

Examining The Relationship Between Electronic Governance And Service Delivery In Federal Polytechnics In South- East Nigeria

EGWU OTU SYLVESTER¹ and Prof. Emma E.O.Chukwuemeka²

*1*Department of Public Administration, Nnamdi Azikiwe University Awka, Nigeria

Email: egwuotusylvester@gmail.com

Email: ee.chukwuemeka@unizik.edu.ng

*2*Department of Public Administration, Nnamdi Azikiwe University, Awka, Nigeria

Abstract: This study investigated the adoption and utilisation of electronic governance and service delivery at federal polytechnics situated in the South-East region of Nigeria between 2013 and 2022. The objective of the study is to determine the relationship between electronic documentation methods and the level of service quality at the selected federal polytechnics. Moreover, it seeks to investigate the relationship between computerized assessment methods and the administration of exams at the federal polytechnic. The study was motivated by two research queries and assumptions. The study used the Cohesive Service Delivery Theory (CSDT) to clarify the relationships between electronic governance and service delivery. The hypothesis suggests that the combined effect of e-government, government resources, and public participation may greatly improve the effectiveness of service delivery. The study population comprised a total of 6550 employees, including both teaching and non-teaching staff members, who were affiliated with the Federal polytechnics located in the South-East region of Nigeria. The sample size of 363 was determined using the statistical techniques established by Krejcie and Morgan in 1970. This study used stratified sampling, which was then followed by simple random sampling. The study used a cross-sectional descriptive survey research methodology. The necessary data for the inquiry were collected using a standardised questionnaire form. The study used the 5-point Likert Scale to assess participants' replies in the structured questionnaire. The research themes were investigated using descriptive statistics, specifically using the mean as a statistical tool. The research hypotheses were assessed using inferential statistics, notably Pearson's Product Moment Correlation. The research found a significant and relevant association between the use of electronic documents and the quality of service in Federal Polytechnics. Moreover, there exists a strong and meaningful correlation between computerised assessment and the administration of examinations at Federal Polytechnics. Based on the results, the researcher recommends that polytechnics should enhance the use of electronic documents in their administration in order to enhance the quality of their services. Furthermore, in order to guarantee optimal administration of exams, it is essential to dedicate resources towards the complete implementation of electronic examinations in these institutions.

Keywords: Electronic governance, E-documentation, Computerized assessment, Service delivery, Service quality, Administration of examination

1. INTRODUCTION

The planet is increasingly merging into a global network of linked communication and information systems. The development of ICT has allowed for better and faster communication, easier data storage, retrieval, and processing, and the sharing and utilisation of information for all types of users, including individuals, groups, businesses, and governments. A number of nations, both rich and poor, have made reforming their public sector a priority in an effort to improve the efficiency and efficacy of service provision. To enhance service delivery to their citizens, governments throughout the globe have instituted several policy frameworks to reorganise and reform the public sector (Adeyeye & Aladesanmi in Nwanisobi & Inienger, 2020).

Due to heightened rivalry and the need for bureaucratic administrations to enhance the quality of their operations and services, a novel method of managing and administering enterprises has arisen, facilitated by the rapid advancement of information and communication technology. "Electronic governance" or "e-government management" are common terms to describe this function. E-Governance, or electronic government, is a two-way communication mechanism that makes use of ICT to make government services available to the public. According to Palava and Sharma in Abasiama and David (2019), e-governance is an essential instrument for enhancing public participation, monitoring government efforts, encouraging transparency and accountability, and allowing the sharing of information across different sectors.

As a contemporary answer to administrative demands and a means to better manage one's own concerns and details, e-governance is an essential part of contemporary living. According to Dima and Mustafa (2019), addressing administrative challenges and quickly achieving organisational excellence necessitates the deployment of electronic governance in institutions.

Several governmental institutions in South East Nigeria have introduced e-governance systems, including Federal Polytechnic, Oko, Akanu Ibiam Federal Polytechnic, Unwana, and Federal Polytechnic Nekede. These polytechnics are focused on providing technical education to students, equipping them with the necessary skills for success in the workforce or self-sufficiency after graduation. To comply with the Federal Polytechnic Acts (Federal Republic of Nigeria, 2006), which outline the mission of the polytechnic system to educate future technologists and technicians, at least 70% of the curriculum must consist of science and technical coursework. Setting up polytechnics in Nigeria is all about educating and preparing people for careers in technical sectors like engineering and technology. These schools provide courses that lead to several certifications, including Advanced Professional Diploma, Higher National Diploma, and National Diploma. The goals, aspirations, and expansion of the country's several economic sectors informed the development of these credentials (Jahun, 2017).

The institutions' day-to-day operations can no longer rely on antiquated ways if they want to accomplish the stated purpose. So, in order to plan and execute government programmes, electronic governance and its components are required. The term "e-governance" describes the effective and efficient use of modern ICTs to improve service supply by facilitating citizen input on service providers and enhancing service delivery overall.

With the goal of making administrative operations more user-friendly, efficient, and cost-effective, e-governance has transformed the educational sector. Adapting to a classroom that is always changing is something that many of them are quite good at. It is an all-inclusive solution for educational institutions that streamlines the management of massive amounts of data, such as enrollment, student information, class schedules, transportation, attendance, library resources, salary, expenses, exams, performance tracking, grades, hostel administration, security, reports, overall administration, staff information, and fees (Krishnaprabu, 2019). With the help of e-governance, both the government and the people may improve the quality of services, streamline the delivery of information, and use various channels to access information more effectively. The goal of electronic governance (e-governance) is to use multimedia and technology to enhance the delivery of services. One definition of "e-governance" is "the practice of delivering public services and information through electronic means" (Pooja, 2022).

