

A Re-Appraisal of E-Governance as Emerging Concept in Public Institutions in Anambra State Nigeria

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Abstract: *The study is an investigation into the implications of electronic administration on service delivery at selected public tertiary institutions in Anambra State. Four randomly selected institutions - The Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegwu Ojukwu University, Federal Polytechnic Oko and Federal College of Education (Technical) Umunze were studied. The research was anchored on the platform of the New Public Management Theory which advocated for a swifter and more result oriented management method. Data for the study were generated via a structured questionnaire distributed to staff and students of the selected institutions under study. Observation method was also employed. Data collected were analyzed in frequency tables and percentages while the hypotheses were tested using ANOVA and t-test regression analysis. The study revealed that most tertiary institutions in Anambra have adopted and integrated e-administration into various areas of their management which have also improved service delivery to some reasonable extent. However, full benefits of this new management technique are not realized due to some undermining factors essentially bordering on low level of technological development in the country. The challenges include internet hiccups, power outage, poor maintenance culture, illiteracy, and integrity issues. The research therefore calls for the intervention of government (via funding and logistic supports) at all levels to assist tertiary institutions to fully adopt and integrate e-administration in all needed areas of their management.*

Keywords: Information Communication Technology, E-Governance, Service delivery

1.1 INTRODUCTION

Electronic administration (e-administration) is an aspect of electronic governance. E-governance was introduced in Nigeria with the formulation of the Nigerian National Policy for Information Technology in March, 2001. The cardinal objective among others was to improve the accessibility of public administration to all citizens, to bring transparency to governmental processes and also by utilizing Information and Communication Technology (ICT) opportunities, restructure government, citizens and business interface for a better governance and effectiveness (FRN, 2001). Electronic administration entails changing the power of equation on access and control to information and knowledge. Osakede, Ijimakinwa, Arijenwa, Adesanya, & Ojo (2017), stated that digital administration will ensure that the staff are no longer passive in the discharge of their duties but will play a meaningful role in decision making. It will serve as a critical strategy for tertiary institutions in offering affordable, efficient and flexible learning environment for rapid growth. The need for educational administrators in Nigerian tertiary institutions to acquire and use ICT skills cannot be ignored. E-administration enhances organizational productivity and efficiency in service delivery. E-administration offers the platform for which good governance can be accessed. It has the capacity of increasing the involvement of staff and other stakeholders in the administrative process at all levels.

Sequel to the above, most tertiary institutions in the country are rapidly keying into the use of information communications technologies (ICTs) in their management, teaching, learning and research. Several challenges have also been encountered in the process among which are poor electricity supply for adequate operation and maintenance of ICT equipment, poor network services, inadequate fund, low ICT literacy rate, digital divide, inadequate government policy and support, to mention but a few. These problems impact on all aspects of institutions' administration and the need for improvement is imperative. This work therefore is an investigation into the implications of electronic administration on service delivery at selected tertiary institutions in Anambra State.

1.2 STATEMENT OF THE PROBLEM

Most of the tertiary institutions in Anambra state for instance have adopted the online admission process for enrolling prospective candidates but the exercise has not been as seamless as expected. Most of the new entrants are novice in ICT education and sometimes get frustrated trying to process their admission online. Furthermore, poor internet services and information infrastructure as well as low level of technological development in the country have made accessibility a big challenge. Also, the conduct of examinations via computer-based testing method which most tertiary institutions already adopted is not without challenges. Inadequacy of functional computers in the institutions, power outage, faulty monitors, integrity of examination managers and low literacy rate are some of the problems that undermine the effectiveness of the CBT programme. Students have leveraged on this and still engage in all forms of examination malpractices. There are cases where students go into the examination hall and write for themselves and their friends without being caught.

