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Effect of E-Governance Usage on Service Delivery in Tertiary Institutions in Oyo Township of Southwest Nigeria

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ABSTRACT

This study examined the effect of e-governance usage on service delivery in tertiary institutions in Oyo Township of Southwest Nigeria. A descriptive survey design was employed and population of the study consists of staffs and students in four tertiary institutions in Oyo Township. A proportional random sampling technique was used to select two thousand (2000) respondents from the population of the study. One research hypothesis was formulated for the study. An adapted self-designed questionnaire was used to collect data from the respondents. Out of the 2000 questionnaires administered only 1950 were returned. Data collected were analysed using statistical package for social sciences (SPSS) to obtained frequency count and regression analysis test. The results of the study showed that the use of e-governance has significant positive effect on the effectiveness and effective of services delivery in tertiary institutions in Oyo Township. Also the use of e-governance has positive significant effect on the quality services delivery and also has positive significant effect on cost reduction of services delivery in tertiary institutions in Oyo Township. Finally, the results revealed that the use of e-governance has positive significant effect on good governance and customers' satisfaction of services delivery in tertiary institutions in Oyo Township. The study recommends that government must provide adequate infrastructures for the implementation of e-governance for all the tertiary institutions in the country. E-governance platforms implemented by the government must be robust, accessible 24/7 and easily affordable to both the staff and students.

Keywords: *E-Governance, Questionnaire, Service Delivery, SPSS, Tertiary Institutions*

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1. INTRODUCTION

The application of information and communication technology (ICT) in educational sectors poses new challenges and opportunities to nation educational system. The implementation of Information and Communication Technology (ICT) in developing countries such as Nigeria has exerted a great impact on the society and enhanced socio-economic and political interactions that pave way for new forms of interactivity. This interactivity serves as both social and technical channel that allows information dissemination amongst administrator and sharing between management and administrators (Osakede et. al., 2017).

Rapid expansion in the field of education has made governance in academic sector a very complex task and 21st century has witnessed tremendous advancements in technology which has led to far-reaching developments in the administrative system (Shrivastava, Raizada and Saxena, 2014). According to Barta et. al. (1995), Computers can be used extensively for effective educational administration as follows:

(i) General Administration
(ii) Pay Roll and Financial Accounting
(iii) Administration of Student Data
(iv) Inventory Management
(v) Personnel Records Maintenance
(vi) Library System

Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management and administration in education sector. It is specified that technology can be used right from student administration to various resource administration in an education institution (Christiana Maki, 2008). The various ways of introducing technology in education institution administration are the following (Caroline Salerno, 2009):

(i) Sending e-mail notices and agendas to staff, rather than printing and distributing them
(ii) Submission of lesson plans through e-mail
(iii) Foster technology growth by asking parents to write e-mail addresses on medical forms.
(iv) Insist that all teachers create a class Web page
(v) Attend technology conferences to see what other schools are doing, what other teachers are doing to integrate technology, and what principals are doing to encourage the use of technology in their schools and classrooms.
(vi) Admissions through web-enabled services.
(vii) All day-to-day activities of the institution (General Administration)
(viii) Staff administration

E-Governance solution in the field of education sector incorporates whole data and processes of an educational institution into a unified system, making the process uncomplicated, well-organized and error proof. The solution is designed to make the system user-friendly, time and cost saving. Many of them are flexible enough to adapt to the changing educational environment efficiently and quickly. Educational institutions may have various requirements that include computerization and management of processes such as registration, admission, student information, classes, time table, transport, attendance, library, salary and expenses, examinations, performance, grades, hostels, security and reports (Tiwari, Khamari and Singh, 2013). In this paper, an attempt has been made to examine effect of e-governance usage on service delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

1.1 Statement of the Problem

Most of the tertiary institutions in Nigeria are making an attempt to transit from closed, top-down, bureaucratic, and paper-based transactional models to online, digital offerings that encourage a new kind of interaction between institution's management and staffs/students/parents. Electronic public service delivery appears to be permeating most of the public tertiary institutions because staffs/students/parents demand for greater speed and transparency in service delivery. Obviously**,** tertiary institutions face great levels of uncertainty in deploying and providing E-government services because of the complexity of the technology, deeply entrenched institution routines, and great diversity in the acceptance of technology by users.

However, few research or studies have been made on the application of E-governance to educational processes, systems and structures like; the way services are being delivered (online seeking for job/admission, online registration and submission of forms for services, online financial transactions with all security issues granted, and inclusion of E-consultation and E-decision making) which play an underpinning role for service qualities and promote good governance. Again there are few attempt of research studies in developing countries like Nigeria on

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effect of E-governance on service delivery (effectiveness, efficiencies, and service quality, reductions of operational costs, combating corruptions) in tertiary institutions, which this research study has been fascinated to study. Numerous barriers have been identified being hindered the successful implementation of e-government platform by different researchers but most of the study did not focus on the uptake of e-government in tertiary institutions and at the same time some problems were unaddressed by the previous studies.

Besides, Nigeria as a country and tertiary institutions' in particular have missed to be efficient and effective in its operations, being transparent and accountable, fail to reach for their staffs/students easily and lost vehicles for appropriate inclusive/participatory decision making. Also unseen interoperability of different tertiary institution in single window, missing in saving transaction/operational costs, processing speedily and accessibility, reducing staffs'/students' time spent travelling to institutions premises, making interaction with less bureaucratic institution procedures, convenience and availability 24/7 of services were some of the problems facing service delivery in tertiary institutions.

Hence, it is on this backdrop that this study attempted to fill the gap in the current body of literature by investigating the effect of e-governance usage on service delivery in tertiary institutions in Oyo Township of Southwest Nigeria. This will contribute greatly in literature in the academic field since not much research has been done in this field.