The study will make use of electronic inspection methods and electronic documentation techniques. A system that uses electronic media to produce, transport, store, and retrieve information is known as an Electronic Records Management System (ERMS). E-Examinations connect students to the testing system over the web or an intranet, allowing for the administration of tests using mobile phones and personal computers. The process is highly automated, thus there is less human labour involved in administering, scoring, and evaluating the exam.

Service delivery, on the other hand, is all about getting things done. It's about meeting a deadline and achieving a set goal, whether that's performance, production, or productivity. Responsibility is the expectation that one would carry out the tasks assigned to them by those in charge in order to reach a predetermined objective (Chukwuemeka, 2017). Exam administration and service quality are both included in this study's definition of service delivery. In an effort to better serve their constituents, save time and money, and forge closer relationships with them, the federal polytechnics in Southeast Nigeria have adopted electronic governance and all of its numerous features. In order to enhance the quality of education they provide, establish a more streamlined learning environment for their teachers and students, and save expenses, the federal polytechnics in the southeastern region have implemented E-governance. This research examines the relationship between electronic governance and service delivery at Federal Polytechnics in South-East Nigeria from 2013 to 2022.

Statement of Problem

Modern technology has rendered the traditional method of office administration obsolete. In response, more established organisations, such as schools, have begun using e-governance and other modern forms of electronic information management. Companies like this understand how important it is to use cutting-edge information technology developments so they can stay up with the modern world (Abraham & Asuku, 2019). Therefore, it is becoming more difficult to participate in activities inside educational institutions without the use of technology.

Service delivery operational methods at federal polytechnics have evolved over time. Traditional methods of providing services were characterised by a heavy reliance on paperwork and lengthy procedures, and they were also considered antiquated. According to

Arkes (2015) and Amukugo and Peters (2016), this method caused service delivery delays, subpar services, an absence of transparency, and several instances of possible corruption.

Managing exams and generating course outcomes for large-enrollment courses is a major headache for many Nigerian tertiary institutions. Late results, inaccessible results, or incomplete results are common outcomes of these issues, especially in general education courses. Federal Polytechnics in Southeast Nigeria turned to electronic governance in response. Administrators are able to run and administer institutions more efficiently when they utilise this technology. Osakede, Ijimakinwa, Arijeniwa, Adesanya, and Ojo (2017) further note that it alters the manner in which staff members participate in and contribute to the management of institutions. Examining Federal Polytechnics in Nigeria's southeastern area, this study sought to determine if there was a connection between electronic governance and the provision of services.

Objectives of the Study

The main aim of this research is to establish the correlation between electronic governance and service delivery at Federal Polytechnics in South-East Nigeria throughout the period from 2013 to 2022. Specifically, the study aims to achieve the following objectives:

1. Determine the relationship between electronic documentation methods and service quality in Federal Polytechnics in South-East Nigeria.
2. Ascertain the relationship between computerised assessment and administration of examinations in Federal Polytechnics in South-East Nigeria.

Research Questions

The study focused on the following relevant research inquiries:

1. What is the relationship between electronic documentation methods and service quality in Federal Polytechnics in South-East Nigeria?
2. What is the relationship between computerised assessment and administration of examinations in Federal Polytechnics in South-East Nigeria?

Research Hypotheses

The research stated the following null hypotheses:

1. **H₀:** There is no significant relationship between Electronic documentation method and service quality in Federal Polytechnics in South-East Nigeria
2. **H₀:** There is no significant relationship between computerised assessment and administration of examinations in Federal Polytechnics in South-East Nigeria.

2. CONCEPTUAL AND THEORETICAL CLARIFICATIONS

Concept of Electronic Governance

The term "electronic governance," which goes by the acronym "e-governance," describes the trend towards the automation and simplification of governmental activities via the use of technology. It is also seen as the process of transforming governance into a digital format in order to enhance the quality of public services. According to Kabiru, Yusuf, and Hindatu (2022), scholars have different interpretations of the phrase according on how it is used and its relevance.

E-governance simplifies the provision of government services to residents by eliminating the need for actual visits to government offices. Employing this approach may significantly accelerate government responsibilities. E-governance is the use of information and communication technologies (ICTs) to enhance governance in several sectors, including the public sector and government (Rahman & Malik, 2020). Ojo (2019) defines e-governance as the use of information and communication technology by the government to improve openness, accountability, and awareness in the administration of governmental processes.

According to Sunday's definition in Kabiru, Yusuf, and Hindatu (2022), "e-governance" is when government agencies use ICT to increase openness, accountability, and public awareness in the way they handle governmental matters. As a political strategy, it entails informing the public about the government's activities via the use of modern communication means. The shift from a top-

down, sequential model of government operations to one that makes use of the internet is known as "e-governance" (Abasilim and Edet, 2015). This removes the need for citizens to attend government offices during regular business hours in order to get information; instead, they may do so whenever it is most convenient for them.

E-governance encompasses novel leadership approaches, innovative methods of policy formulation and investment decision-making, alternative means of accessing education, novel approaches to public engagement, and innovative strategies for organising and distributing information and services. E-governance has the potential to introduce novel notions of citizenship, including both the requirements and obligations of citizens. The goal is to actively involve, facilitate, and strengthen the individual. According to several writers, E-government is considered to be a significant part of E-governance, albeit not the whole of it (Worku, 2016).