Also, of note are the problems associated with online payment of fees. Unnecessary delays caused by poor network services, excess charges via remita generation and other banks charges sadly make e-payment more costly. There are also problems of inadequate capital, lack of training for staff and students, high cost of maintaining ICT infrastructure, poor acceptability of the new process, absence of policy framework and vandalization of ICT equipment which further made the adaption and integration of e-administration a herculean task. The above challenges have far reaching implications on almost all aspects of educational administration and consequently service delivery. Having noted these challenges, the researcher intends to examine the level of adoption and integration of electronic administration in the management of tertiary institutions in Anambra state and the effect on service delivery. The study also intends to discover ways e-administration could be strengthened to enhance efficiency so that these institutions will remain centers of intellectual excellence in the global setting. The study examined how the components of e-administration (automated admission processes, computer-based testing method of examination, ICT and online payment of fees) have impacted on service delivery (registration exercise, examination management, routine administration and financial probity) in the institutions.

1.3 OBJECTIVES OF THE STUDY

- i. To determine the extent Computer-Based Testing (CBT) method is utilized to improve examination management in tertiary institutions in Anambra State.
- ii. To examine the extent to which online payment of fees has enhanced financial probity in tertiary institutions in the State.

1.4 HYPOTHESES

- i. **H₀:** Computer-Based Testing (CBT) method is not utilized to improve examination management in the institutions.
H₁: Computer-Based Testing (CBT) method is utilized to improve examination management in the institutions.
- iv. **H₀:** Online payment of fees has not enhanced financial probity in tertiary institutions in the State.
H₁: Online payment of fees has enhanced financial probity in tertiary institutions in the State.

1.5 SCOPE OF THE STUDY

The study is on the implications of electronic administration on service delivery in selected public tertiary institutions in Anambra State. The study concentrated on four randomly selected tertiary institutions in the state - Nnamdi Azikiwe University, Awka, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Federal Polytechnic, Oko and Federal College of Education (Technical), Umuze. The institutions are located across the three senatorial zones of the state. The study specifically examined aspects of e-administration like online admission processes and CBT and effect they have on effective registration exercise and examination management respectively. Finally, the study covered the period from 2008 when the institutions under study adopted and integrated e-administration in their administration and management up to 2018. Nnamdi Azikiwe University, Awka and Federal Polytechnic Oko keyed into the e-administrative process in 2008 and 2010 respectively while Chukwuemeka Odumegwu Ojukwu University and Federal College of Education (Technical), Umuze started e-administration much later in 2016 and 2017 respectively. Hence, the study is for a period of between 2008 and 2018.

2.0 LITERATURE REVIEW

2.1 Electronic Administration

Hornby (2012) perceived administration as activities done in order to plan, organize and successfully run a business, an institution or an organization; that is, a process or act of organizing the way something is done. The administration of tertiary institutions refers to the means by which higher educational institutions are operated, organized and managed. Bleiklie (2007) asserted that the administration of higher educational institutions deals with how higher educational institutions steer themselves as well as the processes used to manage them in such away as to lead to effective performance in achieving desired outcomes, goals and satisfaction of stakeholders.

For conceptual clarification, e-administration is an aspect of e-governance, though in most cases, they are used interchangeably. When scholars therefore talk of e-governance in education sector, they are still referring to e-administration. For major reforms and developments in tertiary education to be significant, an improvement in Information and Communication Technology with its positive influence on teaching, administration and research technologies is inevitable. Also, a major tertiary education reform recommended by the World Bank (2002) was that there should be electronic networking involving e-mail communication capacities for teaching, learning, research, management, performance and monitoring of systems. It is imperative that at this junction, we should clearly state the meaning of ICT. Information and Communication Technology refers to technologies that provide access to information through telecommunication devices like computers, wireless networks, cellular phones, internet and/or other forms of electronic gadgets (Tech-Terms, 2010; Tech-Target, 2017).

E-administration in Tertiary Institutions

All over the world, higher institutions play strategic roles in human capital formation. They are places where students get equipped with cutting-edge competences to compete in the ever-evolving globalised world and also be able to effectively manage the affairs of the nation in the future. Higher (tertiary) institutions are important because they supply the much-needed design, teaching and research. The scientific and technological advancement of a nation depends on the quality of graduates turned out by tertiary institutions. Also the development in indigenous technology and capabilities in agriculture, health, security and other sectors can be enhanced by services offered by tertiary institutions. They provide opportunities for lifelong learning, allowing people to upgrade their knowledge and skills from time to time based on societal needs (Shrivastava, Raizada & Saxena, 2014).