1.2   Objectives of the Study

This study was mainly aimed at exploring the effect of E-governance usage on service delivery in tertiary institutions in Oyo Township of Southwest Nigeria. Specifically, this study aims to:

(i)   To examine whether the use of E-governance affect both the effectiveness and efficiency of services delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

(ii)   To examine whether the use of E-governance affect the quality of services delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

(iii)   To examine whether the use of E-governance reduces both the operational and transactional costs of services delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

(iv)   To examine whether the use of E-governance ensure and promote good governance of services delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

(v)   To examine whether the use of E-governance enhance customers' satisfactions level in tertiary institutions in Oyo Township of Southwest Nigeria.

1.3   Research Hypotheses

(i)   There is no significant positive relationship between the use of e-governance and effectiveness & efficiency of services delivery.

(ii)   There is no significant positive relationship between the use of e-governance and quality of services delivery.

(iii)   There is no significant positive relationship between the use of e-governance and cost reduction in services delivery.

(iv)   There is no significant positive relationship between the use of e-governance and good governance in services delivery.

(v)   There is no significant positive relationship between the use of e-governance and customers' satisfaction in services delivery)

2. LITERATURE REVIEW

2.1   Conceptualization of E-Government and E-governance

Ojo (2014) sees e-governance as "the application of information communication technology (ICT) by the government to enhance accountability, create awareness and ensure transparency in the management of governmental business." He also states that e-governance can be seen as a political strategy of government through which their activities can be showcased to the public. Ayo (2014) defined e-governance as "the governing of a state/country using ICT." Meaning that, e-governance is the application of ICT in executing government businesses. From the definitions so far, it can be deduced that e-governance is simply the use of ICTs in the operations of government businesses, put in another way, it is the shift from the traditional method of carrying out government activities which is mainly hierarchical, linear, and one-way to the use of internet which enables the

public seek information at their own convenience and not really having to visit the office in person or when government office is open (Abasilim and Edet, 2015).

E-governance can also be understood by contrasting it with e-government. Although often used interchangeably by various authors and scholars (Kabir and Baniamin, 2011) but these concepts are not the same. Supporting this view, Ayo (2014) sees e-governance as "the application of ICT to transform the efficiency, effectiveness, transparency and accountability of exchange of information and transaction; with the objective of providing a SMARRT Government. The acronym SMARRT refers to Simple, Moral, Accountable, Responsive, Responsible and Transparent government." While Grant and Chau (2006) defines e-government as broad-based initiatives that leverage on the capabilities of ICT to deliver high quality, seamless and integrated public services; enable effective constituent relationship management; and support the economic and social development goals of citizens, business, and civil society at local, state, national and international levels.

Common Market for Eastern and Southern Africa (COMESA) also stated that, e-governance is a wider concept that defines and accesses the impacts of technologies on the administration and practices of governments. It also looks at the relationships that exist between public servants and the wider society. But, e-government deals with the development of online government services to the citizen and businesses such as e-tax, e-transportation, e-procurement, e-participation amongst others and this is termed to be narrow in discipline. Another distinction is that E-Governance is the application of electronic means in the interaction between government and citizens, government and businesses, as well as internal government operations to simplify and improve democratic government and business aspects of governance (Backus, 2003). In contrast, e-government is simply about the transformation, delivering services effectively and seamlessly, developing new forms of communication between government and the governed and enhancing quality of lives through economic development and enhancing civil society (Worrall, 2011). In the words of Ayo (2014), e-government is about "increasing transparency, sharpening accountability, increased scrutiny, taking out hierarchies, changing working practices, changing cultures, changing behaviours and about radically changing power structure by making power more diffused and less concentrated among a small political and administrative elite."

E-government has been seen to have four primary delivery tracks namely: Government-to-Citizen or Government-to-Customer (G2C); Government-to-Business (G2B); Government-to-Government (G2G); and Government-to Employee (G2E) (Adeyemo, 2011). This delivery tracks are also known as the models of e-governance, which refer to the interaction that exist between and among government, citizens, business, employees and Non-Governmental Organisations (NGOs) respectively (Ayo, 2009; Rabaiah and Vandijct, 2011). Flowing from the distinctions made, both concepts share some characteristics. They both depend on the application of information technology to achieve their aims and objectives with a view to ensuring effective, efficient, transparent, accountable service delivery among others from government establishment or the public service.

Despite the fact that many people use the term e-government, there is no clear consensus about what electronic government means. Many studies and/or organizations have defined e-government in different ways. E-government include myriad tools and applications from fax machines and mainframe computing to social media and open government strategies for online services and it does not refer to technological artefacts only, but also to the social and organizational aspects and elements around those artefacts. Though, definitions of E-government by various sources are varying widely but there is a common theme. E-government involves using information technology, and especially the Internet, to improve the delivery of government services to citizens, businesses, NGOs and other government agencies (Worku, 2016). E-government enables citizens to interact and receive services from the federal, state or local governments twenty four hours a day, seven days a week.

Governance implies the processes and institutions, both formal and informal, that guide and restrain the collective activities of a group. Governance need not necessarily be conducted exclusively by governments. Private firms, associations of firms, NGOs, and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority. Clearly, this definition suggests that e-governance need not be limited to the public sector. It implies managing and administering policies and procedures in the private sector as well. E-governance is the public sector's use of ICTs with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective.

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E-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services. E-governance can bring forth new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable and empower the citizen. Some authors contend that E-government constitutes only a subset (though a major one) of E-governance (Worku, 2016).

