



Paperless Office Management And Its Effects On The Performance Of Non-Teaching Staff Of State-Owned Tertiary Institutions In Enugu State, Nigeria

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Abstract

This study examined paperless office management and its effects on the performance of non-teaching staff of state-owned tertiary institutions in Enugu State. The specific objectives include, to investigate the effect of electronic document management on operational efficiency in state-owned tertiary institutions in Enugu State and to determine the effect of workflow automation on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria. A survey research design was used. The population of the study was two thousand five hundred and eighty (2580). Three hundred and forty six (154) sample size was drawn using Taro-Yamani formula. Simple Random sampling technique was used. It was found that electronic documentation management had a positive effect on operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria (t -value = 5.991, cal value = 31.69) and workflow automation had a positive effect on record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria (t -value = 5.991, cal value = 40.64). The study concluded that paperless office management had positive effect on performance of State-owned tertiary institutions in Enugu State, Nigeria. The study recommended clearly that government and regulatory bodies should provide support and incentives such as funding, technical assistance, and policy guidelines for state-owned tertiary institutions to adopt electronic documentation management. This support can help address the challenges and limitations faced by institutions in adopting digital solutions and ensure that they can fully realize the benefits of paperless office management.

Keywords: *digital solutions, electronic document, office management, workflow automation.*

Introduction

1.1 Background to the Study

The performance of state-owned tertiary institutions in Nigeria is a complex and multifaceted concept that encompasses various aspects of their operations. These institutions play a crucial role in the country's development, and their performance has a direct impact on the quality of education, research, and innovation in Nigeria (Sholagbade, 2018). State-owned tertiary institutions in Nigeria are expected to provide high-quality education, conduct innovative research, and produce graduates who can compete globally, they should also have effective leadership, sound financial management, and adequate infrastructure to support teaching, learning, and research. The performance of these institutions are influenced by various factors, including funding, governance, leadership, and infrastructure (Oliver, and Anikezie, 2022). They face numerous

challenges, including inadequate funding, outdated curriculum, inadequate infrastructure, and brain drain, which can impact their abilities to deliver quality education and research (Ohakwe, 2019).

In the dynamic landscape of higher education, the crucial role of non-academic staff in supporting the core functions of universities cannot be overstated. These individuals, encompassing administrative, technical, and support roles, are instrumental in ensuring the smooth operation and overall effectiveness of academic institutions (Ogunleye & Akinola, 2024). Where competition for managing records, handling correspondence and efficient service delivery is intensifying, the performance of non-teaching staff becomes a critical determinant of institutional success.

Despite these challenges, state-owned tertiary institutions in Nigeria have made significant contributions to the country's development, producing notable alumni and innovative research that has impacted various sectors of the economy. However, there is still a need for improvement, and assessing their performance are essential to identify areas of strength and weakness, inform policy decisions, and enhance their contribution to Nigeria's development. The performance of these institutions also depends on their abilities to attract and retain talented students and staff, foster partnerships with industry and community, and respond to the needs of the state and nation (Luthando, et al., 2020). Meanwhile, office management provides administrative support, resource allocation policy implementation, communication and data management functions to tertiary institution.

Office management is a vital aspect of organizational operations, encompassing various administrative and support functions (Ngulube, 2022). It is a dynamic and challenging field, influenced by cultural, economic, and technological factors. Office management involves coordinating and supervising tasks, resources, and personnel to achieve organizational goals and objectives (Ngulube, 2021). Effective office management is crucial for ensuring efficiency, productivity, and quality service delivery in various sectors, including education, healthcare, government, and private enterprises (Yuba, 2023). It requires strong leadership, communication, and problem-solving skills, as well as the ability to adapt to changing circumstances and technologies.

In Nigeria, the prevalent office management practice is paper based office management. Paper management faces the challenge of space constraints where paper documents require physical storage space which can be limited and expensive. Paper based office management has the challenge of document organization. Paper documents can be difficult to organize, categorise and retrieve. Equally, the practice of paper based office management faces the challenge of document damage or loss. Paper document can be damaged, loss or destroyed due to natural disasters, accidents or international actions. It has been generally argued that paper based office management is time consuming and labour intensive (Ngulube, 2022).

A paperless system refers to the adoption of digital technologies to manage and store information, reducing the reliance on physical paper documents. This shift towards digitalization aims to enhance efficiency, transparency, and accountability in various sectors, including government, education, healthcare, and private enterprises (Luthando, et al., 2020). The adoption of paperless systems in tertiary institutions in Nigeria is a gradual process aimed at transforming administrative, academic, and research processes (Abbot, 2020). This digital transformation seeks to enhance the efficiency, effectiveness, and quality of services in higher education (Oliver, Chapman, and French, 2021). The innovation of paperless management in state-owned institutions is a significant development aimed at transforming the way these institutions operate. Paperless management involves the use of digital technologies to manage and store information, reducing the reliance on physical paper documents (Rogers, 2018).