According to Worku (2016), the three primary areas of E-governance reform that have been defined above are:

- i. **Internal**—This pertains to the use of E-governance platforms to establish connections between various government departments and agencies, with the aim of enhancing the efficiency and efficacy of internal operations and procedures. Consequently, the exchange of information between various governmental agencies may occur at a significantly accelerated rate, resulting in reduced processing time, elimination of paperwork bottlenecks, and the eradication of lengthy, bureaucratic, and wasteful approval processes.
- ii. **External** - It provides governments with the opportunity to enhance transparency towards individuals and companies by granting access to a wider array of government-collected and created information. When it comes to governance systems, ICT makes it easier for government agencies, business sectors, and other outside parties to work together.
- iii. The relationship between citizens and their government, as well as between countries, could undergo big changes as a result of E-governance platforms and information and communication technologies. This may affect the functioning of government and the democratic process. By combining data and services from several government agencies, citizens and other interested parties may be able to take advantage of streamlined operations made possible by vertical and horizontal service integration. "Ayoade, 2019" states.

Nwinyokpugi and Bestman (2020) argue that electronic governance involves several dimensions, such as e-participation, e-education, e-registration, e-mobilization, e-service delivery, e-policing, e-feedback, e-taxation, e-debate, e-health, and the examination of public financial information. However, e-government has transformed into a cooperative system where governmental agencies, NGOs, and private enterprises collaborate to achieve a common goal. Lee-Geiller and Lee (2019) state that the main purpose of integrating e-government into governmental processes is to improve good governance. This includes fostering equality, encouraging participation in the democratic process, promoting transparency, and holding all sectors of the country accountable. As ICT, particularly digital technologies like the internet, mobile phones, PCs, and other electronic platforms, advanced, e-government emerged. Government and non-government organisations were able to conduct service transactions more smoothly with the use of these technologies (Bonina, Koskinen, Eaton & Gawer, 2021).

E-governance spans a wide range of themes, as stated by Muhammad (2016), Obodo and Anigbata (2018), Rahman and Malik (2020), and Udunze, Nnaji, and Edokobi (2022).

G2G (Government to Government): Government agencies use information and communication technology (ICT) to maximise the efficiency of data and service interchange across different departments and agencies, as well as to simplify internal administrative operations. Improving the overall efficacy and efficiency of government operations is its principal goal.

G2C (Government to Citizens): Establishing a channel of contact between the state and its inhabitants allows for more effective delivery of public services. This raises the bar for public service excellence by making it more widely available and easier to acquire. The major objective is to enhance the public's interaction with the government.

G2B (Government to Business): E-governance solutions provide smooth interaction between the government and the business sector, which includes producers of products and services. The goal is to streamline bureaucratic processes, optimise efficiency, minimise expenses, and establish a more open and accountable corporate landscape in interactions with the government. The objective is to streamline and strengthen commercial transactions between the government and the private sector by enhancing communication and connection between the two entities.

E-governance maturity stages and its meaning

The e-governance maturity phases, as defined by Savic and mentioned in Muhammad (2016), are:

The value of the e-government service is determined by the quality, usability, and currency of the material in this phase.

Interaction: During this phase, the e-government offers a certain level of online engagement, allowing residents to submit employment applications over the internet.

Phase one, "transactional," entails the government enabling safe online transactions with a high level of authorization.

During the transformative phase, stakeholders have continuous online access to public services or the government.

Benefits of E-governance

Obi, Uzor, and Chukwurah (2020) and Uduze, Nnaji, and Edokobi (2022) have outlined the key benefits of e-governance:

- i. E-governance significantly reduces administrative costs.
- ii. Prompt, Accurate, and Improved Service Delivery
- iii. Makes it easier to get a hold of open, responsible, and participatory government.
- iv. It enhances networking and intergovernmental interactions;
- v. It enhances the provision of services;
- vi. It transforms the administrative culture; and
- vii. It guarantees improved citizen access to information and services.

Electronic Documentation and Record Methods

Effective records administration is a vital aspect of advancing institutions (Yunus et al., 2016). Effective records administration is essential for the survival of any institution (Seniwoliba in Falolo, Capillas, Vergarra & Cerbito, 2022). Keeping track of student information is the major emphasis of records management in educational institutions. According to Nwadei (2018), cited in Falolo, Capillas, Vergarra, and Cerbito (2022), official documents on students, teachers, courses, and extracurricular activities are known as school records. Additionally, it includes educational rules, laws related to education, records of school assembly, and data sourced from government entities, educational organisations, and other sources on the progress and enhancement of the institution (Ololube, 2013).

Electronic Examination (E-exam) Methods

The e-Examination system allows for the administration of tests via the use of electronic devices, including smartphones and computers. Over an internal network or the Internet, these gadgets communicate with the testing system. The process is highly automated, thus there is less human labour involved in administering, scoring, and evaluating the exam. A multiple-choice test is the usual format for the examination.

The term "e-examination" refers to the use of computers and the internet to conduct tests and other forms of assessment remotely. Computer-Based Testing (CBT), once only accessible on PCs or LANs, is now capable of running over the Internet using web browsers as the test interface, all thanks to developments in database and Internet technologies. Users are able to access CBT from any location because to this.