Today, the complexities and intricacies of managing tertiary institutions require an alternative and more efficient method of delivering services. The electronic administration ensures that services are delivered in the most efficient, cost effective and accessible manner. Tertiary institutions in Nigeria have not yet adopted and integrated e-administration into the services of all their departments and units. The next section will delve into the specific areas the institutions have adopted e-administration in their functions.

2.2 Electronic (Online) Payment of Fees

The electronic payment is a financial control strategy which pervades or restricts opportunities associated with cash transactions thereby leading to fraud, misappropriation of funds and embezzlement. It is seen as an instrument of management control which was put in place by the Nigerian public sector, initiated by a policy statement of the office of the accountant general of the federation to reduce fraud, and financial misappropriation in all ministries, agencies and institutions (Sanusi, 2011). Electronic payment (E-payment) is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services offered through the Internet. There are many forms of e-payment ranging from cards, Internet, mobile payment, financial service kiosks, biometric payments, electronic payments networks etc and as technology develops, the range of devices and processes to transact electronically continues to increase while the percentage of cash and cheque transactions continue to decrease. In the Nigerian context, e-payment is effecting payments from one end to another end through the medium of the computer without manual intervention beyond inputting the payment data, it is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button. E-payment is aimed at ensuring fiscal discipline and transparent management of finances in the institutions; effective aggregate control of cash will ensure proper monetary and budget control. The adoption of TSA in public sector minimizes transaction costs during budget execution, notably by controlling the delay in the remittance of government revenue by collecting banks and making rapid payment of government expenses; facilitating reconciliation between banking and accounting data, efficient control and monitoring of funds allocated to various government agents; and facilitating policy implementation (Igbekoyi & Agbaje, 2017).

In Nigerian tertiary institutions, students' payment system is essentially powered by Remita payment platform through the Treasury Single Account (TSA) policy of the federal government. This policy is aimed at checking fraud and ensuring financial accountability. The TSA was initially introduced by the Goodluck Ebele Jonathan's administration in April 2012 but became operational following the direction of President Muhammad Buhari that all ministers, departments and agencies (MDAs) should close all their accounts domiciled in commercial banks and transfer to the federation account on or before September 15, 2015. The Independent Revenue e-Collection Scheme was implemented under the TSA initiative and requires that government revenue collection is put into single account for proper cash management (Taiwo, 2015). In other words the TSA policy was therefore to reduce the proliferation of bank accounts operated by MDAs and also, to block leakages and promote transparency and accountability among all organs of government (Taiwo, 2015). It is the Federal Government Independent revenue e-collection initiatives that will automate revenue collection of ministries, departments and Agencies (MDAs) directly into the Federal Government Consolidation Revenue Fund (CFR) account at the CBN through the Remita e-collection platform and other electronic payment channels.

2.4 ICT and Routine Administration

Information and Communication Technology have aided not only in admission exercises but most importantly in effective and quick decision making processes. The information present in the educational institutions is in fragmented and fuzzy form, it is generally compiled in non-standard formats (Krishraremi, & Meenakumani (2010); Mikre (2011); Odukoya & Nwodo (2015). Manual handling of huge data can be very difficult and causes delayed information collection and compilation, but with the use of ICT, well-organized and analyzed data is readily available to foster effective and quick decision-making.

Organizing of Information is another important aspect ICT have helped in tertiary institution management. Institution administrators need to have basic information on students and teacher flows. For example, categorize data on student/staff by sex, class, state of origin, performance in schools etc. They organize data into an easily accessible format and can be easily stored and retrieved from the computer. Proper Utilization and Allocation of Resources is another way ICT effect institution processes. It is very difficult to track the staff and students movement and progress at colleges and universities. It is also

difficult to take stock of institutions' assets and this has serious implications on financial planning and budgeting. With the use of ICT, institutional resources can be efficiently mobilised and effectively allocated.