The advent of technology has led to a shift from traditional paper-based systems to digital platforms in various organizations, including educational institutions. Paperless office management involves the use of digital tools to manage and store documents, reducing the need for physical paper. State-owned tertiary institutions in Enugu State, are grappling with the challenges of manual record-keeping, data loss, and inefficiencies. The adoption of paperless office management is expected to improve the performance of these institutions. This study therefore examined effect of paperless office management on the performance of state owned tertiary institution in Enugu State, Nigeria.

1.2 Statement of the Problem

The importance of office management documentation and record management in Nigeria is hindered by various challenges, including inadequate infrastructure, limited digital literacy, and poor attitudes towards documentation, leading to inefficiencies, data loss, and difficulties in accessing information, which ultimately undermine transparency, accountability, and decision-making in various sectors.

However, the current situation in these institutions suggests that the adoption of paperless office management systems is either lacking or ineffective. Non-teaching staff may still be relying heavily on manual processes, paperwork, and physical file storage, leading to inefficiencies and decreased productivity. This could be hindering the overall performance of the institutions and affecting the moral of staff.

The possible causes of this problem may include inadequate training and support for staff, insufficient infrastructure and technology, resistance to change and lack of clear policies and guidelines on paperless office management. Additionally, limited resources, including funding and IT expertise, may also be hindering the effective implementation of paperless office management systems, ultimately the performance of non-teaching staff.

1.3 Objectives of the Study

The broad objective of the study was to examine paperless office management and its effects on the performance of non-teaching staff of state-owned tertiary institution in Enugu State, Nigeria. While the specific objectives are:

1. To investigate the effect of electronic document management on operational efficiency in state-owned tertiary institutions in Enugu State, Nigeria.
2. To determine the effect of workflow automation on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria.

1.4 Research Questions

1. How does electronic document management affect operational efficiency in state-owned tertiary institutions in Enugu State, Nigeria?
2. What is the effect of workflow automation on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria?

1.5 Statement of Hypotheses

H₀₁: Electronic document management does not have positive effect on operational efficiency in state-owned tertiary institutions in Enugu State, Nigeria.

H₀₂: Workflow automation does not have positive effect on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria.

1.6 Significance of the Study

The study provides insights into the benefits of paperless office management in improving the performance of state-owned tertiary institutions in Enugu State, Nigeria.

The study informs policymakers and educational administrators about the need to adopt paperless office management in state-owned tertiary institutions.

The findings of this research contribute useful knowledge to the existing literature on the effect of paperless office management on the performance of State owned tertiary institutions in Enugu State.

The study is of theoretical significance because in adopting TAT non-teaching staff already had the convention that paperless office management is more efficient compared of paperless office management. The theory therefore advocates that management of tertiary institutions should create enabling environment for its functionality.

1.7 Scope of the Study

The study covered effect of paperless office management on the performance of non-teaching staff of state owned tertiary institutions in Enugu State, Nigeria. The study also covered only non-teaching staff of Enugu State University of Technology (ESUT) located at Ebeano City, Agbani. Institute of Management and Technology (IMT) located in the Enugu metropolis, Enugu State College of Education Technical (ESCET) Enugu and Enugu State Polytechnic Iwollo located in Iwollo. The study covered dependent and independent variables. Paperless office management was independent variable decomposed into electronic document management and workflow automation while performance was dependent variable decomposed into operational efficiency and record retrieval time. The period covered was 2015 to 2024.

2.1 Conceptual Review

2.1.1 Paperless

Paperless office is a system created to manage administrative processes. The idea is to minimize paper use and digitalise documents to reduce environmental impact, save costs, increase productivity, and improve space efficiency (Briscoe, 2022).

2.1.2 Office Management

Office management refers to the administration and coordination of the day-to-day activities and operations of an office environment (Vakkari, and Granin, 2022). This includes managing resources, supervising staff, and ensuring the smooth flow of work processes to achieve organizational goals and objectives (Akpomi, 2020). Effective office management is crucial for increasing productivity, efficiency, and employee morale, and ultimately contributing to the success of the organization. Office management is the backbone of an organization, responsible for ensuring the smooth operation of day-to-day activities, managing resources, and supervising staff to achieve organizational goals (Akpomi, and Ordu, 2016).

2.1.3 Paperless Office Management

It involves coordinating administrative tasks, maintaining office facilities, managing records, and implementing policies and procedures. Office managers oversee the entire office operations, from managing supplies and equipment to ensuring effective communication and workflow (Carr, and Smeltzer, 2023; Edwin, 2018; Ezoem, 2019; Haghirian, Madlberger, and Tanuskova, 2018; Lynda, 2023). Concept of paperless focuses on reducing paper usage rather than eliminating it, as it is nearly impossible to eliminate paper usage in an office. Implementing a paperless office is widely understood as replacing paper documents in traditional offices with electronic formats such as Docs and PDFs.