Nitin, Deepak, and Yogesh (2019) state that automating and integrating examination procedures has several tangible benefits. Among these advantages are:

- a. All portions will be able to integrate with the help of ICT, but these sections may keep on working as they were previously.
- b. Students with poor attendance, those who have not paid for their tests, and certain courses will find this procedure easier. There will be a centralised, secure, and reliable database of the applicants participating in the test, ensuring that there are no duplicate entries.
- c. The stakeholders would experience an improvement in the quality of services.
- d. The use of an automated Examination System will result in efficient supervision of examination procedures and reduce instances of fraud. Performing statistical analysis on data allows for the identification of patterns and trends across several levels, facilitating informed strategic decision-making.

Service Delivery

Service delivery is the foundation of all government actions. Services include both the delivery of physical public goods and the intangible services (Vambe, 2013). Public administration include the execution of tasks or responsibilities by a government official, the act of assisting others, the authority to manage or use resources, and the provision of valuable services to the public to suit their

needs (Danjuma, Bello & Danie, 2017). Delivery is the action of creating, executing, or turning over items to the intended receiver, or achieving the promised or anticipated outcomes (Ohiole & Ojo, 2015).

Service delivery refers to the providing of public activities, benefits, or satisfactions. Within the service delivery paradigm, consumers actively engage in decision-making processes, therefore replacing the hierarchical approach that is prevalent in several governmental systems. The primary emphasis is placed on the proficient and streamlined provision of government services (Danjuma, et al 2017). Service delivery refers to the efficient and prompt completion of a service, ensuring it reaches the intended receivers. The supply of high-quality service is widely recognised as the most crucial factor for the sustainability of any organisation (Adeyele, 2017).

Service delivery, as described by Chukwuemeka (2017), refers to the successful completion of assigned tasks by an organisation or its personnel within a certain timeframe, with the aim of achieving predetermined targets in terms of performance, output, or productivity. It entails looking forward to carrying out tasks assigned to you by higher-ups that you have committed to do so that you might reach your objectives. Exam management and service quality are both included in this study's purview of service delivery.

Examination Administration

Examination administration encompasses the whole process of conducting exams and maintaining records of the outcomes. The system includes the distribution of question papers, storage of replies, marketing of responses, reporting of test or exercise outcomes, and the collation, compilation, and calculation of results. Okpowodu, Unegbu, Atsenokhai, and Patani (2022) state that the evaluations aim to accomplish the following, as stated in section 151(iv): i. to provide a precise assessment of students' abilities; ii. to enhance the global competitiveness of Nigerian educational system graduates; iii. to increase the credibility of examinations in Nigeria; iv. to eliminate the issues commonly associated with traditional paper-and-pencil tests (PPT); and v. to enhance learning outcomes. All of the above goals show that the National Policy on Education, Sixth Edition, recognises that the PPT has insurmountable problems (Onu, 2017).

THEORETICAL FRAMEWORK

According to Mbecke (2014), this study is based on CSDT, or Cohesive Service Delivery Theory. Data, voice, and video are the cornerstones of the ICT-based Cohesive Service Delivery Theory. It takes a look at a lot of different possibilities that, when put together, may be successful. This theory proposes that public participation, government resources, and e-government working together might greatly improve the efficiency of service delivery. This theory proposes that insufficient government funding, poor citizen engagement, and an absence of e-government platforms can greatly increase the likelihood of subpar service delivery. The South-East Nigerian Federal Polytechnics are fully on board with e-government and want to revolutionise the public sector by introducing electronic records keeping, examinations, payments, and documentation. The improvement of service delivery efficiency and effectiveness is the primary goal of these efforts. Through the implementation of e-governance, the Federal Polytechnic in South East Nigeria was able to enhance the effectiveness and efficiency of their service delivery and their relationships with the people of the nation.

REVIEW OF EMPIRICAL LITERATURE

Okopowodu, Unegbu, Atsenokhai, and Patani's (2022) study is titled "Electronic Administration on Service Delivery." The objectives of the research were to look at the connection between exam and test management on computers, the effects of computerising admissions procedures on registration exercises, and the use of ICT in routine administration. The Technology Diffusion Theory, which advocates for a management style that is more effective and outcome-focused, served as the theoretical foundation for the research. The survey found that the majority of organisations have successfully implemented and incorporated e-administration into different aspects of their management, leading to a notable improvement in service delivery.

Kuola (2022) examined the impact of automation on manual administrative processes at Abraham Adesanya Polytechnic, located in Ijebu-Igbo, Ogun State. The research used primary data by distributing a well-organized questionnaire consisting of ten (10) questions to the staff members in the Rectory, Registry, Library, and Bursary departments of the Polytechnic. The data obtained from the respondents was analysed using ANOVA. The study revealed that automation decreases the amount of labour and lowers the number of personnel required to perform administrative tasks.

In their study, Monsurat, Adeyemi, Ronke, and Gbolagade (2022) examined the perceived efficacy of computer-based testing (CBT) modality among undergraduate students in Southwestern Nigeria. The research used a descriptive survey approach. The sample size

consisted of 800 undergraduate students who were picked from various faculties at private institutions using the stratified sampling approach. To collect information, the researchers employed a survey known as the CBT Mode of Examination Questionnaire (CBTMEQ). We used ranking, frequency analysis, percentage calculations, and the Relative Significant Index (RSI) to scrutinise the data. The findings indicated that students had favourable experiences with Cognitive Behavioural Therapy (CBT) and had a good perception of the CBT test format. Additionally, it has been shown that Cognitive Behavioural Therapy (CBT) decreases the quantity of printed question sheets and answer booklets, resulting in time and manpower savings for the administration of the exam. Consequently, the research finds that students perceive the use of Computer-Based Testing (CBT) at the university as efficient. Therefore, it suggests the ongoing use of CBT for students and the university management to ensure sufficient supply of ICT infrastructure facilities.