The above definitions encompass three critical transformation areas of E-governance (Worku, 2016):

(i) **Internal** which refers to the use of E-governance platforms to improve the efficiency and effectiveness of internal functions and processes of government by interrelating different departments and agencies. Thus, information can flow much faster and more easily among different governmental departments, reducing processing time, paperwork bottlenecks, and eliminating long, bureaucratic and inefficient approval procedures.

(ii) **External -** it opens up new possibilities for governments to be more transparent to citizens and businesses, giving access to a greater range of information collected and generated by government. ICT also creates opportunities for partnership and collaboration among different governmental institutions, private sectors and other third parties in system of governance.

(iii) **Relational –** ICT and E-governance platform adoption may enable fundamental changes in the relationships between the citizens and the state, and between nation states, with implications for the democratic process and structures of government. Vertical and horizontal integration of services can be realized, enabling the integration of information and services from various government agencies to help citizens and other stakeholders get seamless services.

2.2 ICT usage in Higher Education Administration

The usage of ICT in higher education administration involves "harnessing technology for better planning, setting standards, effecting change and monitoring results of the core functions of universities (Krishnaveni and Meenakumari, 2010). Mugenda (2006) said ICT fosters the dissemination of information and knowledge by separating content from its physical location. This flow of information is largely impervious to geographic boundaries allowing remote communities to become integrated into global networks and making information, knowledge and culture accessible, in theory, to anyone. It is also mentioned that ICT enhances day-to-day management of institutions and the various functional areas in which it could be used are specified below:

(i) Timetabling
(ii) Student admission and Tracking
(iii) Financial Management
(iv) Medical services
(v) Procurement and Store management
(vi) Data distribution and management

ICT is used in maintenance of student and staff records and for communication and document management (OECD, 2001). Kumar and Kumar (2005) have mentioned about the positive perception towards the use of ICT in education. It is mentioned in the study that students of different universities reported the usage of ICT for communication and for on-line discussion forums. ICT facilitated contact and information exchange and also promoted access to higher education. ICTs included systems for student admission and records, examination results and transcripts, finance database, human resources database, and management information.

Various literature reviews reveal that Information administration is one part of overall administration of education institutions which mainly covers general and day-to-day operational activities. Hence, it could be concluded that Information administration cycle includes four major components namely, Student administration, Staff administration, and General administration (Krishnaveni and Meenakumari, 2010). A theoretical model for Information administration has been formulated, and is depicted in Figure 1.

According to Christiana Maki (2008), the administrative systems in higher education include personnel administration, student administration, resources administration, financial administration and general administration. Based on the literature review the three main functional areas of information administration that

are of great significance for day-to-day management of higher education institutions was identified as follows:

(i)   Student administration
(ii)   Staff administration
(iii) General administration

Student administration is an important and integral part of information administration. This involves various activities commencing from the admission process to learning activities till processing of results and performance analysis. The integration of ICT into this process enhances the overall admission activities of higher education institutions by making it more accessible to many (Obeng, 2004). Based on the literature review, the important items identified under this category relates to the automation of admission process through e-media. This includes admission enquiry by students, applying for admissions through electronic media, registration / enrolment using computers, course allotment, and availability of information like timetable / class schedule in electronic form and attendance monitoring / maintenance through e-media. Further it includes the various communications relating to transport, hostel accommodation and other communication to guardians/parents. The integration also helps in expansion of the geographical boundaries for student intake, thus facilitating cross-border higher education (Krishnaveni and Meenakumari, 2010).

Staff administration includes recruitment and work allotment of faculty and staff in the institution, their attendance and leave management, and performance appraisal. This also includes relevant communication to and from the institutions and among peers. Staff administration done through Information and communication technology (ICT) helps in processing of voluminous records in a quick, meticulous, and impeccable manner thereby making data retrieval easier (Obeng, 2004).

In general, a good communication system should also be in place for the overall effectiveness of administration. ICT helps in providing a good communication system in higher education system (Magni, 2009). ICT helps in providing timely information to all concerned. Communication could be for internal and external information acquisition and dissemination. It includes communication between the important stakeholders of the system such as sending e-circulars to students, faculty and staff. The dissemination of information about the institution using e-kiosks is also a very important item to be considered.

A very important part of Information administration is general administration of higher education institutions which includes the various day-to-day activities of the entire system. Through literature reviews, it is evident that the integration of ICT into general administration has brought increased efficiency and optimal resource utilization (Hasan et al., 2007). The various items classified under this category include usage of electronic media for scheduling of halls and other resources, fee payment, and handling internal and external examination activities in coordination with the faculty members, all day to-day activities, intra and inter communication etc,.

2.3   Necessity of e- Governance in Higher Education

To improve the quality of higher education in this country and to make these higher institutions word class that will be able to compete with their counterpart in developed countries, then there is need to introduce e-governance in this sphere at the fastest possible pace. Implementation of e-governance in public tertiary institutions will enable their effective & real time monitoring by Government/the regulatory bodied & other stakeholders their own managements, parents of the students & the society, thereby forcing them to maintain quality & become more responsible. E-governance process brings transparency in the system, so e-governance initiatives in the field of higher education will help reduce the corruption up to a large extent (Shrivastava, Raizada and Saxena, 2014). The introduction of e-governance in higher education is one such concept that can empower the governing bodies to administer the progress of the education plan in the whole country and serves various stakeholders in a much better ways.

RanjeetaKapoor and Nisthakelkar (2013) identified the benefits of e-governance in higher education as follows:

(i)   **Provide E-Services**: E-governance in education provides new ways of communicating to the students, imparting education and organizing and delivering information and services. E-governance in education sectors improve information, service delivery, encourage student participation in the decision making process, making administration transparent and effective and give universities a new channel of educational unemployment.