2.1.4 Electronic Document Management

Electronic records otherwise called digital document are the recorded information, documents or data in electronic or digital format that provide evidence of policies, transactions and activities carried out in school organizations, Osakwe (2024). Digital document may be categorized as text files (files produced by word processing programmes or by other software); data files(computer process files that store numeric and sometimes textual information as quantitative values so that numbers can be manipulated using arithmetic processes); analogue audio and visual records (sound documents and images to be played back);disaggregated data (information collected through remote sensing systems);databases (structured collection of interrelated data); machine instruction sets(records created by the action of intelligent machines); image files (records containing computer processing images that generally exist as hard copy before being converted into images)

and electronic documents (files consisting of numeric data, images or sound recorded electronically in one uniform structure) (Osakwe, 2024).

2.1.5 Workflow Automation

Workflow Automation is an IT process automation platform that allows you to model, automate, measure, and continuously improve run books and processes. Workflow Automation allows you to: Define automated IT processes, using your documented IT processes and run books as the foundation for automation Automatically execute process steps on behalf of personnel Coordinate work between different IT functions Integrating with other enterprise products*, Workflow Automation retrieves normalized information from your operations management systems to provide a cohesive “big picture” view of your IT operation processes. (Iwhiwhu, 2015; Omenyi, 2017; Subari et al., 2020; Noor et al., 2020; Kosemani, and Okorosaye-Orubite, 2018; Abdulrahman, and Ogbondah, 2020; Fafunwa, 2024; Asogwa, 2024; Egwunyenga, 2020; Fasasi, 2024).

2.1.6 Performance

The performance of an organization refers to its ability to achieve its goals, objectives, and mission (Sholagbade, 2018). It encompasses various aspects, including productivity, efficiency, effectiveness, quality, safety, and reliability. An organization's performance is influenced by its leadership, strategy, culture, resources, and processes (Nwaokwa, and Okoli, 2022).

2.1.7 Operational Efficiency

Operational efficiency can be defined as the ratio between outputs gained from the business and an input to run a business operation. When improving operation efficiency, the output to input ratio improves. Operation efficiency is often achieved by streamlining a company’s core process in order to more effectively respond to continually changing market force in a cost-effective manner (University of Melbourne, 2021). Operational efficiency underpins the companies’ most basic strategic goals. Improving customer satisfaction and increasing shareholder value both depend on achieving operational efficiency. Therefore, improving operational efficiency is one of the companies’ top objectives (Djoka & Conneen, 2022; Sulyman and Achor, 2022).

2.1.8 Record Retrieval Time

Record retrieval time refers to the speed and efficiency of accessing stored information, a crucial part of records management, varying significantly between paper (often slower) and electronic systems (faster), with goals of minimizing time (e.g., <10 mins for patient records) to ensure administrative effectiveness, support decision-making, and meet legal/operational needs, involving policies, technology, and standardized procedures for management and access (Janssen, 2017; Tidd & Bessant, 2020; Du Plessis, 2022).

2.1.9 Conceptual Framework

Different empirical evidences suggested paperless office management and performance of non-teaching in so many ways. Hence, this study used paperless office management as independent variable proxied by electronic document management and workflow automation while performance as dependent variable proxied by operational efficiency and record retrieval time. These showed below as follow:

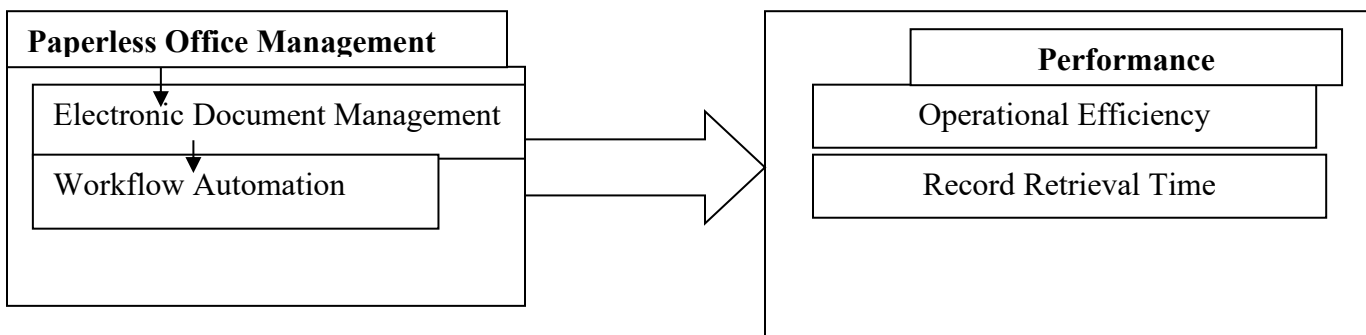


Figure 2.1: Model of Paperless Office Management and Performance

Source: Adapted from Subari, A., Manan, S., & Ariyanto, E. (2020). Design of E-office system in vocational school Diponegoro University using code igniter framework. IOP Conference Series: Materials Science and Engineering, 801(1), 012141

2.2 Theoretical Framework

The study adopted Technology acceptance Model as theoretical framework.