In the modern world of technology in which institutions exist, they need ICT services, that is, e-services in their management. ICT makes it easy for an institution's decision making exercise because they have information at hand. With the aid of ICT, university managers have more information at their reach than ever before; modern ICT improves good organization and usefulness at each stage of the management decision making process.

Educational records are kept for the purpose which range from documenting evidence of every significant activity undertaken in the school system to ensure a smooth connection between the past, present and the future operations. The essence is to make the right information available to the right persons in the right order at the right place and time with the most minimal costs. Records management entails the effective, efficient and systematic control of the process of creating, receiving, maintaining and disposing of valuable information about an institution (Vakkari & Granin, 1992). Put differently, it is the means of processing information for optimum accessibility and viability, concerned with the origination, collection, storage, retrieval, interpretation, transmission, transformation and use.

The development in Information and Communication Technologies (ICTs) and the need for transforming the tertiary education system has necessitated the use of ICTs by institutions globally in the process of management of their records and this is called e-record management. Electronic records are information generated electronically and stored by means of computer technology. According to the National Archives of Australia Digital Record keeping Guidelines (2004), digital records include word-processed documents, spreadsheets, multimedia presentations, email, websites and online transactions. Electronic records can be found in many systems throughout the organization including databases and business information systems, shared folders and hard drives. They are evidence of organizational activities and are generally the computerized versions of traditional paper records.

According to Smallwood (2013), electronic records include all components of an electronic information system namely: electronic media as well as all related items such as input documents, printouts, programs and metadata, which is background and technical information on the information stored electronically. In tertiary institutions, some of the vital records produced and used include students and employee records. Records could be those that contain initial application forms, results, and physical examination, periodic appraisals, transfer, transcript, payment information, promotion and so on. It is argued that management of these records poses problems because of their bulk, longevity, sensitivity and valuable space it occupy in offices.

2.5 Financial Probity

In the context of a financial environment, financial probity is about the ethical, lawful, prudent, effective and transparent conduct of financial transactions, and of processes that ensure that all transactions and procedures are supported by a robust risk management strategy. According to Burgess (2014), financial probity is concerned with ethical conduct with which public servants carry themselves while handling public finances. The author further stated that financial probity is monitored through standardized procedures of accounting and auditing. Such procedures are embedded in electronic transaction processing technologies such as the integrated management information systems (IFMIS). Cole (2015) asserts that probity is achieved by using IFMIS as a tool to ensure the promotion of transparency in e-governance.

Ensuring probity in public sector activities is part of every public official's duty to adopt processes, practices and behaviour that enhance and promote public sector values and interests. Probity in governance also elucidates that apart from the traditional civil service values of efficiency, integrity, accountability and patriotism. It is essential for civil officers to instruct and adopt ethical and moral values including probity in public life, respect for human rights and compassion for the downtrodden and commitment to their welfare. The requirement for accountability necessitates the provision of information about government programmes and services. Public officials, legislators and the entire citizenry want and need to know not only whether public funds are handled properly and in compliance with the laws and regulations but also whether organizations, programmes and services are achieving the purpose for which they were authorized and funded and whether they are doing so economically and efficiently. (Bragg, 2013).

3.0 METHODOLOGY

The research instrument employed in this study was the questionnaire. The questionnaire has three parts. Part A is the introductory letter, part B contains the demographic data of the respondents while the third part of the questionnaire is the actual questions which relates to the objectives, the proxies and variables of the study. The instruments for the students were randomly distributed to respondents irrespective of programme, class or sex while those for staff were taken directly to officers that perform electronically integrated functions, that is, officers at ICT centres, biometric data units, academic and administrative departments. The researcher was also privileged to visual data through observing the state and quality of

facilities, equipment and infrastructure provided by the institutions to facilitate the adoption, integration and practice of e-administration at the institutions.

Data generated from primary source was analyzed using descriptive statistics such as frequency tables, weighted mean and simple percentages.