(ii)   **Innovative Teaching Tools**: E-governance in education offer vast

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opportunities for progress in all walks of life. With the introduction of e-learning technology, the structure of higher educational institutions has changed. The changing role of lecturers, the changeable learning environment and the design of e-Learning facilities all contribute to a potentially more flexible organizational structure of higher education in rural area. The future delivery of education will be based through eLearning technology providing lecturers with superior teaching tools. The online methods enable more effective education and offer significant advantages over traditional teaching methods. This has been possible by technological implementation based environments such as bulletin boards, virtual lectures and e Libraries and video conferencing. In e learning environment can support communication with classmates and lecturers.

(iii) **Private Public Participation:** almost all e-government projects have found it convenient to involve different private agencies for different tasks through public-private-partnership (PPP) arrangements. These tasks include design and development of application software, population of data and content in the regional language, procurement and installation of networking and computer systems, deployment of software and delivery of services.

(iv) **Centralized Information:** E-Governance has provided electronic information infrastructure to simplify service delivery, reduce duplication, and improve the level and speed of service at a lower cost. The centralized information approach of e-Governance keeps all information at one place in electronic form. This approach of making information secure prevents it against any theft or leakage.

(v) **Use of intranet:** Intranet-based training provides a low cost and knock-on savings. It can be a virtual two-way system, with students connected to mentors and teachers receiving real-

time feedback and support. Managers with employees scattered among sites and locations, particularly if they are so far flung that they are in different areas, need a cheap and effective way to communicate them. ICT is already proven as the way to access knowledge based information from anywhere to anytime but a limitation of the university that they can't communicate with other colleges.

2.4 Benefits of E-Governance in Higher Education

RanjeetaKapoor and Nisthakelkar (2013) identified the following as the major benefits of e-governance in higher education:

2.4.1 Benefits to university
(i) Centralized information access from anywhere
(ii) Increase in student enrolment ratio.
(iii) Provide quality e-services, e-participation,
(iv) Increase clearness
(v) Inventive teaching tools
(vi) Improved decision making, Private Public Participation
(vii) Less paper work

2.4.2 Benefits to students
(i) Increase participation in education affairs
(ii) Personalized login for each students
(iii) Extensive saving in time cost & efforts
(iv) Information & transaction services
(v) Job opportunities
(vi) Social connectivity for collaboration
(vi) Students can access virtual lectures &Seminars.
(viii) Students can solve their problems like-examination queries, result verification etc.
(ix) Students can submit feedback to university.

2.4.3 Benefits to colleges
(i) Data can be accessed easily
(ii) Electronic data exchange with university
(iv) Saving of hidden operational cost

(iv)   Instant statistical report generation
(v)   Helpful for NAAC accreditation

2.4.4 Overall education system
(i)   Long term impact on organization goals
(ii)   Improve education system
(iii)   Empowerment of faculties, students & encouragement of their participation in governance.

2.5 Access to E-Governance Service Delivery in Higher Education

The stakeholders in e-governance are government, investors, employees, vendors, intermediaries and citizens. Various environmental variables that exert an impact upon implementation of e-governance are social, political, legal and economic. This also includes internal aspects which cover IT applications to increase efficiency and effectiveness of internal functions, internal communications and internetworking (Ray and Dash, 2005).

Studies by Ozioko (2005) recommend that users of ICT should possess some skills of ICT for a better and quick information retrieval. The utilization of ICT facilities for information service delivery becomes a crucial one. It is so because with the utilization of ICT facilities, institution would be able to provide a clear demonstration and address the needs and desires of the teeming users of information. In a study by Chisenga (2007) on the skills of information technologies in Zambia found that any library that has effectively utilized ICT facilities in its services delivery can boast of having world wide access to much information to meet the needs of its users. Lau (2003) pointed out that the availability of I.C.T and skilled workforce with good capacity for learning is essential for e-governance along with other factors like leadership, regulatory frameworks, financial resources, organizational conditions, and Information and technology infrastructure.

2.6 Challenges to E-Governance Implementation in the Tertiary Institutions

By implication however, the e-governance implementation in the tertiary institutions is accompanied with many challenges. According to Abdel-Fattah and Galal-Edeen (2008), Bansonde and Patil (2011), Olaopa (2014), Adeyemo (2011), Okwueze (2010), UNDP (2006), Ndou (2004), the major challenges of e-governance in the public tertiary institutions are:

(i)   High cost associated with the procurement and training of public servants with ICT skills.
(ii)   Absence of skilled workers to handle various ICT services and their applications in bringing about the successful implementation of e-governance in the public sector.
(iii)   Lack of government regulatory policy is a major issue that needs to be addressed if e-governance is to be a reality in government organizations.
(iv)   Epileptic and irregular supply of power.
(v)   Digital divide also poses a challenge to e-governance implementation in Nigeria's public service.
(vi)   Inadequate funds allocated to the e-governance projects.
(vii)   Lack of ICT Infrastructure
(viii)   Attitude or Resistance to Change
(ix)   Lack of institutional framework supporting e-government
(x)   Privacy and security concerns
(xi)   Culture and Attitudes

According to Kamar and Ongo'ndo (2007), the chronic challenges facing the implementations of E-Governance in developing countries are:

(i)   A reluctance to share information which has resulted in policies that deny access to information and the creation of "empty" government ministries websites with information of little value.
(ii)   The government being faced with management challenges in the implementation of E-governance. The uncoordinated E-governance activities result from low level of public administration of E-Services as well as low quality and insufficient E-content information from grassroots levels of websites.
(iii)   Low information technology literacy in a country which slows down the process of E-governance services consumptions.
(iv)   The uneven distribution of Internet facilities, high cost of connection and in some cases low penetration of high speed connectivity to the Internet.