2.2.1 Technology Acceptance Model

Davis, Bagozzi, and Warshaw (1989) propose the Technology Acceptance Theory (TAT) to explain the conceptual model that users' intention or acceptance degree towards information system or new technology. TAT is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using a particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system (Davis et al., 1989; Gefen et al., 2003).

2.3 Empirical Review

Electronic Document Management and Operational Efficiency

Nziadam and Amadioha (2025) examined electronic document and national development in Nigeria. The paper explored some of the possible challenges impending the realization of digital document in Nigeria such as quality teachers, learners and environment, arguing that access to quality education definitely would ensure societal balance, promote accountability, stability and prevent resorting to anarchy. In this paper concept like quality education and national development were conceptualized.

Workflow Automation and Record Retrieval Time

Anyahie, Set al (2025) studied school choice determinants and cloud storage among public senior secondary school students in Rivers State in Nigeria. The study adopted a correlational design. The population comprised (71,960) students in the three hundred and eleven (311) public senior secondary schools in Rivers State. The sample was 362 students determined using the multi stage sampling technique. The research questions and hypothesis were answered and tested using Pearson Product Moment Correlation (PPMC) statistics. The findings revealed that there is a strong relationship between school choice determinants (school curriculum offerings, cocurricular activities, school location) and cloud storage among public senior secondary school students in Rivers State.

Hasan, Tuba, Gül, and Gökten (2024) examined the paperless technologies in Universities: examination in terms of unified Theory of acceptance and use of technology (UTAUT). This study aims to determine the factors affecting the use of paperless technologies by university office staff and academicians. The study sample comprised 726 academics and administrative staff from 10 public and 3 foundation higher education institutions in Turkey. Care was taken to ensure that the selected universities had switched to paperless processes or that work was largely conducted through digital tools. When the path analysis results were examined, it was determined that performance expectation, effort expectation, and social impact positively affected the intention to use paperless technologies. In addition, intent to use has a mediating role on the effect of social influence, effort expectation, and performance expectation on actual usage of paperless technologies.

Anikeze, Abonyi and Okafor (2023) examined the office information technologies and performance of tertiary institutions in southeast Nigeria. The study examined office information technologies and performance of Tertiary institutions in Southeast Nigeria. Specifically, the study sought to: investigate the influence of printer on employee job performance of tertiary institutions and ascertain the influence of photocopy machine on quality job delivery of tertiary institutions. Research design was descriptive survey research. Sample size of 378

respondents were drawn from 5,503 academic staff of three selected tertiary institutions in Southeast Nigeria namely University of Nigeria Nsukka, Nnamdi Azikiwe University Awka, Michael Okpara University of Agriculture Umudike and Ebonyi State University Abakiliki. The hypotheses were tested with regression analysis comprising student-t statistics. The empirical results show printer has significant influence on employee job performance of tertiary institutions in Southeast in Nigeria (t-statistics (9.292) > P-value (0.000) and photocopy machine has significant influence on quality job delivery of tertiary institutions in Southeast in Nigeria (t-statistics (6.312) > P-value (0.000).

Onoja (2020) conducted a research on office automation and secretarial productivity in Rivers State University. This study investigated Office Automation and Secretarial Productivity in Rivers State. The objective was to examine the extent to which office automation affects the productivity of secretaries. Forty-five secretaries were selected from thirty-eight departments and seven faculties in the Rivers State University. The study adopted four research questions and four null hypotheses. Copies of the Questionnaire were administered to the secretaries. Mean and Standard Deviation were used to analyze the research questions while Pearson Product Moment Coefficient was used to test the hypotheses. Findings revealed that office automation equipment has positive and significant effects on the productivity of secretaries in the university. From the correlation coefficient, the study concluded that office automation affects productivity to a great extent.

Edho, and Ogini (2018). Carry out empirical study towards a “paperless” higher education system in Nigeria: concept, challenges and prospects. This study attempted to seek the possibility of a paperless Higher Education system in Nigeria. It x-rayed the current system of information processing, dissemination and final storage in our school system. With the outcry of poor management of records, ineffective storage, ever increasing school population. The study sought to unravel the concept, challenges and prospects of the paperless school system as a means to solving the current challenges of record keeping in our school system. Technology adoption of information system management in the system was seen as a means to an end of the ineffective management of records, poor storage and retrieval, slow rate of delivery and low consumption of the intended message as a challenge affecting the current record system in our Higher Education institutions. The study established that the paperless system is a 21st century trend and should be embraced by our higher system of knowledge, the adoption of technology in information processing will make information faster, cheaper, increased audience, better retrieval of stored messages.