With a focus on the Ministry of Works in Delta State, Justine-Ugo and Unufe (2019) examined how e-governance affected the provision of public services in Nigeria. A descriptive research method assisted the investigation. We came up with two theories and put them to the test. We used a non-parametric Chi-square test to check our hypothesis. Researchers in Delta State discovered that the Ministry of Works' staff performed far better after implementing e-governance, which in turn improved service delivery. Yes, Nigeria is a nation.

3. METHODOLOGY

Research Design

Finding out how federal polytechnics in Southeastern Nigeria's E-governance system relates to service delivery was the goal of this cross-sectional descriptive survey study. Collecting information from several categories at once is the essence of the cross-sectional survey method.

Area of the Study and Population

The area in the southeast of Nigeria was the site of the inquiry. The states of Imo, Ebonyi, Abia, and Anambra make up what is known as the southeastern area of Nigeria. This research looked at three Federal Polytechnics in the southeast of Nigeria: Oko in Anambra State, Akanu in Unwana, Ebonyi State, and Nekede in Imo State.

Members of the academic and non-academic staff from three federal polytechnics in the South East Geopolitical Zone of Nigeria made up the study population. There are a total of 2,358 faculty and staff personnel at the Federal Polytechnic, Oko (FPO), according to data gathered from the chosen schools' Personnel Service Unit (2022) and Staff Establishment Unit (2022). There are 2,184 faculty and staff personnel at Akanu Ibiam Federal Polytechnic Unwana (AIFPU), compared to 1,082 at Federal Polytechnic Nekede (FPN). Consequently, the combined staff population of these institutions amounted to 6,550 individuals. In Table 1 you can see the total number of academic and non-academic staff members from the participating institutions.

Table 3.1: Population of the Study

Institutions	Academic Staff	Non-Academic Staff	Total
Federal Polytechnic, Oko	943	1415	2358
Akanu Ibiam Federal Polytechnic Unwana, Afikpo	876	1308	2184
Federal Polytechnic Nekede, Owerri	828	1180	2008
TOTAL			6,550

Source: Field Survey, 2023

Sample Size Determination and Sampling Techniques

Researchers used the statistical techniques of Krejcie and Morgan's (1970) formula to calculate an appropriate sample size, taking into account the 6,550 people who made up the study's population. Here is the statistical formula that Krejcie and Morgan came up with to get the right sample size:

$$n = \frac{X^2 NP (1 - P)}{e^2 (N - 1) + X^2 P (1 - P)}$$

Where n = Sample size
 X^2 = Chi-Square
 N = Population size
 P = Population Proportion
 e = Margin of error

$$1 = \text{Remain constant.}$$

Finding the sample size is as easy as plugging the numbers into Krejcie and Morgan's statistical method.

With one degree of freedom and a 95% confidence level, the X^2 value comes out at 3.841. Nearly 6,550 people call this place home.

The margin of error (e) is equal to 0.05 with a confidence level of 95%.

The population proportion (P) is equal to 0.5.

With a population size of 6,550 and the following parameters: $X^2 = 3.841$, $e = 0.05$, $P = 0.05$, the following was the formula for the sample size:

$$n = \frac{3.841 \times 6,550 \times 0.5 \times 0.5}{[(0.05)^2 \times (6,550)] + [3.841 \times 0.5 \times 0.5]}$$

$$n = \frac{6,289.6375}{16.375 + 0.96025}$$

$$n = \frac{6,289.8375}{17.33525}$$

$$n = 363$$

Hence, the study's sample size is 363.

Data Collection instrument

A questionnaire was sent to 363 personnel from three federal polytechnics in southeast Nigeria to gather data. This two-part survey is known as the Electronic Governance and Service Delivery Questionnaire (EGSDQ). Part A and Part B. In Section A, we asked for information about the participants' demographics. Electronic Governance and Service Delivery in South-East Nigeria's Federal Polytechnics was the focus of Section B's data collection efforts. The poll uses a five-point Likert scale and closed-ended question formats. The scale assigns a score of 5 for strong agreement (SA), 4 for agreement (A), 3 for dissent (D), 2 for severe disagreement (SD), and 1 for neutrality (N).

Method of Data Analysis

The collected data was examined using descriptive statistics, including frequencies, percentages, and averages. The analysis also included the use of inferential statistics, such as the Product Moment Correlation Coefficient (PPMC). We used descriptive statistics to evaluate the demographic characteristics. The study used the Product Moment Correlation Coefficient in the Statistical Package for the Social Sciences (SPSS) to assess the hypotheses, using a significance threshold of 0.05.

4. DATA PRESENTATION AND ANALYSIS

Following the presentation of the study's statistics in a tabular format, the data obtained from the questionnaire was meticulously examined, elucidated, and evaluated.