(v)   Digital Divide which is experienced between the urban rich and poor, the rural and urban citizens, the IT literate and the IT illiterate. This manifests also in the language in which web site content is delivered which can only be understood by a minority elite.

(vi)   Insufficient allocation of financial resources due to financial constraints and mixed government policies which has slowed down the rate at which E-government is introduced.

(vii)   E-government implementations failing due to a mismatch between the current and future systems resulting from the large gap between physical, social, cultural, large gap of planned and actual performances, economic and other contexts between the software designers and the place in which the system is being implemented.

3. METHODOLOGY

3.1   Research Design
The descriptive research design of the survey type was employed in the study. The researcher used descriptive research design to observe the effect of e-governance usage on service delivery in tertiary institutions in Oyo Township of Southwest Nigeria.

3.2   Population of the study
The population of the study consists of the staffs and students in the following tertiary intuitions in Oyo Township (i.e. Emmanuel Alayande College of Education, Oyo, Federal College of Education (Special), Oyo, Federal School of Surveying, Oyo and Ajayi Crowther University, Oyo.)

3.3   Sample and Sampling Techniques
A proportional random sampling technique was utilized to select 2000 respondents from the population of the study. Proportional random sampling technique was used to enable equal proportion of both staffs and students that made up the population of the study.

3.4   Research Instrument
An adapted self-designed questionnaire tagged "Effect of E-Governance Usage on Service Delivery in Tertiary Institutions in Oyo Township of Southwest Nigeria was used for data collection. The items in the instrument were modified from the instrument constructed by Worku

(2016). The instrument contained six sections. Section A sought information on the demographic data of the respondent which include sex, age, educational qualification, category and year of working experience. Section B contained 8 questions related to the effect of e-governance usage on the efficiency and effectiveness of services delivery in tertiary institutions. Section C contained 8 questions on the effect of the e-governance usage on the quality of services delivery and cost reductions in tertiary institutions. Section D contained 9 questions on the effect of e-governance usage on the promotion of good governance of service delivery in tertiary institutions. Section E contained 6 questions on the effect of the e-governance usage on the customers' satisfaction of service delivery in tertiary institutions. Lastly, section F contained 4 questions on the usage of e-governance. The response modes for the questions were "Strongly Agree" (SA coded 5); "Agree" (A coded 4); "Undecided" (UD coded 1), "Disagree" (D coded 3) and "Strongly Disagree" (SD coded 2).

3.5   Validity and Reliability of the Instrument
The face and content validity of the questionnaire was ascertained through the consultation of experts in Test and Measurement. A sample of twenty respondents was selected apart from the selected sample and the questionnaire was administered on them to carry out test-retest analysis. The reliability coefficient was calculated to be 0.84 using Pearson Product Moment Correlation on the data collected.

3.6   Method of Administration of the Instrument
The instrument was administered personally by the researcher on the sample respondents by visiting each institution and through the help of Head of Departments in each institution. The process of administering the questionnaire took two weeks and only 1950 copies of the completed questionnaire were retrieved from the sample respondents to give 97.5% return rate. Therefore, one thousand, nine hundred and fifty (1950) questionnaires were used for the study.

3.7   Method of Analysis of the Data
Statistical Package for Social Sciences (SPSS) package 17.0 was used to analyze the data collected from the respondents. The statistical techniques adopted are simple percentage, frequency count and regression analysis test at 0.05 level of significance.

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4. RESULTS

The summary results of the respondents' responses to the questionnaire indicated that 64.8%, 65.7%, 77.4% and 57.5% agreed that e-governance usage improves effectiveness and efficiency of services delivery in tertiary institutions, improves quality of services delivery and cost reductions of services delivery in tertiary institutions, promotes good governance of services delivery in tertiary institutions and enhance customers' satisfaction of services delivery in tertiary institutions respectively (See Appendix1).

The coefficient of determination R^2 and adjusted R^2 are 0.652 and 0.651 respectively meaning that 65.1% of the variation of effect of usage of e-governance on services delivery in tertiary institutions in Oyo Township of Southwest Nigeria was explained by the five independent variables shown in Table 1 above. R^2 value ranges from zero and one, the closer the value is to one, the better "fit" the model is. The results of the significant test of regression model F value of 727.888 and sig. f is 0.000 indicates that the model has a significant statistic and it indicates the "goodness" of fit of the model.

In addition, effectiveness & efficiency of services delivery (β =0.682, $t(1944)$ = 2.162, $p< 0.05$), quality of services delivery (β =0.675, $t(1944)$ = 2.325, $p< 0.05$), cost reduction of services delivery (β =0.649, $t(1944)$ = 1.607, $p< 0.05$), good governance (β = 0.318, $t(1944)$ = 2.804, $p< 0.05$) and customers' satisfaction (β =0.130, $t(1944)$ = 2.780, $p< 0.05$) contributed significantly to the regression model. That is, the use of e-governance will improve the effectiveness, efficiency and quality of the services delivery. Also, the use of e-governance reduces the cost of services delivery, promote good governance and enhance the customers' satisfaction. In addition, by examining the standardized regression coefficients, effectiveness & efficiency of services delivery (β = 0.682) appeared to have strongest effect of the use of e-governance, followed by quality of service delivery (β = 0.675) and cost reduction of service delivery (β = 0.649) respectively.

5. DISCUSSION

Findings from Table 1 showed that there is significant positive relationship between use of e-governance and effectiveness and efficiency of services delivery in tertiary institutions. This finding corroborates the findings of Worku (2016) that found that e-governance platform (DARA) improves the effectiveness and efficiency of service delivery. Also, the study is in line with the findings of Ewuim et. al. (2016) that found a positive correlation between ICT and public service delivery in Amuwo-Odofin local government in Lagos State of Nigeria. Ainabor (2011) concurred that one of the rationales for application of ICT in public sectors is improved efficiency and effectiveness.