Luthando, et al (2016) assessed the influence of a paperless office environment on the sustainability of the Master of the High Court in Cape Town. Around the globe, more emphasis is being placed on environmental sustainability and, as such, many organizations have started to embrace the idea of a paperless working environment, although it is still largely regarded as an idealistic dream. For this research study, the influence of a paperless working environment on the Master of the High Court (Master’s Office), in Cape Town, was investigated through the introduction of its Paperless Estate Administration System (PEAS) and its Paperless Estate Administration System for Trusts (PEAST). The main objective of this research study is to determine the influence of the PEAS and the PEAST on the holistic sustainability of the Master’s Office. A mixed methods approach was followed whereby both quantitative data and qualitative data were collected through means of disseminating questionnaires to employees based at the Master’s Office in Cape Town. Based on the findings made, the PEAS and the PEAST had a positive influence on the sustainability of the Master’s Office in Cape Town, as the time spent on and the expenditure incurred on administrative tasks decreased significantly. Notwithstanding the latter, it was found that the PEAS and the PEAST can still be further enhanced to optimize the sustainability of the Master’s Office in Cape Town.

Benjamin. (2022). conducted a research on politics and the establishment of Public Universities in Nigeria: Implications for University Education. This paper examines the role politics has played in establishment of universities in Nigeria from the colonial era up to 2010 and the attendant implications of this for the development of university education. The result of the study, through critical analysis, reveals that politics contributed positively in the emergence of the premier university but was wrongly deployed in the creation of more universities. It also discovers that the political motives or interests that informed the expansion of

universities created a yawning gap between the real needs in university education and the political expediency for the establishment of universities.

Olisaemeka, (2022) examined the relationship between computer technology usage and teaching efficiency in tertiary educational institutions in Lagos state, Nigeria. Specifically, the study sought to ascertain how lecturers perceive their rate and mode of computer usage, enhancing and identify inhibiting factors to computer usage perceptions in teaching efficiency. The target population for the study included all the tertiary institutions in Lagos State. The sample size of 438 (15%) out of the 2,919 lecturers in the 13 out of the 14 tertiary institutions in Lagos State. The methods of data analysis were Pearson's Product Moment Correlation and T-test statistics. The study's major findings include: 76% of the lecturers in Lagos State were inexperienced in computer usage, there was low rate of computer technology (CT) use; 77% of the sample depended on technical assistants to operate computers; poor technical support, epileptic power supply, lack of facilities and lack of CT training/skills ranks high among hindering factors..

Aliyu, (2021) investigated the impact of information technology on organizational performance of Nigeria Immigration Service (NIS) Kebbi State Command. Specifically, the study sought to examine the extent NIS Kebbi State Command use Information Technology and ascertain the impact of information technology on performance of Nigeria Immigration Service. The sample size of 214 respondents was drawn from 465 staff of NIS Kebbi State Command. The method of data analysis was simple percentage, mean and regression analysis. The empirical results revealed that there is a positive relationship between the information technology and organizational performance; it also shows that information technology has significant effect on organizational performance. The study revealed that there are IT devices available for the personnel of NIS Kebbi State Command to discharge their statutory duties efficiently. The study revealed that the use of IT contributed to increase in revenue generation, helped provide the up-to-date technology in computers, and improved the data collection process and reporting by the NIS personnel.

Edeh, Sharma, Nwafor, Fyनेface, Sen, Edeh, (2020) examined the impact of emerging technologies on the job performance of educators in selected tertiary institutions in Nigeria. Specifically, the study also examines the various barriers that impede the use of emerging technologies by educators in tertiary institutions. Data were collected through structured questionnaires administered to 152 educators selected from five different tertiary institutions in Nigeria. The collected data were later analyzed using STATA/regression Analysis. The result shows that there was a significant improvement on the job performances of educators due to their usage of various emerging technologies.

Onu and Amadi, (2020) investigated influence of modern technology on office and information management profession in Ken Saro Wiwa Polytechnic, Rivers State. The specific objectives of the study were to; ascertain ways modern technology influences opportunity for training and retraining programmes of office and information management and determine ways modern technology influences management productivity of office and information management. The sample size of 106 respondents was taken from 218 staff (127 academic and 91 administrative staff) of organization under study. Data obtained was analyzed using the mean (\bar{X}) and Z-test. The result showed that academic and administrative staff on modern technology influences opportunity for training and retraining programmes and management productivity of office and information management in Ken Saro Wiwa Polytechnic, Rivers State.