4.0 TEST OF HYPOTHESES, FINDINGS AND RECOMMENDATIONS

4.1 Hypothesis one: Computer-Based Testing Method is not utilized to improve examination management in the institutions.

Table 4.1: ANOVA Table for Hypothesis Three

Measures of Association				
Computer-based test (CBT) and Examination management	R	R Squared	Eta	Eta Squared
X3 * X7	.997	.995	.999	.998

ANOVA Table							
		Sum of Squares	Df	Mean Square	F		Sig.
X3 * X7	(Combined)	21455.897	15	1430.393	12664.339		.000
	Between Groups	21384.599	1	21384.599	189333.829		.000
	Deviation from Linearity	71.298	14	5.093	45.089		.000
	Within Groups	12.468	376	.113			
	Total	21498.365	391				

Source: Researcher's Field Survey, 2019

Computation: SPSS Ver. 20

The measures of association table above shows that R^2 value is 0.995. To this end therefore, all variables under measure are examined and can be predicted at 99% level of significance. The ANOVA table also gave the f-cal. value as 45.089 while Prob. (F-stat) is 48.9 at 0.05 level of significance. Since f-cal of 45.89 is less than the f- tab. of 48.9 (critical) ($df_1 = 1$, $df_2 = 2n = 392$) = 0.005. We have reason to accept the null hypothesis, that is, CBT is not utilized to improve examination management in tertiary institutions in the state.

Table 4.1: T-Test for Hypothesis one

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	X3	13.6199	391	7.41505
	X7	13.8724	391	7.41975

The average means of 13.199 and 13.824 which fall within the acceptance region of above 3.01 shows that Computer-based testing method is significant on examination management, hence the correlation test below:

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 X3 & X7	391	.997	.000

From the above table, X3 and X7 are correlated at 0.99 significance and therefore can influence each other.

Paired Samples Test

Computer-based test and Examination Management	Paired Differences						t-cal	t-tab	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
				Lower	Upper					
Pair 1 X3 - X7	-.25255	.53996	.02727	-.30617	-.19893	-9.260	2.995	391	.000	

Source: Researcher's Field Survey, 2019

Computation: SPSS Ver. 20

The t-test statistics was also carried out to confirm the result of the average mean and determine the extent to which Computer-based test has been utilized to improve examination management in the institutions. From the result, the t-cal. of -9.20 is less than the t-tab. of 2.995 which goes in favour of the null hypothesis, meaning that Computer-based test is not utilized to improve examination management though they are significant on each other. By implications, there are still other factors undermining the full integration of CBT method of examination management in tertiary institutions in the state.

4.2 Hypothesis two: Online payment of fees has not enhanced financial probity in tertiary institutions in the state.**Table 4.2: Table of Mean for Hypothesis Four**

Measures of Association				
	R	R Squared	Eta	Eta Squared
X4 * X8	.998	.996	.999	.999

ANOVA Table						
		Sum of Squares	Df	Mean Square	F	Sig.
X4 * X8	(Combined)	21474.109	15	1431.607	18360.591	.000
	Between Linearity	21420.256	1	21420.256	274718.210	.000
	Deviation from Linearity	53.852	14	3.847	49.333	.000
	Within Groups	29.317	376	.078		
	Total	21503.426	391			

Source: Researcher's Field Survey, 2019

Computation: SPSS Ver. 20

From the measure of association table, $R^2 = 0.99$ showing that variables under test are examined at 99.01% level of significance. On the other hand, f-cal. value stands at 49.333 while Prob. F-stat is 44.49 at 0.05 level of significance. (Meaning that f-cal (49.333) is greater than the f stat. (44.49) (critical) ($df_1 = 1$, $df_2 = 2$ n = 391) = 0.005). We therefore accept the alternate hypothesis to the effect that online payment of fees has enhanced financial probity in tertiary institutions in the state. The contribution which the independent variable made in predicting the effect of online payment transaction of school fees is strong enough to establish this assertion. From the above test it was therefore, concluded that online payment of fees has enhanced financial probity in tertiary institutions in the state.