The findings from Table 1 also revealed that there is significant positive relationship between use of e-governance and quality of services delivery. This was overwhelming agreed by respondents that the use of e-government platforms enhance the quality of services delivery. This finding corroborates the findings of Worku (2016) that the use of e-governance platform improves the quality of service delivery.

Moreover, findings from Table 1 indicated that there is significant positive relationship between the use of e-governance and cost reduction of services delivery. This result was supported by Ewuim et *al* (2016) that the internet facilities have helped in ensuring quick and effective service delivery, reducing overhead cost of operation and has eased the working procedure of the civil servants. Also, the finding corroborates the findings of Ayoade (2017) that the use of ICT reduces transaction cost in public service delivery and also reduces unnecessary expenditure of the citizens in services delivery.

Also the findings from Table 1 revealed that there is significant positive relationship between use of e-governance and good governance of services delivery. This finding corroborates the findings of Ayoade (2017) that ICT significantly ensures transparency and accountability in the public service delivery in the three local government councils in Oyo Township. Also, the finding corroborates the findings of UNPAN (2012), that ICT can be used in diverse applications to accelerate information dissemination, improve efficiency of public services, increase the transparency and accountability of government administration, to reduce corruption, and facilitate citizen participation in governance. Also, this situation is well expressed by Danfulani (2013), when he said that, there is no contesting the fact that the infusion of ICT into public sector in Nigeria has massively downsized the level of corrupt activities in the sector.

Finally, the findings from Table 1 showed that there is significant positive relationship between use of e-governance and customers' satisfaction of services delivery. This was overwhelming agreed by respondents

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that the use of e-government platforms increase customers' satisfaction level. This finding was in support of the findings of Worku (2016) that e-government enhances the customers' satisfaction level.

6. CONCLUSION

From this study, it was found that the effect of e-governance usage on services delivery in tertiary institutions cannot be overemphasized. The uses of e-governance enables staffs/students to have access to timely information, participated effectively in governance, promote assurance, trust and confidence, increase accessibility of the institution's service to the staffs/students, repositioned the governance and thereby improve service delivery to them.

Also, it was found that the use of e-governance improves the effectiveness and efficiency of services delivery. Likewise, the use of e-governance enhances the quality of services delivery. The use of e-governance also reduces both transaction cost and unnecessary expenditure of the peoples in the services delivery.

Finally, it was found that the use of e-governance promotes good governance and increase customers' satisfaction level.

7. RECOMMENDATIONS

Based on the findings of this study, the following suggestions are hereby recommended:

(i) Government must provide adequate infrastructures for the implementation of e-governance for all the government parastatals in the country.
(ii) Sensitization programme must be organized continually for both the government personnel and entire populace in Nigeria so as to enlighten them on how to use e-governance to access government services and carry out service delivery.
(iii) Government can subsidy the cost of purchasing computers, communication equipment, and other information technology accessories to enable people to purchase at cheaper rate and affordable price (Ayoade, 2017).
(iv) E-governance platforms must be robust, accessible 24/7 and easily affordable to the customers/citizens.
(v) Government should regularly inform customers/citizens through the use of mass media or distributions of bullets/fliers so as to increase their awareness toward the use of e-governance.

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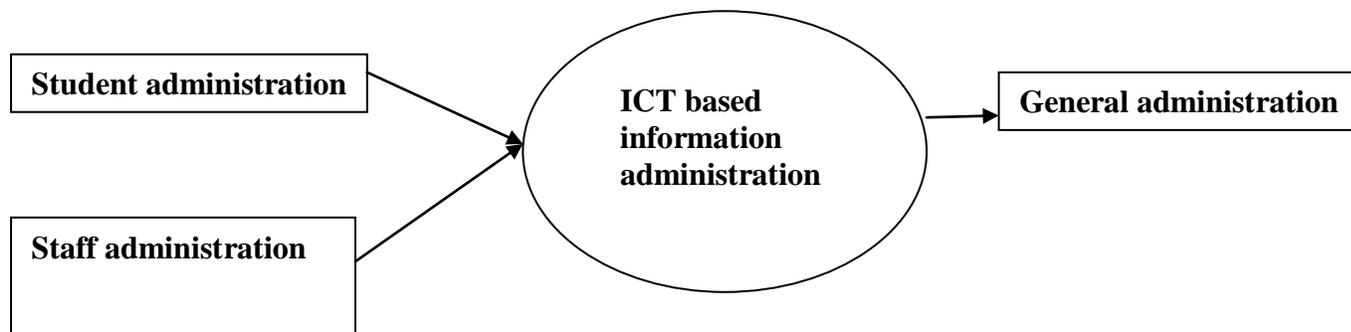
Figure 1: Theoretical Model for Information Administration (Adapted from Krishnaveni and Meenakumari, 2010)

Table 1: Multiple Regression Analysis of the Relationship between the Dependent Variable (i.e. Use of E-Governance) and Independent Variables (i.e. Effectiveness& Efficiency of Services Delivery, Quality of Services Delivery, Cost Reduction in Services Delivery, Good Governance and Customers' Satisfaction (N=1950)

Model	R	R^2	Adjusted R^2	Standard Error of the Estimate
1	0.807	0.652	0.651	1.337

Analysis of Variance

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	6507.139	5	1301.428	727.888	0.000
Residual	3475.776	1944	2.741		
Total	**9982.915**	**1949**			