Table 2.3.1 Summary of Empirical Review

S/N	Author year	Area of Study	Title	Methodology	Findings
1	Luthando, Bongani, Nkosinathi, Sipiwo, Shairn and Juan (2016)	Cape Town	the influence of a paperless office environment on the sustainability of the	A mixed methods approach was followed	Based on the findings made, the PEAS and the PEAST had a positive influence on the sustainability of the

			Master of the High Court	whereby both quantitative data and qualitative data adopted	Master's Office in Cape Town
2	Edho and Ogini (2018)	Nigeria	Paperless higher education system in Nigeria: concept, challenges and prospects	Research design was descriptive survey research	The study sought to unravel the concept, challenges and prospects of the paperless school system as a means to solving the current challenges of record keeping in our school system.
3	Onoja (2020)	Nigeria	Office automation and secretarial productivity	Mean and Standard Deviation were used to analyze	The reality of a paperless school system can be achieved sooner than its application in the school system with committed efforts by management, decision makers/implementation personnel and the general school system.
4	Edeh, Sharma, Nwafor, Fyeface, Sen, Edeh, (2020)	Nigeria	the impact of emerging technologies on the job performance of educators in selected tertiary institutions	Data were collected through structured questionnaires	The result shows that there was a significant improvement on the job performances of educators due to their usage of various emerging technologies.
5	Onu and Amadi, (2020)	Nigeria	investigated influence of modern technology on office and information management profession	Data obtained was analyzed using the mean (\bar{X}) and Z-test.	The result showed that academic and administrative staff on modern technology influences opportunity for training and retraining programmes and management productivity of office and information management in Ken Saro Wiwa Polytechnic, Rivers State.

6	Aliyu, (2021)	Nigeria	investigated the impact of information technology on organizational performance of Nigeria Immigration Service (NIS)	The method of data analysis was simple percentage, mean and regression analysis.	The empirical results revealed that there is a positive relationship between the information technology and organizational performance
7	Benjamin (2022)	Nigeria.	politics and the establishment of Public Universities in Nigeria: Implications for University Education	Research design was descriptive survey research	Based on the findings, and as strategies or measures for new frontiers in university education in Nigeria
8	Olisaemeka, (2022)	Nigeria	the relationship between computer technology usage and teaching efficiency in tertiary educational institutions	The methods of data analysis were Pearson's Product Moment Correlation and T-test statistics	The study's major findings include: 76% of the lecturers in Lagos State were inexperienced in computer usage, there was low rate of computer technology (CT) use
9	Anikeze, Abonyi and Okafor (2023)	Nigeria	. Examine the office information technologies and performance of tertiary institutions	Research design was descriptive survey research	The empirical results show printer has significant influence on employee job performance of tertiary institutions in Southeast in Nigeria (t-statistics (9.292) > P-value (0.000)
10	Hasan, Tuba, Gül, and Gökten (2024)	Turkey	Paperless technologies in Universities: examination in terms of unified Theory of acceptance and use of technology (UTAUT)	Research design was descriptive survey research	When the path analysis results were examined, it was determined that performance expectation, effort expectation, and social impact positively affected the intention to use paperless technologies.

Source: Researcher Compilation, 2025

2.4 Gap in Empirical Review

This study addresses paperless office management provides useful insights into its role in enhancing organizational performance; however, these studies exhibit notable limitations in terms of context, time coverage, and variable specification. For instance, Edho and Ogini (2018) examined paperless office practices

within a broad Nigerian context without isolating state-owned tertiary institutions, thereby limiting the applicability of their findings to specific institutional settings. Similarly, Luthando et al. (2016) focused on the Master's Office in Cape Town, South Africa, an environment that differs structurally and operationally from Nigerian public tertiary institutions.

Meanwhile, the majority of these studies were conducted between 2016 and 2018, which restricts their relevance in capturing recent advancements in electronic document management and workflow automation, particularly in the context of rapid digital transformation.

Consequently, this study addresses these identified gaps by focusing on state-owned tertiary institutions in Enugu State, Nigeria, incorporating more recent data, and disaggregating paperless office management into electronic document management and workflow automation in order to examine their individual effects on operational efficiency and record retrieval time.

Methodology

3.1 Research Design

Descriptive survey research was adopted in this study.

3.2 Area of the Study

Study Area was Enugu State in the South East geopolitical zone of Nigeria.

3.3 Sources of Data Collection

Primary and secondary sources of data were used in this work

3.4 Population of the Study

The population of the study was drawn from non-academic staff of State owned tertiary institutions in Enugu State of Nigeria, namely Enugu State University of Science and Technology (ESUT) located at Agbani, Institute of Management and Technology (IMT) located at Independence Layout, Enugu State College of Education Technical (ESCET), located at GRA and Enugu State Polytechnic Iwollo (ESP). Which amounted to 2580.