Descriptive Analysis of items on Electronic Documentation

Table 2: Mean score and decision on Electronic Documentation N = 356

S/N	Items on Electronic Documentation	$\sum fx$	\bar{X}	Decision
1	Employing an electronic document strategy enhances the ease of retrieving documents when they are needed.	1384	3.88	Agreed
2	It encourages the secure storage of personnel and student records.	1116	3.13	Agreed
3	It makes it easy to generate records for faculty and students in a flash.	10811	3.03	Agreed
4	Employee records may now be located more quickly thanks to electronic documentation.	1349	3.78	Agreed

5	The use of electronic documents has enabled and enhanced the institution's database sharing capabilities.	1303	3.66	Agreed
6	E-documentation expedites service and makes decision-makers more accountable.	1091	3.06	Agreed
Grand Total of Mean Score (X)			3.42	Agreed

Source: Field Survey, 2023

Based on the data shown in table 2, the average scores for all six categories were 3.0 or above. All survey respondents overwhelmingly recognised the many advantages of using electronic documents. Here are few benefits of it: The system's objectives include improving information accessibility (3.88), ensuring secure storage of staff and student records (3.13), facilitating easier record production (3.03), enabling faster retrieval of personnel records (3.78), promoting efficient database sharing (3.66), enhancing accountability of decision-makers, and expediting service delivery (3.06).

Descriptive Analysis of items on Electronic examination methods

Table 3: Mean score and decision on Electronic examination methods N = 356

S/N	Items on Electronic Examination	$\sum fx$	X	Decision
1	E-exams aid in mitigating instances of impersonation.	1319	3.70	Agreed
2	The use of electronic exams reduces the amount of time and human resources required for test administration.	1536	4.31	Agreed
3	E-exams reduce the need for physical copies of question sheets and answer booklets.	1556	4.37	Agreed
4	The use of electronic exams does not effectively mitigate the occurrence of test misconduct.	1026	2.88	Disagreed
5	The E-Exam system is known for its promptness in releasing results and providing immediate feedback.	1245	3.49	Agreed
6	E-exams aid in mitigating instances of impersonation.	1307	3.67	Agreed
Grand Total of Mean Score (X)			3.73	Agreed

Source: Field Survey, 2023

Table 3 displays the most common occurrences and average results on the E-exam. According to the statistical data in the table, it is evident that out of the six items, five (5) had mean scores that were higher than the minimal requirement of 3.0. Participants have reported that E-test decreases incidents of impersonation, saves time and money in delivering the test, minimises the need to print question sheets and answer booklets, enables prompt distribution of results, and provides speedy feedback. Respondents expressed disagreement with the claim that E-test does not contribute to reducing incidents of test cheating.

Descriptive Analysis of items on Service Delivery

Table 4: Mean score and Decision on Service Delivery N = 356

S/N	Items on Service Delivery	$\sum fx$	X	Decision
1	My company prioritises precision in the provision of services.	1194	3.35	Agreed
2	My organisation has made significant advancements in improving the quality of services via the use of electronic documents.	1342	3.76	Agreed
3	The implementation of an electronic documentation system at the institution allows staff members to effectively allocate their time for recording reasons.	972	2.73	Agreed
4	The use of e-governance has enhanced the quality of services and heightened accountability.	1226	3.44	Agreed
5	The organisation provides reliable and tangible services via e-governance.	1200	3.37	Agreed
6	My institution delivered exceptional service that met the public's expectations.	1387	3.89	Agreed
7	The institution has seen a significant decrease in examination misconduct as a result of adopting e-governance.	1091	3.06	Agreed
8	The institution experiences expedited dissemination of findings due to the use of e-governance.	1307	3.67	Agreed
9	The use of computerised examination has led to enhanced examination security inside the institution.	1344	3.77	Agreed

10	The institution's exams now possess enhanced credibility.	1259	3.53	Agreed
Grand Total of Mean Score (X)			3.593	Agreed

Source: Field Survey, 2023

Table 4 presents an evaluation of the service delivery, focusing on the service quality and examination administration. The mean score for each of the ten (10) items in the table was 3.0 or above. Consequently, all the participants affirmed that their organisations exercise great caution in offering services, resulting in a significant improvement in service quality due to the use of electronic documentation. Furthermore, they acknowledged that the use of electronic documentation enhanced service standards and accountability, and that maintaining records in a timely and effective manner was advantageous. Respondents expressed that the e-governance systems of the Polytechnic institution are dependable and efficient. They also noted that the institution consistently delivers excellent services that meet the public's expectations. The respondents have also verified the following statements: the institution has observed a substantial decrease in instances of examination malpractice since the adoption of e-governance; the speed of releasing results has improved; electronic examinations have strengthened test security; and the credibility of the institution's examinations has been significantly enhanced.

Test of Hypotheses

We used the Pearson Product Moment Correlation Coefficient to assess our research hypotheses at a significance level of 0.05.

Hypothesis One

H₀: There is no observable association between the use of Electronic documentation technology and the degree of service quality at Federal Polytechnics situated in the South-East area of Nigeria.

Table 5: Pearson Correlation for Hypothesis one on Electronic Documentation Method (EDM) and Service Quality

		EDM	Service Quality
EDM	Pearson Correlation	1	.957**
	Sig. (2-tailed)		.032
	N	356	356
Service Quality	Pearson Correlation	.957**	1
	Sig. (2-tailed)	.032	
	N	356	356

*. Correlation is significant at the 0.05 level (2-tailed).

a. Listwise N=356

Source: SPSS data output

Table 5 shows that the Pearson Product Moment Correlation Coefficient for hypothesis one is 0.957, indicating a significant positive correlation between the electronic documentation technique and service quality. The calculated probability value of 0.032 is below the significance threshold of 0.05. Therefore, we validate the alternative hypothesis that states a substantial association between the electronic documentation technique and service quality at Federal Polytechnics in South-East Nigeria. Therefore, we reject the null hypothesis.