Coefficient of the Prediction (N=1950) ** Significant at 0.05

Model	Unstandardized Coefficient		Standardized Coefficient		
	B	Std. Error	Beta	t	Sig.
Effectiveness & Effective of Services Delivery	0.346	0.008	0.682	2.162	0.000**
Quality of Services Delivery	0.365	0.009	0.675	2.325	0.000**
Cost Reduction in Service Delivery	0.342	0.009	0.649	1.607	0.000**
Good Governance	0.156	0.011	0.318	2.804	0.000**
Customers' Satisfaction	0.049	0.008	0.130	2.780	0.000**
Constant (Use of E-Governance)	1.744	0.301		5.898	0.000**

Source: Survey, 2017

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Appendix I

Table 2: Summary of the Respondents' Responses to the Questionnaire

S/N	STATEMENT USED FOR MEASUREMENTS	SCALE OF MEASUREMENT				
		SA	A	UD	D	SD
Effect of E-governance usage on the Effectiveness and Efficiency of Services Delivery in Tertiary Institutions						
1	Using E-Governance will inform the staffs/students when, where and how services in the tertiary institutions will be delivered	284(14.6%)	276(14.2%)	146(7.5%)	703(36.1%)	541(27.6%)
2	Using E-Governance changes the attitude of staffs/students toward using electronic service delivery, protect their confidentiality and privacy.	702(36.0%)	726(37.2%)	180(9.2%)	146(7.5%)	196(10.1%)
3	Using E-Governance provides technical supports for staffs/students in times of their difficulty and build their trust and credibility on the management of the institution	248(12.7%)	1009(51.7%)	118(6.1%)	256(13.1%)	319(16.4%)
4	Using E-Governance provides automating services that replace lots of paper files into electronic file folders	642(32.9%)	755(38.7%)	88(4.5%)	269(13.8%)	196(10.1%)
5	Using E-Governance saves time by removing waiting long queues and time spent on frequent travel to different institutions' campuses	640(32.8)	1106(56.7%)	98(5.0%)	56(2.9%)	50(2.6%)
6	Using E-Governance creates better channel of communication between institution's management and staffs/students	58(3.0%)	57(2.9%)	38(1.9%)	728(37.4%)	1069(54.8%)
7	Using E-Governance facilitates effective, efficient and timely staffs'/students' grievance handling mechanisms	732(37.6%)	1065(54.6%)	36(1.8%)	64(3.3%)	53(2.7%)
8	Using E-Governance provides up-to-date information with helpful response to staffs'/students' requests	870(44.7%)	934(47.9%)	22(1.1%)	94(4.8%)	30(1.5%)
Effect of E-Governance usage on the Quality of Services Delivery and Cost Reductions of Services Delivery in Tertiary Institutions						
9	Using E-Governance reduces transactional, administrative, transportation, parking and fuel costs of the institutions and promote flexibility of service delivery and timely answers to enquiries of staffs/students	887(45.5%)	826(42.4%)	45(2.3%)	76(3.9%)	116(5.9%)
10	Using E-Governance improves the flow of information between management and staffs/students and service delivery intelligence	1078(52.4%)	50(2.6%)	44(2.2%)	732(35.6%)	46(2.4%)
11	Using E-Governance enables integrated	487(25.0%)	873(44.7%)	132(6.8%)	217(11.1%)	241(12.4%)

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	control of supply, volume and value chain processes of service delivery rendered by the institution			)	)	
12	Using E-Governance accelerates service delivery processes regardless of geographical proximity and distance locations of staffs'/students' and creating better channel of communication with institution's management	424(21.7%)	871(44.7%)	117(6.0%)	408(20.9%)	130(6.7%)
13	Using E-Governance makes less bureaucratic procedures of service	724(37.1%)	315(16.2%)	106(5.4%)	565(29.0%)	240(12.3%)
14	Using E-Governance will improve communication between the institution's management and large number of staffs/students/parents at a time	624(32.0%)	487(25.0%)	159(8.2%)	326(16.7%)	354(18.1%)
15	Using E-Governance makes staffs/students with disabilities to have access to institution's services and increases its accountability to them	563(28.9%)	570(29.1%)	3(0.2%)	379(19.4%)	435(23.3%)
16	Using E-Governance provides faster online documents and registration forms to staffs/students	677(34.8%)	845(43.3%)	76(3.9%)	166(8.5%)	186(9.5%)

Effect of E-Governance usage on the Promotion of Good Governance of Services Delivery in Tertiary Institution						
17	Using E-Governance ensures transparency and accountability and makes the platforms answerable to actions and decision towards staffs/students	723(37.1%)	713(36.6%)	0(0.0%)	276(14.1%)	238(12.2%)
18	Using E-Governance increases the awareness levels of staffs/students regarding services offering and their rights as users	703(36.1%)	864(44.3%)	0(0.0%)	233(11.9%)	150(7.7%)
19	Using E-Governance breaks the hierarchies into lateral & flat structures of communication and simplifying complex procedures and process	510(26.2%)	555(28.4%)	0(0.0%)	483(24.8%)	402(20.6%)
20	Using E-Governance allows the staffs'/students' to forward their feedbacks & opinions, allowing participation during policy making processes	246(12.6%)	935(47.9%)	0(0.0%)	322(16.6%)	447(22.9%)
21	Using E-Governance enables decentralization of E-governance, since data stored in digital format can be updated and accessed from virtually any office via networked environment	381(19.5%)	1237(63.4%)	48(2.5%)	133(6.8%)	151(7.8%)
22	Using E-Governance promotes good governance through participatory involvement of staffs/students in decision-making process with the institution's	643(33.0%)	1178(60.3%)	2(0.1%)	83(4.3%)	44(2.3%)

