data were collected from the University electronic database and interviews information from management of staff of the ICT Unit of the University. Other materials were obtained from students Admission procedure data bases, statistical data on students registered using electronic system, ICT annual performance's report, University official's bulletins, and publication on University official's website.

Method of Data Collection

Copies of questionnaires were administered to Students, staff of National Open University of Nigeria Abuja Study Centre. The questions were structured using Two Likert scale (Yes and No). The Two Likert scale were used because, the researcher used chi-square statistical technique to test the hypothesis. One of the assumptions for adopting chi-square that,

options should be categorical in two forms (Yes or No). Questionnaires were structure in close ended format to answer questions with regard to effect of e-governance on service delivery.

The Secondary method of data collection was used to obtained relevant data from the University electronic database; students Admission procedure data bases, statistical data on students registered using electronic system, ICT annual performance's report, University official's bulletins, and publication on University official's website, university central data bases, statistical data on total number of registered students using electronic system, information on officials university bulletins, publication on university officials website, Newspaper, Journals paper on e-governance, public service delivery and internets site. .

Technique of Data Analysis

For the purpose of this study, two statistical techniques of data analysis were utilized; they are descriptive and statistical techniques: The descriptive statistics was used to present and interpret quantitative data. Descriptive statistics are; frequency table, percentage and figure. The Statistical Package for the Social Sciences (SPSS) was used to present and analyze the data.

Chi-square score was used to analyze the research hypothesis. The hypothesis was tested at 5% level of significance. Data from the questionnaire and interview were collected and analyzed with techniques that enable the hypothesis to be tested and a descriptive analysis was made. In testing the hypothesis, the chi-square (X2) statistical formula was used. The chi-square computation formula is presented as:

$X^2 = (fo-fe)^2/Fe$

Where

X2 = Chi – square

fo = Observed frequencies

fe = Expected frequencies

The test was made at 5% error or level of significance. If the computed X2, is less than the critical X2 the null hypothesis (Ho) is accepted. If otherwise, Ho is rejected while the alternative Hypothesis (Hi) is accepted.

Result and Discussion

Test of Hypothesis I

There is no significance between effectiveness of e-learning platform (Zoom and Virtual Learning Environment) on access to higher education in Nigeria

Table 1: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	201.505[a]	1	.000		
Continuity Correction[b]	198.039	1	.000		
Likelihood Ratio	250.909	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	200.815	1	.000		
N of Valid Cases	292				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 47.11.
b. Computed only for a 2x2 table

The test was made at 5% error or level of significance. If the computed X2, is less than the critical X2 the null hypothesis (Ho) is accepted. If otherwise, Ho is rejected while the alternative Hypothesis (Hi) is accepted

Chi-square calculated = 201.505

Degree of freedom (df) = (R-1) (C-1)

= (2-1) (2-1)

= 2 x 1

Df = 2

Table value = 3.84

X^2 calculated is greater than table value

X^2 calculated = 201.50

X^2 table value = 3.84

Since the calculated is greater than table value. On the bases on our decision rule (alternative hypothesis) is accepted and null hypothesis (H_0) is rejected.

Therefore, we reject the null hypothesis which stated that, there is no significance relationship between effectiveness of e-learning platform (Zoom and Virtual Learning Environment) on access to university education in Nigeria. We therefore accept the alternative hypothesis which stated that, there is significance relationship between effectiveness of e-learning platform (Zoom and Virtual Learning Environment) on access to university education in Nigeria. We conclude that, e-learning platform (Zoom and Virtual Learning Environment) have been effective on access to university education in Nigeria. This finding corresponds with the data obtain from the National Open University of Nigeria.

Table 2: Public Servants' beneficiaries for NOUN Online & Distance Learning from 2016 – 2023

S/N	Year	Yearly Enrolment Figure for the NOUN Online & Distance Learning	Number of Public Servants beneficiaries NOUN Online & Distance Learning	Percentage % Public Servants beneficiaries from the NOUN Online & Distance Learning
1	2016	124,600	83,832	67.3
2	2017	235,128	192,732	82.0
3	2018	343, 551	247,842	72.1
4	2019	439, 962	326,145	74.1
5	2020	473, 132	398,321	84.2
6	2021	486, 212	327,254	67.3
7	2022	501, 409	384,118	76.6
8	2023	528, 623	393,552	74.4

Source: NOUN Admission Office, 2023

The yearly enrollment figures for NOUN Online & Distance Learning from 2016 to 2023, along with the number of public servants beneficiaries and the percentage of public servants beneficiaries from the program.

In 2016, there was a total enrollment figure of 124,600 for NOUN Online & Distance Learning. Out of this, 83,832 were public servants beneficiaries, accounting for 67.3% of the total enrollment.

Moving on to 2017, the enrollment figure increased to 235,128, with 192,732 of those being public servants beneficiaries. This represents an increase in the percentage of public servants beneficiaries to 82.0%.