Hypothesis Two

H₀: There is no significant relationship electronic examination and examination management in Federal Polytechnics in South-East Nigeria.

Table 6: Pearson Correlation for Hypothesis Two on Electronic Examination and Examination Management

		E-Exam	Examination Management
E-Exam	Pearson Correlation	1	.788**
	Sig. (2-tailed)		.012
	N	356	356
Examination Management	Pearson Correlation	.788**	1
	Sig. (2-tailed)	.012	
	N	356	356

*. Correlation is significant at the 0.05 level (2-tailed).

a. Listwise N=356

Source: SPSS data output

An investigation using Pearson correlation on the data from table 6 showed a statistically significant positive link between E-exam and examination management. The correlation coefficient, denoted as $r(356)$, was found to be .788, above the specified significance threshold of 0.05. Furthermore, the p-value of .012 provided further evidence for the importance of the association. The statistical research revealed a significant and substantial correlation between the administration of exams and the use of electronic testing methodologies. Our research indicates a strong association between the implementation of electronic examinations and the management of exams at the Federal Polytechnics in South-East Nigeria. Therefore, we reject the null hypothesis and embrace the alternative hypothesis.

Discussion of the Findings

The primary aim and research inquiry of the study was to ascertain the relationship between electronic documentation techniques and service quality at Federal Polytechnics in South-East Nigeria. The first hypothesis proposes a robust association between the calibre of services provided by Federal Polytechnics in South-East Nigeria and the use of electronic documentation techniques. The research findings supported the observations provided by Kareem & Haseeni (2015), which highlighted that electronic documentation provides easy access to information and improves the accuracy of data. This study specifically examined the implementation of computerised examination systems and their administration in the Federal Polytechnics in South-East Nigeria. Examine the second objective of the investigation and its corresponding test hypothesis. The results of the hypothesis test using the Pearson Product Moment correlation coefficient suggest a robust and statistically significant positive correlation between electronic examination and examination management at Federal Polytechnics in South-East Nigeria. The study's findings supported the conclusions of Catelloa-Roca, Herrera-Joancomarti, and Dorca-Josa (2016), who emphasised the significance of E-exam as a dependable and straightforward approach for performing assessments.

5. CONCLUSION

The data presented here clearly show that federal polytechnics in the South-East area are able to better serve their communities after adopting electronic governance. Therefore, the study's findings indicate that management's acknowledgment of electronic governance's importance is critical for enhancing service delivery in the polytechnic context. If federal polytechnics want to be more competitive on a worldwide scale, provide better service, manage exams more efficiently, save money, manage data more effectively, and improve their reputation, then they must implement e-governance.

6. RECOMMENDATIONS

The following suggestions are based on the study's findings and conclusions: According to the results, federal polytechnics in South-East Nigeria that adopt electronic documentation techniques have a high and statistically significant link with service quality. As a result, the study recommends encouraging the use of electronic documents in the administration of polytechnics in order to raise the standard of service.

Furthermore, the study found that federal polytechnics in the southeastern part of Nigeria's country employ computerised examination procedures while administering exams. According to the report, federal polytechnics in the South-East area of Nigeria should invest in fully adopting computerised examinations if they want to ensure effective administration of exams.