Table 4.2.1: T-Test for Hypothesis two

Paired Samples Statistics					
Online payment of fees and financial probity		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	X4	13.7883	392	7.41593	.37456
	X8	13.9694	392	7.45140	.37635

The average means of 13.883 and 13.994 which fall within the acceptance region of above 3.01 shows that online payment of fees has enhanced financial probity in tertiary institutions in the state.

Paired Samples Correlations			
Online payment of fees and financial probity		N	Correlation
Pair 1	X4 & X8	391	.998
			.000

From the above table, correlation of variables were subjected to test and revealed that X4 and X8 were correlated at 0.998 level of significance. Next is the t-test analysis:

Paired Samples Test

Online payment and probity	financial	Paired Differences					t-cal	t-tab	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	X4 - X8	.18112	.46389	.02343	-.22719	-.13506	-7.730	-8.96	391	.000

Source: Researcher's Field Survey, 2019

Computation: SPSS Ver. 20

The t-test statistics was also carried out to confirm if the result of the average mean is significant on the saying that online payment of fees has enhanced financial probity in tertiary institutions in the state. The result showed that t-cal. of -7.730 is greater than the t-tab. of -8.96, based on the decision rule of t-test statistics, the alternate hypothesis is accepted to the effect that online payment of fees has enhanced financial probity in tertiary institutions in the state.

4.3.1 Summary of Findings

From all the data collected, the following are deduced from the study:

1. Application of Information and Communication Technology (ICT) is not fully utilized in routine activities. Most mails are not electronically treated for quick dispatch of directives. There are major challenges militating against the use of ICT. The institutions' websites for online transaction within and outside are not fully functional. Records electronically generated are not easily retrieved due to technical and infrastructural challenges, especially poor network services.
2. Computer-based testing method has not been used to improve examination management in the institution. Most of the institutions studied have adopted the electronic (CBT) examination process for both post UTME and in-course assessment. However, a lot of challenges are militating against the exercise. Shortage of ICT infrastructure (both software and hardware), power outage, fraud and poor maintenance of ICT facilities are some of the problems undermining the full integration of CBT in effective management of examinations. Students also seem to take the CBT courses less serious than those written with pen and paper. Nevertheless, the exercise to a large extent has reduced examination malpractices, incidence of missing scripts and is also less stressful to lecturers.
3. Online payment of fees has enhanced financial probity in tertiary institutions in Anambra State. Most of the fees in the institutions are paid online via remita payment platforms and this method has blocked loopholes for sharp practices. However, a lot of problems still manifest with the payment system that sometimes people wish to revert to the traditional method of paying cash to assigned officers.

4.3.2 Conclusion

Most public tertiary institutions in Anambra State have adopted the use of electronic medium in administering different areas of their endeavour. The move is basically about harnessing technology for better planning, setting standards, effective change and monitoring results of the core functions of the institutions. The advantages are quite numerous. Automated admission processes for instance make it easy for large number of candidates to be assessed within the shortest possible time and with less cost. Even in routine administration, ICT technology can process voluminous records quickly, meticulously and impeccably thereby generating reliable and consistent records that can be easily retrieved.

However, the benefits of e-administration in Anambra tertiary institutions have not been fully harvested due to seeming challenges that undermine the processes. These problems which range from poor funding from government, fraud, poor maintenance, culture, sabotage and issues from unstable power supply appear insurmountable. The researcher in the next section put up some policy recommendations and implementation strategies that can help institutions realize the goals and consequently enjoy the benefits of e-administration.

4.3.3 Recommendations

1. Frequent training and retraining of both workers and students in ICT technology is also paramount. This will not only enhance implementation of e-administration but will generally improve teaching, learning and research in the institutions.
2. To meet the demands of the global best practices in higher education, the implementation of CBT will require a more secure testing environment that will prevent students from seeking answers by scanning their computer hardware during examinations, instant messaging, e-mailing friends or browsing the internet. CBT can also be improved by using other forms of question types like theory-based and diagrammatic questions to make the test questions more diverse. Furthermore, post-test feedback can also be introduced.

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