Table 3.1 Population Distribution of Non-Teaching Staff

	NON-ACADEMIC STAFF		TOTAL
	Junior Staff	Senior Staff	
Enugu State University of Science and Technology (ESUT)	510	250	760
Institute of Management and Technology (IMT)	700	150	850
Enugu State College of Education Technical (ESCET)	500	120	620
Enugu State Polytechnic Iwollo (ESP)	250	100	350
Total	1960	620	2580

Source: Field Survey, 2025

3.5 Determination of Sample Size

The mathematical sampling approach was based on Freund and William's statistic formula as quoted by (Uzoagulu, 2009) that were stated below as follow;

<https://caritasuniversityjournals.org/cijpabm/>

$$n = \frac{Z^2 N(pq)}{N(e)^2 + Z^2(pq)}$$

Where n = Sample Size

n = Population

p = Probability of success/proportion

q = Probability of failure/proportion

Z = Standard (error of mean) normal deviate

e = Limit of tolerable error (or level of significance

n = 2,580

p = .5

q = (1 - .5) = .5

Z = 1.96 confidence interval

e = 0.05percent

$$n = \frac{(1.96)^2 \times 2580 \times .5 \times .5}{2580(0.05)^2 + (1.96)^2 \times .5 \times .5}$$

$$n = \frac{3.8416 \times 2580 \times .25}{2580(0.00025) + 3.8416 \times .25}$$

$$n = \frac{2477.8}{0.645 + 0.9604} = \frac{2477.8}{1.6054} = 154$$

3.6 Sampling Techniques

Simple random sampling techniques were used to distribute the questionnaire to the non-teaching staff (junior and senior).

3.7 Method of Data Collection

The researcher administered the questionnaire personally to the respondents. The researcher visited the institutions selected for the research, after obtaining the consent of the respondents, she administered the questionnaire to them, waited while they responded to them. This ensured one hundred percent return rate of all the copies of the questionnaire administered.

3.8 Validation of the Instrument

The instrument was face-validated by two experts from Public Administration Department, Management science, Enugu State University of Science and Technology (ESUT). They validated the instrument in terms of relevance, comprehensiveness and appropriateness of content, clarity of language and possibility of ambiguities, errors and omissions. The experts' opinion and comment were incorporated into the final draft of the instrument

3.9 Reliability of the Instrument

The reliability of the instrument was determined by administering questionnaire to 90 non-teaching staff of the four State owned tertiary institutions in Enugu State. The data obtained from their responses were computed using Cronbach Alpha method. Cronbach Alpha was deemed appropriate since it is applicable to items that are

not polychotomously scored. Consequently, a grand reliability coefficient of 0.80 were obtained from questionnaire items. A grand coefficient of 0.80 indicates that the instrument was reliable for the study.

3.10 Methods of Data Analyses

The method of data analysis used for the study was simple percentage. Data collected from the respondents were presented in tables and analyzed using simple percentage. While the hypotheses were tested using the Chi-Square statistical tool.

Simple percentage formula

$$\frac{f}{N} \times 100$$

N = 1

Where f = frequency, N = sum of cumulative frequency

$$\text{Chi-square formula } \chi^2 = \sum \frac{(O-e)^2}{e}$$

Where \sum = summation sign

O = observed frequency data

e = expected frequency data

Decision Rule: Accept null hypothesis if table value (5.99) is greater than calculated value, otherwise reject null hypothesis.

Data Presentation and Analysis

4.1 Data Presentation

This is the statistical presentation of the respondents' view to the research question.

4.2 Data Analysis

4.2.1 Research Question 1

How does electronic document management affect operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria?

Table 4.1: The respondent's views on the electronic document management affect operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria

Options*	Frequency	Percent
Reduction in Paper Costs	30	19
Enhanced Efficiency and Productivity	28	18
Improved Accessibility and Retrieval	26	19
Streamlined Administrative Processes	23	21
Reduction in Document Loss and Damage	24	22
Total	154	100

Source: Researcher, 2025

From the table 4.1, Majority of the respondents which constitute 19% agreed that reduction in paper costs, 18% of the respondents agreed that enhanced efficiency and productivity, 19% of the respondents concord that improved accessibility and retrieval, 21% of the respondents noted that streamlined administrative processes 22% of the responded agreed that reduction in document loss and damage. The findings of the table above, revealed that electronic documentation management affect operational efficiency in State owned tertiary institutions in Enugu State, Nigeria.

4.2.2 Research Question 2

What is the effect of workflow automation on record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria?

Table 4.2: The respondents view on workflow automation and record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria

Options	Frequency	Percent
Improved Communication and Collaboration	41	27
Flexible Work Environment	38	25
Enhanced Professional Development and Training	25	16
Increased Productivity and Efficiency	26	17
Improved Feedback and Recognition Systems	24	16
Total	154	100

Source: Researcher, 2025

From the table 4.2., 27% of the respondents were of the opinion that improved communication and collaboration, 25% of the respondents were of the opinion that flexible work environment, 16% of the respondents occurred that enhanced professional development and training, 17% agreed that increased productivity and efficiency, while 16% of the respondents agreed that improved feedback and recognition systems, infrastructural and sustainable development. The findings of the table therefore revealed that workflow automation affect record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria

4.3 Test of Hypotheses

The hypotheses were tested using the chi-square statistical tool

4.3.1 Test of Hypothesis I

H_{01} : Electronic document management does not have significant effect on operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria

Table 4.3: The respondent's views on electronic document management affect operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria

Options	Frequency	Percent
Reduction in Paper Costs	30	19
Enhanced Efficiency and Productivity	28	18
Improved Accessibility and Retrieval	29	19
Streamlined Administrative Processes	33	21
Reduction in Document Loss and Damage	34	22

Total	154	100
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Source: Researcher, 2025

Table 4.4: Chi Square table for testing hypotheses I

O	E	(O-e)	(O-e) ²	$\frac{(O-e)^2}{E}$
30	15.2	14.8	219.04	14.41
28	15.2	2.8	7.84	0.52
29	15.2	10.8	116.64	7.67
33	15.2	7.8	60.84	4.00
34	15.2	8.8	77.44	5.09
154				31.69

Table value = 5.991, calculated value = 31.69

Decision: Since the calculated value (31.69) is greater than the table value (5.99), the H₀ (null hypothesis) is rejected. This implies that electronic document management has positive affect operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria

4.3.2 Test of Hypothesis 2

H₀₂: Workflow automation does not have significant effect on record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria.

Table 4.5: The respondents view on effect of workflow automation on record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria

Options	Frequency	Percent
Improved Communication and Collaboration	41	27
Flexible Work Environment	38	25
Enhanced Professional Development and Training	25	16
Increased Productivity and Efficiency	26	17
Improved Feedback and Recognition Systems	24	16
Total	154	100

Source: Researcher, 2025

Table 4.5: Chi Square table for testing hypotheses II

O	E	(O-e)	(O-e) ²	$\frac{(O-e)^2}{E}$
41	15.2	12.8	163.84	10.77
38	15.2	12.8	163.84	10.77
25	15.2	9.8	96.04	6.34
26	15.2	10.8	116.64	7.67
24	15.2	8.8	77.44	5.09

Table value = 5.991, calculated value = 40.64

Decision: Since the calculated value (40.64) is greater than the table value (5.99), the H_0 (null hypothesis) rejected. This means that there is positive effect of workflow automation on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria.

4.4 Discussion of Findings

Electronic document management does not have positive effect on operational efficiency in State-owned tertiary institutions in Enugu State, Nigeria.

From the findings of table 4.4, the calculated value (31.69) is greater than the table value (5.99), the null hypotheses I is therefore reject. This implies that there was positive effect of electronic document on operational efficiency in state-owned tertiary institutions in Enugu State, Nigeria. The findings of the table above is in line with the assertion of Onyewigwe (2009), that the highlights some challenges faced by institutions in implementing paperless office management, including inadequate infrastructure, limited technical expertise, and resistance to change from some employees. Despite these challenges, the overall findings indicate that paperless office management has improved the performance of state-owned tertiary institutions in Enugu State, Nigeria, and has the potential to enhance their competitiveness and reputation.

Workflow automation does not have positive effect on record retrieval time in State-owned tertiary institutions in Enugu State, Nigeria.

From the findings of table 4.5, the calculated value (40.64) is greater than the table value (5.99), the null hypotheses II is therefore rejected. This means that there was positive effect of workflow automation on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria. The findings of the table above, confirmed the observation of Onyenwigwe (2009) that the study reveals that the level of adoption of storage cloud in state-owned tertiary institutions in Enugu State, Nigeria, is moderate. While some institutions have made significant progress in adopting digital solutions and automating processes, others are still in the early stages of implementation.

Summary of Findings, Conclusions and Recommendations

5.1 Findings

1. Electronic documentation management had a positive effect on operational efficiency in state-owned tertiary institutions in Enugu State, Nigeria.
2. Workflow automation had a positive effect on record retrieval time in state-owned tertiary institutions in Enugu State, Nigeria.

5.2 Conclusion

The study concluded that paperless office management had positive effect on performance of state-owned tertiary institutions in Enugu State, Nigeria. The transition to paperless office management in State-owned tertiary institutions in Enugu State holds positive promise for improving electronic documentation management, workflow on operational efficiency and record retrieval time.

5.3 Recommendations

Based on the findings and conclusions drawn, the following recommendations were therefore made;

1. The government and regulatory bodies should provide support and incentives for state-owned tertiary institutions to adopt electronic documentation, such as funding, technical assistance, and policy guidelines.

2. Institutions should invest in capacity building and training programs for their employees to develop the necessary skills and competencies for effective workflow automation. This includes training on digital tools, software, and best practices, as well as change management and digital literacy programs to address resistance to change and ensure a smooth transition of handling correspondence.

5.4 Contribution to Knowledge

This study examined the effect of paperless office management on the performance of non-teaching staff of state owned tertiary institution in Enugu State, Nigeria. This study explores the various aspect of paperless office management like electronic documentation management and workflow automation and, also performance in the area of operational efficiency and record retrieval time. This study contributed to the body of existing knowledge on paperless office management and performance in Enugu state, Nigeria.

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