REFERENCES

- Abasiama, G. A., & David, A. T. (2019). Assessing e-governance implementation in Nigeria through the Technology Acceptance Model (TAM) application. *Global Scientific Journal*, 7 (5), 240-248
- Abass, O. A., Olajide, S. A & Babafemi O. S (2017). Development of web-based examination system using open source programming model. *Turkish Online Journal of Distance Education-TOJDE*, 18 (2:3), 30-41
- Adeyele, J.S. (2017). Service delivery in pension industry: Does current practice by service providers guarantees employees' retirement benefits? In A. Nkamnebe, (Ed.). *The Academy of Management Nigeria Proceedings of the 11th Annual Conference: Service Delivery for New Nigeria*: Nnamdi Azikiwe University, Awka Nigeria. SCOA Heritage Publications, 17, 135-145
- Amukugo, K. & Peters, A. (2016). Citizen-centric e-government services in Namibia: Myth or reality? In *Proceedings of the First African Conference on Human Capital Interaction*, 193-197. ACM.
- Arkes, H. (2015). *Bureaucracy, the marshall plan and the national interest*. Princeton: University Press.
- Ayoade, O. B. (2017). Impact of information and communication technology (ICT) on the public service delivery in three local government councils in Oyo township , Oyo state ,Nigeria proceeding of 4th government university conference on e-government in Nigeria (CUCEN,2017) 15-38
- Bonina, C., Koskinen, K., Eaton, B., & Gawer, A. (2021). Digital platforms for development: Foundations and research agenda. *Information Systems Journal*, 31(6), 869-902.
- Dima, W & Mustafa, J (2019).The role of universities' electronic management in achieving organizational excellence: Example of Al Hussein Bin Talal University. *World Journal of Education*, 9 (3), 53-66, doi:10.5430/wje.v9n3p53 URL: <https://doi.org/10.5430/wje.v9n3p53>
- Danjuma, I., Bello, V. D., & Danie, M. (2017). Enhancing quality service delivery for effective public sector performance: Agenda for a new Nigeria. In A. Nkamnebe (Ed.). *The Academy of Management Nigeria Proceedings of the 11th Annual Conference: Service delivery for new Nigeria*: Nnamdi Azikiwe University, Awka Nigeria. SCOA Heritage Publications, 16, 128-13
- Falolo, V.M., Capillas, K.T., Vergarra, N. A. & Cerbito, A.F (2022). Student registration and records management services towards digitization. *International Journal of Educational Management and Development Studies*, 3(1), 149-165. DOI: <https://doi.org/10.53378/352867>
- Jahun, I. S. (2017). The roles and contributions of Nigerian polytechnics in the development of surveying and geo-informatics education; issues, prospects and challenges: a global perspectives. A paper presented at the FIG Working Week 2017, May 29 - June 2, 2017 in Helsinki, Finland. Available at: https://www.fig.net/resources/proceedings/fig_proceedings/fig2017/papers/ts08g/TS08G_jahun_8584.pdf
- Justine-Ugo, O & Unufe, E. J (2019). An examination of the effect of e-governance on public service delivery in Nigeria: A study of Delta State Ministry of works. *Gombe Journal of Administration and Management (GJAM)*, 2 (3), 168-179
- Kabiru, D., Yusuf, A. Y & Hindatu, M. Y. (2022). Nexus between e-governance and service delivery in Nigeria: (Assessing the role of stakeholders). *International Journal of Management Studies and Social Science Research*
- Krishnaprabu, S (2019). E-governance in education sector. *International Journal of Recent Technology and Engineering (IJRTE)*, 8 (IC-2), 958-961
- Kuola, A. J (2022). Automation as a panacea to manual administration of polytechnics in Ogun State, Nigeria. (A Study of Abraham Adesanya Polytechnic, Ijebu-Igbo). *Fane-Fane International Multidisciplinary Journal*, 6 (2), 54-65
- Lee-Geiller, S., & Lee, T. D. (2019). Using government websites to enhance democratic E-governance: A conceptual model for evaluation. *Government Information Quarterly*, 36 (2), 208-225.

- Monsurat, A. S., Adeyemi, O. B., Ronke, O & Gbolagade, R. O (2022) Perceived effectiveness of Computer – Based Test (CBT) mode of examination among undergraduate students in South-Western Nigeria. *International Journal of Education, Library and Information Communication Technology*, 1(1), 1-7
- Muhammad, L (2016). *Effect of e-governance on students' management in Ahmadu Bello University*. An M.Sc Dissertation submitted to the School of Postgraduate Studies, Ahmadu Bello University, Zaria
- Nwanisobi, B.C & Inienger, C. C. (2020). E-Governance and service delivery in Independent National Electoral Commission (INEC), Abuja. *International Journal of Recent Research in Commerce Economics and Management (IJRRCEM)*, 7 (2), (51-65)
- Nwinyokpugi, P. N., & Bestman, N. (2020). The e-Governance application: Improving the administrative efficiency of the public sector in Rivers State, Nigeria. *GPH-International Journal of Computer Science and Engineering*, 3(02), 06-18.
- Obi H. O., Uzor, O. A., & Chukwurah, D. C (2020). E-governance and service delivery in the Nigeria Civil Service. *World Journal of Innovative Research (WJIR)*, 9 (3), 49-59
- Obodo, N. A & Anigbata, D. O (2018). Challenges of implementing electronic governance in the public sector organization in Nigeria. *International Journal of Applied Economics, Finance and Accounting*, 2, (1), 30-35. DOI: 10.33094/8.2017.2018.21.30.35
- Ohiole, O., K & Ojo, I.S. (2015). Improving public service delivery in Nigeria: A paradigm shift between traditional public administration and a new public management. *Journal of Policy and Development Studies* 9, (2), 157-385
- Okpowodu, K., Unegbu, P. O., Atsenokhai, B & Patani, S. J (2022) Electronic administration on service delivery. *International Journal of Marketing, Management and Research*, 8 (2), 73-82
- Ololube, N. (2013). *Educational management, planning and supervision: Model for effective implementation*, Owerri: Spring Field Publishers
- Pooja, A. (2022). A study of the concept of e-governance and its impact on the higher education system in India. *International Journal of Research Publication and Reviews*, Vol 3, no 1, pp 64-68
- Rahman A & Malik AR (2020). Electronic governance in Bangladesh: challenges and prospects. *International Journal of Natural and Social Sciences*, 7(4): 56-65. DOI: 10.5281/zenodo.4362126
- Udunze, U.M., Nnaji, I & Edokobi, T. D (2022). Assessing the effects of e-governance and its application by the Independent National Electoral Commission during the 2019 General Election in Nigeria. *KIU Journal of Social Sciences*, 8(2): 53- 62
- Vambe, T. J. (2013). Improving public service delivery in Nigeria through ethics, integrity and professionalism. *Research Journal of Social Science and Management*, 3(4) 1571-2251
- Worku, K. (2016). *The Role of E-government in Enhancing Performances of Public Service Qualities and Promoting Good Governance: With Special Reference of Document Authentication and Registration Agency*. Master's Degree Thesis in Public Management and Policy (Policy Studies Specialization) in the Department of Public Administration and Development Management College of Business and Economics Addis Ababa University.
- Yunus, A., Bunawan, A.-A., Ahmad Kamal, J., Kadir, M., 7 Hashim, H. (2016, November 21). *Explaining the Importance: Proper Academic Records Management*.