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	management					
23	Using E-Governance reduces corruptions and wastage of financial resources of institutions by introducing E-procurements and online bids/tenders contracts	666(34.2%)	1167(59.9%)	28(1.4%)	59(3.0%)	30(1.5%)
24	Using E-Governance allows for tackling of administrative corruption and reduces the opportunities for corruption to infiltrate	613(31.4%)	1054(54.2%)	24(1.2%)	123(6.3%)	135(6.9%)
25	Using E-Governance makes every action to be easily inspected, retrieved and interactions from portal data base that minimize corrupt and maladministration practices	615(31.5%)	790(40.5%)	12(0.6%)	286(14.7%)	247(12.7%)
Effect of E-Governance usage on the Customers' Satisfaction of Service Delivery in Tertiary Institutions						
26	Using E-Governance enables the staffs/students to be able to communicate and arrange appointments using E-mail with concerned institution's official in charge	676(34.7%)	530(27.2%)	23(1.2%)	426(21.8%)	295(15.1%)
27	Using E-Governance allows staffs/students to provide their feed backs and opinions online from anywhere and anytime	670(34.4%)	516(26.5%)	9(0.5%)	478(24.5%)	277(14.1%)
28	Using E-Governance allows staffs/students to access institution's portal online 24hrs/7days regardless of geographical distances and waiting for office hours	655(33.6%)	503(25.8%)	13(0.7%)	466(23.8%)	313(16.1%)
29	Using E-Governance enables staffs/students to register and request for institution's services using online forms	654(33.5)	501(25.7%)	10(0.5%)	493(25.3%)	292(15.0%)
30	Using E-Governance enables staffs/students to submit their grievances and problems they encountered in service delivery processes and follow up it using institution's webpage/portal	55(2.7%)	58(3.0%)	9(0.5%)	986(50.6%)	842(43.2%)
31	Using E-Governance enables staffs/students to pay their service charges and fees online	914(46.9%)	989(50.7%)	23(1.2%)	16(0.8)	8(0.4%)
Use of E-Governance						
32	I use E-Governance to communicate and book appointments with institution's official in charge	740(37.9%)	1085(55.6%)	40(2.1%)	31(1.6%)	54(2.8%)
33	I use E-Governance to look for job vacancy or admission	467(23.9%)	862(44.2%)	146(7.5%)	234(12.0%)	241(12.4%)
34	I use E-Governance to do course registration and request for other services online	431(22.1%)	850(43.6%)	124(6.4%)	414(21.2%)	131(6.7%)
35	I use E-Governance to pay for school fees and other services charges online	732(37.5%)	534(27.4%)	114(5.8%)	247(12.7%)	323(16.6%)

Source: Survey, 2017

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Appendix II

Step by Step Practical Procedures of the Analysis of Data Using SPSS

1. Click the Variable view to defining the variables in the data (i.e. I define the following variables in the data)
   (i) Effectiveness & Effective of services delivery which contain eight questions (i.e. Eff1, Eff2, Eff3, Eff4, Eff5, Eff6, Eff7 and Eff8 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points value, D for 3 points value, SD for 2 points value and UD for 1 point value).
   (ii) Quality of services delivery which contain seven questions (i.e. Qua1, Qua2, Qua3, Qua4, Qua5, Qua6 and Qua7 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points value, D for 3 points value, SD for 2 points value and UD for 1 point value).
   (iii) Reduction in services delivery which contain only one question (i.e. Red1 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points value, D for 3 points value, SD for 2 points value and UD for 1 point value).
   (iv) Good Governance of services delivery which contain nine questions (i.e. GOO1, GOO2, GOO3, GOO4, GOO5, GOO6, GOO7, GOO8 and GOO9 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points

value, D for 3 points value, SD for 2 points value and UD for 1 point value).
   (v) Customers' Satisfaction of services delivery which contain six questions (i.e. CUS1, CUS2, CUS3, CUS4, CUS5 and CUS6 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points value, D for 3 points value, SD for 2 points value and UD for 1 point value).
   (vi) Use of E-Governance which contain four questions (i.e. UEG1, UEG2, UEG3 and UEG4 will be used as Name of the variable, Type will be numeric, width is 8, decimal is 0, label will bear the questions under the heading of the variable, value is define as SA for 5points value, A for 4 points value, D for 3 points value, SD for 2 points value and UD for 1 point value).
2. Saving of the file as egovernance2017
3. Click on Data view to enter data value
4. Entering the data using the response of the respondents in the questionnaire on each question of the variable define in step 1 above
5. Calculate the number of respondents and their percentage on each option (SA, A, UD, D, SD) using the below steps:
   (i) Click on Analyse on the menu bar
   (ii) Select Descriptive Statistic from drop down menu
   (iii) Select Frequencies
   (iv) Highlight all the variables already defined by click on the first data and press down shift key and click on the last data, then move them to variable
   (v) Click ok.
   (vi) On the output screen (frequency is the total number of respondents that pick a particular option while valid percent represent the percentage)
6. Calculate the Regression Analysis using the below steps:
   (i) Merging the all the data values on each variable together as one (i.e. all the eight data values on effectiveness & effective of service delivery as one data

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value, then repeat same for others. Therefore, it remain only 5 independent variables (i.e. effectiveness & effective of service delivery, Quality of services delivery, Reduction of services delivery, Good governance of services delivery and Customers' satisfaction of services delivery) and only one dependent variable i.e. Use of E-governance after merging the four questions under it as one.

(ii)　Click on Analyse on the menu bar

(iii)　Select Regression from drop down menu

(iv)　Select Linear

(v)　Select both dependent variable (i.e. use of e-governance) and independent variables (i.e. effectiveness & effective of services delivery, quality of services delivery, reduction in service delivery, good governance and customers' satisfaction of services delivery)

(vi)　Click ok.

(vii)　Select necessary output on the output screen.

ABOUT THE AUTHOR

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