In 2018, we see a further increase in the total enrollment figure to 343,551. However, the number of public servants beneficiaries decreased to 247,842, resulting in a lower percentage of 72.1%.

Similarly, in 2019, while the enrollment figure continued to grow to 439,962, the number of public servants beneficiaries increased to 326,145. This brings the percentage of public servants beneficiaries to 74.1%.

In 2020, the total enrollment figure reached 473,132, and the number of public servants beneficiaries rose to 398,321. This indicates a higher percentage of public servants beneficiaries at 84.2%.

However, in 2021, there was a slight decrease in the total enrollment figure to 486,212, and the number of public servants beneficiaries decreased significantly to 327,254. This resulted in a lower percentage of public servants beneficiaries at 67.3%, the lowest so far in the given timeframe.

In 2022, the total enrollment figure slightly increased to 501,409, and the number of public servants beneficiaries rose to 384,118, reflecting a higher percentage of 76.6%.

Finally, in 2023, the total enrollment figure reached 528,623, and the number of public servants beneficiaries increased to 393,552. This leads to a percentage of public servants beneficiaries of 74.4%.

From this data, the study concludes that public servants in Nigeria have taken advantage of the NOUN Online & Distance Learning programme to acquired further educational skills and higher degrees certificate when compare with other conventional university in Nigeria.

Test of Hypothesis II

There is no significant relationship between e-learning platform (Zoom and Virtual Learning Environment) and improved teaching and learning experience for online learners in Nigeria

Table 3: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	165.246[a]	1	.000		
Continuity Correction[b]	132.003	1	.000		
Likelihood Ratio	134.913	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	185.445	1	.000		
N of Valid Cases	292				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 47.11.
b. Computed only for a 2x2 table

The test was made at 5% error or level of significance. If the computed X2, is less than the critical X2 the null hypothesis (Ho) is accepted. If otherwise, Ho is rejected while the alternative Hypothesis (Hi) is accepted

Chi-square calculated = 165.246

Degree of freedom (df) = (R-1) (C-1)

= (2-1) (2-1)

= 2 x 1

Df = 2

Table value = 3.84

X^2 calculated is greater than table value

X^2 calculated = 165.246

X^2 table value = 3.84

Since the calculated is greater than table value. On the bases on our decision rule (alternative hypothesis) is accepted and null hypothesis (H_0) is rejected.

Therefore, we reject the null hypothesis which stated that, there is no significance relationship between e-learning platform (Zoom and Virtual Learning Environment) and improved teaching and learning experience for online learners in Nigeria. We therefore accept the alternative hypothesis which stated that, there is significance relationship between e-learning platform (Zoom and Virtual Learning Environment) and improved teaching and learning experience for online learners in Nigeria. We conclude that, e-learning platform (Zoom and Virtual Learning Environment) have improved teaching and learning experience for online learners in Nigeria.

Discussion of Findings

Finding from the study revealed that, NOUN Online and Distance Learning program has enhanced educational qualifications. They appear to have taken advantage of this platform more compared to traditional universities in Nigeria. This finding highlights the importance of accessible and flexible educational options, particularly for middle level works who seek to advance their skills and obtain higher degrees. The study revealed that public servants in Nigeria place more emphases professional growth in their career. Through the use of e-learning programme from the National Open University of Nigeria many public servants have enrolled and many have obtained their degrees from these online programmes. This finding is in line with the study conducted by Jovana (2014) whose study also revealed that, E-learning nowadays plays an important role in teaching because it is oriented toward the use of information and communication technologies that have become a part of the everyday life and day-to-day business. E-learning contributes to traditional teaching methods and provides many advantages to society and citizens. But the potential implementation of e-learning in developing countries faces a number of obstacles, mainly due to the restricted resources of professors and institutions measured both in time and financial terms.

Conclusion and Recommendations

The study concludes that Public servants in Nigeria have utilized the e-learning and Online Distance Learning (ODL) programmes to pursue their various degree programmes. This shows that E-learning plays an important role in teaching because it is oriented toward the use of information and communication technologies that have become a part of the everyday life and day-to-day business. E-learning contributes to traditional teaching methods and provides many advantages to society and citizens. The study recommends that the e-learning tools and internet facilities should be upgrade to foster any network challenges in the online facilitation and lecture delivery system. This has helped the institution to achieve its mandate of easy and flexible access university education in Nigeria. The study concludes that, use of e-learning platform has improved the teaching and learning in National Open University of Nigeria.

The study recommends that, the e-learning tools and internet facilities should be upgrade to foster any network challenges in the online facilitation and lecture delivery system. Lecturers and students should be effectively trained on how to use technology to help the learning process. The ability to interact meaningfully in the online discourse needs to be improved. The institutions should train students to communicate effectively with other learners and lecturers in order to be familiar with the online learning environment.

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